The Desktop Regulatory State

The Countervailing Power of Individuals and Networks

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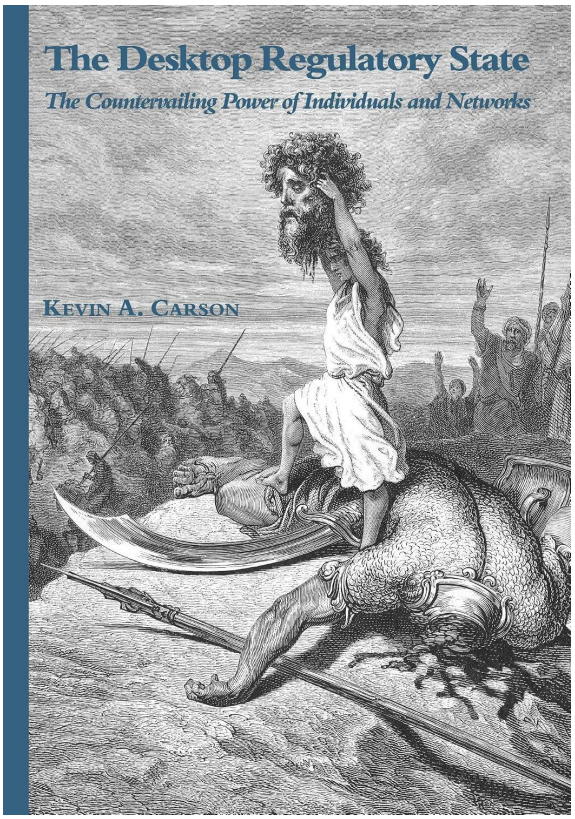

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Preface

Like every book I've written since the first, this book was inspired by ideas I encountered in researching the previous one but was unable to explore and develop as much as I'd have liked within that framework. In writing the material on crisis tendencies of capitalism in *Studies in Mutualist Political Economy*, the writings by Paul Goodman and Ivan Illich on the hegemony of bureaucratic culture set a train of thought in motion that eventually lead to writing *Organization Theory*. Researching the chapter on decentralized manufacturing technology in *Organization Theory* led, in turn, to a stand-alone book on micro-manufacturing (*Homebrew Industrial Revolution*).

This book, in turn, is the development of ideas on network organization and stigmergy I touched on in *Homebrew Industrial Revolution*. It applies many of the same ideas in the realm of information that I developed earlier in regard to physical production in that book. It also ties in some of the ideas I discussed in the chapter on labor organization in *Organization Theory*, like open-mouth sabotage, but in much greater scope.

This book was a much longer time writing than any of my others, and because so much of its content involved ongoing current news I had much greater difficulty in either finding a cutoff point or setting parameters to filter out excessive detail. In the Appendix I wound up deleting a great deal of detail I'd previously incorporated on the activities of the various networked social movements starting with the Arab Spring, and shifted instead to a greater relative focus on the general principles behind the wave of networked movements since the EZLN uprising in 1994. My judgments on the level of detail to preserve were necessarily somewhat arbitrary; whether the result is satisfactory is up to the reader to decide.

This book, in keeping with the spirit of the subject matter, is far more a product of stigmergic organization and the wisdom of crowds than anything I've previously written. In an attempt to adhere to Eric Raymond's principle that "many eyeballs make shallow bugs," I first posted the roughly eight-month-old draft online at desktopregulatorystate.wordpress.com, warts and all, in March 2011. At the time it was four chapters (which have since fissioned into twelve), consisting mostly of placeholder notes in many places and containing some sections entirely blank except for the title. Since then I've automatically updated the online text whenever it was edited. I have benefited from many suggestions and tips from those following the progress of the book, including Steve Herrick's wonderful job formatting the online word processor template for the online text, as well as all the information I get from email discussion lists (particularly the P2P Foundation, C4SS working group and Networked Labor lists), the leads from friends on Twitter, and the blogs and news sites I follow via RSS reader. And many thanks in particular to my friend Gary Chartier at La Sierra University, who has formatted this as well as two of my previous books for print!

1. The Stigmergic Revolution

Several parallel developments are driving a trend toward the growing obsolescence of large, highly capitalized, hierarchical organizations, and the ability of networked individuals with comparatively cheap capital equipment to perform the functions formerly performed by such organizations. They include the drastically reduced cost of capital goods required for informational and material production, as well as drastically reduced transaction costs of coordinating efforts between individuals.

I. Reduced Capital Outlays

For most of the past two hundred years, the trend has been toward increasing capital outlays for most forms of production. The cost of the basic capital equipment required for production—the mass-production factory, the large printing press, the radio or TV station—was the primary justification for the large organization. The economy was dominated by large, hierarchical organizations administering enormous masses of capital. And the astronomical cost of production machinery was also the main justification for the wage system: production machinery was so expensive that only the rich could afford it, and hire others to work it.

In recent decades we've seen a reversal of this trend: a shift back from expensive, specialized machinery to inexpensive, general-purpose tools. Although this is true of both material and immaterial production—as attested by the recent revolution in garage-scale CNC machine tools[1]—it was true first and most dramatically in the immaterial sphere.

The desktop computer is the primary item of capital equipment required for entering a growing number of industries, like music, desktop publishing and software design. The desktop computer, supplemented by assorted packages of increasingly cheap printing or sound editing equipment, is capable of doing what previously required a minimum investment of hundreds of thousands of dollars. In the words of Yochai Benkler: "declining price of computation, communication, and storage have, as a practical matter, placed the material means of information and cultural production in the hands of a significant fraction of the world's population—on the order of a billion people around the globe."[2](Of course since that passage was written the proliferation of cheapening smartphones has probably expanded the latter figure to include over half the world's population.)

The growing importance of human capital, and the implosion of capital outlays required to enter the market, have had revolutionary implications for production in the immaterial sphere. In the old days, the immense outlay for physical assets was the primary basis for the corporate hierarchy's power, and in particular for its control over human capital and other intangible assets.

[1] See Kevin Carson, *The Homebrew Industrial Revolution: A Low-Overhead Manifesto* (CreateSpace, 2010).

[2] Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven and London: Yale University Press, 2006), p. 3.

In many information and culture industries, according to Benkler, the initial outlay for entering the market in the days of "broadcast culture" was in the hundreds of thousands of dollars or more.

> Since the introduction of the mechanical press and the telegraph, followed by the phonograph, film, the high-powered radio transmitter, and through to the cable plant or satellite, the capital costs of fixing information and cultural goods in a transmission medium—a high-circulation newspaper, a record or movie, a radio or television program—have been high and increasing.[3]

The broadcast era media, for instance, were "typified by high-cost hubs and cheap, ubiquitous, reception-only systems at the end… [P]roduction in the information and entertainment industries was restricted to those who could collect sufficient funds to set up a hub."[4] In the case of print periodicals, the increasing cost of printing equipment from the mid-nineteenth century on served as the main entry barrier for organizing the hubs. By 1850 the typical startup cost of a newspaper was $100,000—$2.38 million in 2005 dollars.[5] In other words, as the saying went, freedom of the press was great so long as you could afford to own a press.

The networked information economy, in contrast, is distinguished by "network architecture and the [low] cost of becoming a speaker."

> The first element is the shift from a hub-and-spoke architecture with unidirectional links to the end points in the mass media, to distributed architecture with multidirectional connections among all nodes in the networked information environment. The second is the practical elimination of communications costs as a barrier to speaking across associational boundaries. Together, these characteristics have fundamentally altered the capacity of individuals, acting alone or with others, to be active participants in the public sphere as opposed to its passive readers, listeners, or viewers.[6]

Today most people in the developed world, and in a rapidly growing share of the developing world, can afford to own a press.

In the old days, the owners of the hubs—CBS News, the Associated Press, etc.—decided what you could hear. Today you can set up a blog, or record a podcast, and anybody in the world who cares enough to go to your URL can look at it free of charge (and anyone who agrees with it—or wants to tear it apart—can provide a hyperlink).

The cultural authoritarianism that resulted from the old state of affairs, as Clay Shirky points out, is unimaginable to someone who grew up with access to the Internet.

> Despite half a century of hand-wringing about media concentration, my students have never known a media landscape of anything less than increasing abundance. They have never known a world with only three television channels, a world where the only choice a viewer had in the early evening was which white man was going to read them the news in English. They can understand the shift from scarcity to

[3] *Ibid*., p. 51.
[4] *Ibid*., p. 179.
[5] *Ibid*., p. 188.
[6] *Ibid*., pp. 212–13.

> abundance, since the process is still going on today. A much harder thing to explain to them is this: if you were a citizen of that world, and you had something you needed to say in public, you couldn't. Period.... Movie reviews came from movie reviewers. Public opinions came from opinion columnists. Reporting came from reporters. The conversational space available to mere mortals consisted of the kitchen table, the water cooler, and occasionally letter writing...[7]

The central change that makes these things possible, according to Benkler, is that "the basic physical capital necessary to express and communicate human meaning is the connected personal computer."

> The core functionalities of processing, storage, and communications are widely owned throughout the population of users... The high capital costs that were a prerequisite to gathering, working, and communicating information, knowledge, and culture, have now been widely distributed in the society. The entry barrier they posed no longer offers a condensation point for the large organizations that once dominated the information environment.[8]

The desktop revolution and the Internet mean that the minimum capital outlay for entering most entertainment and information industries has fallen to a few hundred or a few thousand dollars, and the marginal cost of reproduction is zero.

The networked environment, combined with endless varieties of cheap software for creating and editing content, makes it possible for the amateur to produce output of a quality once associated with giant publishing houses and recording companies.[9] That is true of the software industry, desktop publishing, and to a large extent even indie film (as witnessed by affordable editing technology and the success of projects like *Sky Captain*).

In the case of the music industry, thanks to cheap equipment and software for high quality recording and sound editing, the costs of independently producing and distributing a high-quality album have fallen through the floor. Bassist Steve Lawson writes:

> ... [T]he recording process—studio time and expertise used to be hugely expensive. But the cost of recording equipment has plummeted, just as the quality of the same has soared. Sure, expertise is still chargeable, but it's no longer a non-negotiable part of the deal. A smart band with a fast computer can now realistically make a release quality album-length body of songs for less than a grand...
>
> What does this actually mean? Well, it means that for me—and the hundreds of thousands of others like me—the process of making and releasing music has never been easier. The task of finding an audience, of seeding the discovery process, has never cost less or been more fun. It's now possible for me to update my audience and friends (the cross-over between the two is happening on a daily basis thanks to social media tools) about what I'm doing—musically or otherwise—and to hear from them, to get involved in their lives, and for my music to be inspired by them...

[7] Clay Shirky, *Cognitive Surplus* (New York: Penguin Press, 2010), pp. 60–61.
[8] *Ibid*., pp. 32–33.
[9] *Ibid*., p. 54.

> So, if things are so great for the indies, does that mean loads of people are making loads of money? Not at all. But the false notion there is that any musicians were before! We haven't moved from an age of riches in music to an age of poverty in music. We've moved from an age of massive debt and no creative control in music to an age of solvency and creative autonomy. It really is win/win.[10]

As the last statement suggests, it may well be that most of the revenue loss to the music industry has fallen, not on actual performers, but on the middlemen in the record companies themselves.

Networked distribution models have already gone a long way toward challenging and supplanting older models. For example the alternative rock group Radiohead marketed an album (*Rainbows*) directly over the Web, making it available for free and accepting whatever contributions downloaders saw fit to give. This would seem to be an ideal approach for independent artists, compared to the difficulty of making it through the record company gatekeepers and then settling for the royalties paid out after all the middlemen take their cut. It only requires, for all intents and purposes, a cheap website with a PayPal button. I have personal experience with a similar approach to publishing books, making them available for free online and selling hard copies through an on-demand publisher. And outside the blockbuster market, most writers and musical artists probably know more than the in-house marketing experts at the big content companies about their own niche markets. So they can do a better job marketing their own material virally to their target audiences through blogs, email lists and social networks than they would relying on the by-the-numbers efforts of the publishers' in-house promoters.

This approach undermines the business model of the old record and publishing companies, and probably does cut into the revenues of their old stables of blockbuster artists. It's probably becoming harder for another Stephen King or Mick Jagger to make megabucks because of competition from the networked distribution model, and surely a lot harder for the old gatekeeper corporations to make the giant piles of money they used to.

But if it's harder for the big boys to make gigantic piles of money, it's easier for a lot more little ones to make modest piles. Endless possibilities result from all the things they can now do for themselves, at virtually zero cost, that formerly only a highly capitalized record or publishing company could do for them.

As an independent scholar and author, I share Steve Lawson's view of things. From my perspective, the proper basis for comparison is the money I can make that I never could have made at all in the "good old days." In the good old days, I'd have—and have done—painstakingly put together a manuscript of hundreds of pages, and then put it away to gather dust when I couldn't persuade the gatekeepers at a conventional publisher that it was worth marketing. Never mind whether the facsimile pdf's of my books available at torrent sites are costing me money (I don't think they are—I believe the free e-books are more like viral advertising). More importantly, if it weren't for digital publishing technologies and free publishing venues on the Internet, I would probably have lived and died doing menial labor with nobody anywhere ever hearing of my ideas. Thanks to digital culture, I'm able to make my work directly available to anyone in the world who has an Internet connection. If only a tiny fraction of the people who can read it for free decide to buy it, giving me a few thousand dollars a year in royalties, I'm richer by exactly that amount

[10] Steve Lawson, "The Future of Music is … Indie!" *Agit8*, September 10, 2009 <agit8.org.uk>.

than I would have been in the "good old days" when my manuscripts would have yellowed in an attic.

That extra money may not be enough to support me by itself, but it's enabled me at various times to pay off debts and put away go-to-hell money equivalent to several months' wages. Right now about half my income, in an average month, comes from writing. That probably puts me in a much better bargaining position vis-a-vis my employer than most people enjoy.

For every small full-time musician who has a harder time scraping by, and may have to supplement her performing revenues with a day job, I suspect there are ten people like me who would have spent their entire lives as (if you'll pardon the expression) mute inglorious Miltons, without ever making a cent from their music or writing, but who can now be heard. And for every blockbuster writer or musician who has a few million shaved off her multi-million dollar revenues as a result of online "piracy," I suspect there are probably a hundred people like me.

As for the old broadcast media, podcasting makes it possible to distribute "radio" and "television" programming, at virtually no cost, to anyone with a broadband connection. As radio historian Jesse Walker notes, satellite radio's lackadaisical economic performance doesn't mean people prefer to stick with AM and FM radio; it means, rather, that the iPod has replaced the transistor radio as the primary portable listening medium, and that downloaded files have replaced the live broadcast as the primary form of content.[11]

A network of amateur contributors has peer-produced an encyclopedia, Wikipedia, which Britannica sees as a rival.

There are enormous online libraries like Google Books, Project Gutenberg and Internet Archive, as well as more specialized efforts like Marxists.org (which archives the collected works of Marx, Engels and Lenin, and of writers ranging from Kautsky to Luxemburg to Trotsky to C.L.R. James), the Anarchy Archives (extensive archives of most of the major works of classical anarchism), and Constitution.org (including, among many other things, Elliot's debates in the ratifying conventions and St. George Tucker's edition of Blackstone). In effect they give any kid with a smart phone, whether in the Third World or in an American ghetto, access to the equivalent of a university library. If one is willing and able to pay an annual subscription fee, there are enormous online collections of scholarly journals like JSTOR. And rebellious scholars are in process of tearing down the paywalls and the textbook racket; scholars with JSTOR memberships are providing articles for free to their peer networks. It's possible to solicit pdfs of paywalled articles using the #ICanHazPdf hashtag on Twitter. And there are also services which strip DRM from college textbook pdfs which publishers make available for rental, so that they can be used indefinitely and distributed through torrent download sites.

The network revolution has drastically lowered the transaction costs of organizing education outside the conventional institutional framework. In most cases, the industrial model of education, based on transporting human raw material to a centrally located "learning factory" for processing, is obsolete. Forty years ago Ivan Illich, in *Deschooling Society*, proposed decentralized community learning nets that would put people in contact with the teachers they wanted to learn from, and provide an indexed repository of learning materials. The Internet has made this a reality beyond Illich's wildest dreams.

[11] Jesse Walker, "The Satellite Radio Blues: Why is XM Sirius on the verge of bankruptcy?," *Reason*, February 27, 2009 <reason.com>.

Niall Cook, in *Enterprise 2.0*, describes the comparative efficiencies of software available outside the enterprise to the "enterprise software" in common use by employers. Self-managed peer networks, and individuals meeting their own needs in the outside economy, organize their efforts through social software and platforms chosen by the users themselves based on their superior usability for their purposes. And they are free to do so without corporate bureaucracies and their officially defined procedural rules acting as a ball and chain.

Enterprise software, in contrast, is chosen by non-users for use by other people of whose needs they know little (at best).

Blogs and wikis, and the free, browser-based platforms offered by Google and Mozilla, are a quantum improvement on the proprietary enterprise software that management typically forces on its employees. My OpenOffice CD cost me all of ten bucks, as opposed to $200 for Microsoft Office. The kinds of productivity software and social software freely available to individuals in their private lives is far better than the enterprise software that corporate bureaucrats buy for a captive clientele of wage slaves—consumer software capabilities amount to "a fully functioning, alternative IT department."[12] Corporate IT departments, in contrast, "prefer to invest in a suite of tools 'offered by a major incumbent vendor like Microsoft or IBM'." System specs are driven by management's top-down requirements rather than by user needs.

> … a small group of people at the top of the organization identify a problem, spend 12 months identifying and implementing a solution, and a huge amount of resources launching it, only then to find that employees don't or won't use it because they don't buy in to the original problem.[13]

Management is inclined "to conduct a detailed requirements analysis with the gestation period of an elephant simply in order to choose a $1,000 social software application."[14] Employees often wind up using their company credit cards to purchase needed tools online rather than "wait for [the] IT department to build a business case and secure funding."[15] This is the direct opposite of agility.

It's just one particular example of the gold-plated turd phenomenon, in which stovepiped corporate design bureaucracies develop products for sale to other stovepiped corporate procurement bureaucracies, without the intervention of user feedback at any point in the process.

As a result of all this, people are more productive away from work than they are at work. And management wonders why people would rather work at home using their own software tools than go through Checkpoint Charlie to use a bunch of klunky proprietary "productivity software" from the Whore of Redmond.

As Tom Coates put it, all these developments in the field of immaterial production mean that "the gap between what can be accomplished at home and what can be accomplished in a work environment has narrowed dramatically over the last ten to fifteen years."[16]

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[12] Niall Cook, *Enterprise 2.0: How Social Software Will Change the Future of Work* (Burlington, Vt.: Gower, 2008), p. 91.

[13] *Ibid*., p. 93.

[14] *Ibid*., p. 95.

[15] *Ibid*., p. 96.

[16] Tom Coates, "(Weblogs and) The Mass Amateurisation of (Nearly) Everything…" *Plasticbag.org*, September 3, 2003 <www.plasticbag.org>.

Even when free and open source models don't quite equal the quality of the proprietary stuff, as Cory Doctorow argues they usually manage a close enough approximation of it at a tiny fraction of the cost.

> This is the pattern: doing something x percent as well with less-than-x percent of the resources. A blog may be 10 percent as good at covering the local news as the old, local paper was, but it costs less than 1 percent of what that old local paper cost to put out. A home recording studio and self-promotion may get your album into 30 percent as many hands, but it does so at five percent of what it costs a record label to put out the same recording.
>
> What does this mean? Cheaper experimentation, cheaper failure, broader participation. Which means more diversity, more discovery, more good stuff that could never surface when the startup costs were so high that no one wanted to take any risks.

And the gap between almost-as-good and just-as-good is narrowing rapidly.[17]

II. Distributed Infrastructure and Ephemeralization

The larger and more hierarchical institutions become, and the more centralized the economic system, the larger the total share of production that will go to overhead, administration, waste, and the cost of doing business. The reasons are structural and geometrical.

At its most basic, it's an application of the old cube-square rule. When you double the dimensions of a solid object, you increase its surface area fourfold (two squared), but its volume eightfold (two cubed). Similarly, the number of internal relationships in an organization increases as the square of the number of individuals making it up.

Leopold Kohr gave the example, in *The Overdeveloped Nations*, of a skyscraper. The more stories you add, the larger the share of floor space on each story is taken up by ventilation ducts, wiring and pipes, elevator shafts, stairwells, etc. Eventually you reach a point at which the increased space produced by adding another story is entirely eaten up by the increased support infrastructure.

The larger the scale of production, the more it must be divorced from demand, which means that the ostensible "economies" of large batch production are offset, and then more than offset, by the increasing costs of finding new ways of making people buy stuff that was produced without regard to preexisting orders.

The society becomes more and more like the Ministry of Central Services in *Brazil*, or The Feds in Neal Stephenson's *Snow Crash*, and the distribution of occupations increasingly resembles the demographic profile of the promoters and middlemen in the crashed spaceship in *A Hitchhiker's Guide to the Galaxy*, who founded the human race on Earth.

The only way out is a new standard of progress that doesn't equate "growth" with larger institutional size and more centralization: scalable, distributed infrastructure, stigmergic organization, module-and-platform design configurations, and production capacity sited close to the point of consumption and scaled to demand.

[17] Cory Doctorow, "Close Enough for Rock 'n' Roll," *Locus*, January 7, 2010 <www.locusmag.com>.

Paul Hawken and Amory and Hunter Lovins, in *Natural Capitalism*, stated the general principle that when load-bearing infrastructures are built to handle loads at peak demand, most of the unit cost comes from the added infrastructure to handle the increased usage during the small minority of peak load time. They gave the specific example of home heating, where enormous savings could be achieved by scaling capacity to handle only average usage, with additional demand handled through spot heating. Most of the horsepower in a contemporary SUV exists only for brief periods of acceleration when changing lanes.

It's a basic principle of lean production: most costs come from five percent of point consumption needs, and from scaling the capacity of the load-bearing infrastructure to cover that extra five percent instead of just handling the first ninetyfive percent. It ties in, as well, with another lean principle: getting production out of sync with demand (including the downstream demand for the output of one step in a process), either spatially or temporally, creates inefficiencies. Optimizing one stage without regard to production flow and downstream demand usually involves expensive infrastructure to get an in-process input from one stage to another, often with intermediate storage while it is awaiting a need. The total resulting infrastructure cost greatly exceeds the saving at individual steps. Inefficient synchronization of sequential steps in any process results in bloated overhead costs from additional storage and handling infrastructure.

More generally, centralized infrastructures must be scaled to handle peak loads even when such loads only occur a small fraction of the time. And then they must amortize the extra cost, by breaking user behavior to the needs of the infrastructure.

At the opposite pole is distributed infrastructure that's mostly distributed among the endpoints, with links directly between endpoints rather than passing through a central hub, and volume driven entirely by user demand at the endpoints. Since the capital goods possessed by the endpoints are a miniscule fraction of the cost of a centralized infrastructure, there is no incentive to subordinate endusers to the needs of the infrastructure.

The classic example is Bucky Fuller's: the replacement of the untold millions of tons of metal in transoceanic cables with a few dozen one-ton satellites. The entire infrastructure consists of satellite dishes at the endpoints commuinicating—via free, immaterial ether!—to the satellites.

Likewise the enormous infrastructure tied up in the civil aviation system's central hubs and batch-and-queue processing, as opposed to small jets flying directly between endpoints.

Another example is mass-production industry, which minimizes unit costs by running its enormously costly capital-intensive machinery at full capacity 24/7, and then requires organizing a society to guarantee consumption of the full output whether consumers want the shit or not—what's called "supply-push distribution." If consumers won't take it all, you soak up surplus output by destroying it through a permanent war economy, sinking it into an Interstate Highway System, etc.—or maybe just making stuff to fall apart.

The opposite of mass-production is distributed production on the EmiliaRomagna model described by Charles Sabel and Michel Piore in *The Second Industrial Divide*, with the capital infrastructure distributed to the point of consumption and output geared to local demand. The transnational corporate model of outsourcing is an attempt to put this new wine in old bottles. It distributes the production facilities, but does so on the basis of local labor cost rather than the location of market demand. So it still relies on the centralized wholesale infrastructure of warehouses on wheels/containerships, scaled to peak load, to transfer goods from the distributed production sites to the point of final consumption. The pure and unadulterated distributed man-

ufacturing model, on the other hand, does away with this infrastructure by siting production at the last-mile network of consumption.

The model of stigmergic organization in Wikipedia and open-source design—the central theme of this book—is an example of distributed infrastructure. Individual contributions are managed entirely by endpoint users, coordinating their efforts with the finished body of work, without the intermediary of a centralized institutional framework as in old-line activist organizations.

III. Distributed Infrastructure and Scalability

Another advantage of distributed infrastructure is that it is scalable; that is, each separate part is capable of functioning on its own, regardless of whether the rest of the system is functioning. When a centralized infrastructure fails at any point, on the other hand, the whole system is incapacitated.

> A large dam project must be completed to give service, and if something in the environment changes half way through the project, there is little hope of adapting the project to the new circumstances. The entire risk is assumed at the start of the project, based on long term projections about the future in many different domains, from energy demand through to geopolitical stability. On the other hand, an array of micropower projects could provide equivalent electrical services, and as the projects are each built, continuous assessment of the "right next move" can be made to suit learning from previous projects, response to changing demand, adoption of improved technologies or shifting priorities. Fundamentally, half a dam is no dam at all, but 500 of 1000 small projects is half way to the goal. A modular approach to infrastructure in an uncertain world just makes sense.[18]

IV. Network Organization

As Johan Soderburg argues, "[t]he universally applicable computer run on free software and connected to an open network… has in some respects leveled the playing field. Through the global communication network, hackers are matching the coordinating and logistic capabilities of state and capital."[19]

Until the early 1990s, there were many possible Internets. What makes the Internet the "Internet" we know is really the World Wide Web: all the billions of web pages linked together by hyperlinks. And depending on the institutional context in which hyperlinks had been introduced, the Web as we know it might never have existed. Tim Berners-Lee in 1990,

> published a more formal proposal… to build a " Hypertext project" called "WorldWideWeb"… as a "web" of "hypertext documents" to be viewed by "browsers" using a client–server architecture. This proposal estimated that a read-only web would be

[18] Vinay Gupta, *The Global Village Development Bank* (2009/03/12 draft 2).

[19] Johan Soderberg, *Hacking Capitalism: The Free and Open Source Software Movement* (New York and London: Routledge, 2008), p. 2.

> developed within three months and that it would take six months to achieve "the creation of new links and new material by readers, [so that] authorship becomes universal" as well as "the automatic notification of a reader when new material of interest to him/her has become available." While the read-only goal was met, accessible authorship of web content took longer to mature, with the wiki concept, blogs, Web 2.0 and RSS/Atom.[20]

The Web as we know it is something that could never have been built as the unified, conscious vision of any institution.

It's interesting that most visions of the "Information Superhighway," preWorld Wide Web, imagined it as populated largely by large institutional actors of one kind or another, and its communications as mainly one-way. It would be built on the backbone of the Internet's packet-switching infrastructure, vastly expanded in capacity by a fusion of the telephone and cable TV industries into a single highbandwidth fiber-optic network.

I recall seeing a speculative article in *TV Guide* in the late '70s, when I was just a junior high school kid, speculating on the science fictiony wonders that would soon be possible. Everyone would have a combination digital telephonecomputer-radio-cable TV terminal as the main entertainment center in their home, cable of accessing streaming content—television programs, movies, music, digitized books and periodicals, etc.—presumably on a paid basis. The key actors providing this whiz-bang content would be libraries, media conglomerates, and government agencies.

The Internet envisioned by figures like Al Gore and Bill Gates was, despite the decentralized nature of the physical packet-switching process, very centralized in terms of the actors providing content. Their vision of the Internet was simply as a foundation for the Information Superhighway. The legal infrastructure for the Superhighway consisted of the Telecommunications Act of 1996, which eliminated barriers to telephone/cable mergers, and the Digital Millennium Copyright Act of 1998, which created the draconian system of copyright law needed for digital content providers to turn the Superhighway into a turnpike. Here's what Bill Gates had to say, as late as early 2000:

> This new generation of set-top boxes that connects up to the Internet is very much part of that. The potential impact is pretty phenomenal in the terms of being able to watch a TV show whenever you want to. There will be so many choices out there. You've got to imagine that a software agent will help you find things that you might be interested in.
>
> … The "TV guide" will almost be like a search portal where you'll customize and say, "I'm never interested in this, but I am particularly interested in that." It's already getting a little unwieldy. When you turn on DirectTV and you step through every channel—well, there's three minutes of your life.
>
> When you walk into your living room six years from now, you'll be able to just say what you're interested in, and have the screen help you pick out a video that you care about. It's not going to be "Let's look at channels 4, 5, and 7." It's going to be

[20] "World Wide Web," *Wikipedia* <en.wikipedia.org> Accessed September 27, 2011.

> something that has pretty incredible graphics and it's got an Internet connection to it.[21]

But the Information Superhighway—in the sense of a fusion of telephone, cable, radio, and on-demand music and movies, accessed through a single digital home entertainment center, simply fizzled out. Instead, the World Wide Web took over the Internet.

Mike Masnick speculates on what the World Wide Web—if it could even be called that—would have looked like, had Tim Berners-Lee obtained a patent on the hyperlinked architecture of the Web. And his hypothetical description reads very close to the vision of *TV Guide*, Gore and Gates.

> Where do you think the world would be today if the World Wide Web had been patented? Here are a few guesses:
>
> - Rather than an open World Wide Web, most people would have remained on proprietary, walled gardens, like AOL, Compuserve, Prodigy and Delphi. While those might have eventually run afoul of the patents, since they were large companies or backed by large companies, those would have been the few willing to pay the licensing fee. The innovation level in terms of the web would have been drastically limited. Concepts like AJAX, real time info, etc. would not be present or would be in their infancy. The only companies "innovating" on these issues would be those few large players, and they wouldn't even think of the value of such things.
> - No Google. Search would be dismal, and limited to only the proprietary system you were on. Most people's use of online services would be more about "consumption" than "communication." There would still be chat rooms and such, but there wouldn't be massive public communication developments like blogs and Twitter. There might be some social networking elements, but they would be very rudimentary within the walled garden.
> - No iPhone. While some might see this as separate from the web, I disagree. I don't think we'd see quite the same interest or rise in smartphones without the web. Would we see limited proprietary "AOL phones?" Possibly, but with a fragmented market and not as much value, I doubt there's the necessary ecosystem to go as far as the iPhone.
> - Open internet limited by lawsuit. There would still be an open internet, and things like gopher and Usenet would have grown and been able to do a little innovation. However, if gopher tried to expand to be more web like, we would have seen a legal fight that not only delayed innovation, but limited the arenas in which we innovated.[22]

The Internet would have been a wasteland of walled-garden ISPs like AOL, with Usenet and BBSs grafted on. What Web there was would have been accessed, not by browsers or open search engines, but through portals like AOL or Yahoo!.

[21] "The Emperor Strikes Back—Bill Gates Interview," *Entertainment Weekly*, January 7, 2000 <www.angelfire.com>. Note—I corrected numerous errors, presumably the result of transcription or scanning error, from the online version.

[22] Mike Masnick,"What If Tim Berners-Lee Had Patented The Web?" *Techdirt*, August 11, 2011 <www.techdirt.com>.

It's not necessary to speculate that something like that would surely had happened had Berners-Lee not been first to the draw. It *was* happening, in fact. As recounted by David Weinberger, the software company for which he was vice president of strategic marketing at the time was in process of developing a proprietary document format with embedded links, when it was caught off-guard by the Mosaic browser. As the developers attempted to reassure themselves, their software was far more polished and professional-looking, and had better capabilities, than Mosaic. But deep down, they knew that Mosaic's lack of "bells and whistles" was more than compensated for by its openness.

> With our software, a publisher could embed a link from one document to another, but the publisher had to own both documents. That's fine if you're putting together a set of aircraft maintenance manuals and you want to make all the cross-references active, so that clicking on one brings up the page to which it's referring. But those links had to be compiled into the system. Once the document was published, no more links could be added except by recompiling the document. And, most important, the only people who could add new links were those working for the publisher. If you were an aircraft mechanic who had discovered some better ways to clean a fuel line, you had no way to publish your page with our system and no way to link it to the appropriate page in the official manual.
>
> … The Web ditches that model, with all its advantages as well as its drawbacks, and says instead, "You have something to say? Say it. You want to respond to something that's been said? Say it and link to it. You think something is interesting? Link to it from your home page. And you never have to ask anyone's permission." … By removing the central control points, the Web enabled a self-organizing, self-stimulated growth of contents and links on a scale the world has literally never before experienced.[23]

Rupert Murdoch's objections notwithstanding, the basic organizing principle of the Web is that you can link to another person's website without having to ask permission or secure her cooperation.[24]

It was actually the collapse of Web 1.0 in the dot-com bubble, and with it most of the hopes of the "visionaries" of the 1990s for enclosing the Web as a source of revenues, that created the space in which the decentralized vision of Web 2.0 could be fully realized. As Foundation for P2P Alternatives founder Michel Bauwens described it:

> All the pundits where predicting, then as now, that without capital, innovation would stop, and that the era of high internet growth was over for a foreseeable time. In actual fact, the reality was the very opposite, and something apparently very strange happened. In fact, almost everything we know, the Web 2.0, the emergence of social and participatory media, was born in the crucible of that downturn. In other words, innovation did not slow down, but actually increased during the downturn in investment. This showed the following new tendency at work: capitalism is

[23] David Weinberger, *Small Pieces Loosely Joined: A Unified Theory of the Web* (Cambridge, Mass.: Perseus Publishing, 2002), vii-ix.

[24] *Ibid*., pp. 52–53.

> increasingly being divorced from entrepreneurship, and entrepreneurship becomes a networked activity taking place through open platforms of collaboration.
>
> The reason is that internet technology fundamentally changes the relationship between innovation and capital. Before the internet, in the Schumpeterian world, innovators need capital for their research, that research is then protected through copyright and patents, and further funds create the necessary factories. In the post-schumpeterian world, creative souls congregate through the internet, create new software, or any kind of knowledge, create collaboration platforms on the cheap, and paradoxically, only need capital when they are successful, and the servers risk crashing from overload.[25]

The Web's many-to-many communications capabilities have enabled networks to coordinate the actions of self-directed individuals without the transaction costs of traditional hierarchies. Benkler explained the implications of networked communications, combined with the near-universal distribution of capital goods for information and cultural production:

> … the technical architectures, organizational models, and social dynamics of information production and exchange on the Internet have developed so that they allow us to structure the solution to problems—in particular to information production problems—in ways that are highly modular. This allows many diversely motivated people to act for a wide variety of reasons that, in combination, cohere into new useful information, knowledge, and cultural goods. These architectures and organizational models allow both independent creation that coexists and coheres into usable patterns, and interdependent cooperative enterprises in the form of peer-production processes.[26]

In other words, it's stigmergic organization (about which more below)—what Weinberger calls "small pieces loosely joined."

Networked crowdsourcing venues like Kickstarter, GoFundMe and Patreon have radically lowered the costs of aggregating capital even when total outlays are still beyond the means of the average individual. That means that even when the costs of the physical capital required for production are non-trivial, the transaction costs of aggregating the required investment capital from a number of small contributors.

But whether capital outlay requirements are large or small, network technology has had a revolutionary effect on the transaction costs of traditional organization.

That was true even back in the 1990s, when the Internet was dominated by static institutional websites. Email, both individual and in discussion lists, was a powerful tool for networked organization. The forms of culture jamming described by Naomi Klein in *No Logo*, themselves unprecedented and revolutionary in her day, were an outgrowth of the possibilities of the Web 1.0 of the 1990s. But the rise of Web 2.0, and the free platforms it made available, increased the possibilities exponentially. To quote Benkler again:

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[25] Michel Bauwens, "Asia Needs a Social Innovation Stimulus Plan," *P2P Foundation Blog*, March 23, 2009 <blog.p2pfoundation.net>.

[26] Benkler, *The Wealth of Networks*, pp. 105–106.

> What we are seeing now is the emergence of more effective collective action practices that are decentralized but do not rely on either the price system or a managerial structure for coordination… [The networked environment] provides a platform for new mechanisms for widely dispersed agents to adopt radically decentralized cooperation strategies other than by using proprietary and contractual claims to elicit prices or impose managerial commands… What we see in the networked information economy is a dramatic increase in the importance and the centrality of information produced in this way.[27]

Consider the drastically lowered costs of aggregating people into affinity groups or movements for the sharing of information and taking concerted action. Clay Shirky cites the example of Voice of the Faithful, a Catholic lay organization formed to fight priestly sexual abuse:

> Had VOTF been founded in 1992, the gap between hearing about it and deciding to join would have presented a series of small hurdles: How would you locate the organization? How would you contact it? If you requested literature, how long would it take to arrive, and by the time it got there, would you still be in the mood? None of these barriers to action is insurmountable, but together they subject the desire to act to the death of a thousand cuts.
>
> Because of the delays and costs involved, going from a couple dozen people in a basement to a large and global organization in six months is inconceivable without social tools like websites for membership and e-mail for communication.[28]

I can remember, as a grad student in the 1980s, experiencing that "series of small hurdles" in dealing with a completely different—but analogous—situation. If I heard of some periodical in my area of interest that the university library didn't carry, the only way to find out more about it was to dig through the latest installment of *Ulrich's Periodicals Directory*, send a query letter soliciting information about the price of sample issues, wait several weeks for a response, send in the money, and wait several more weeks for my sample.

Today, I just Google the title of the journal, and most likely it's got a website with an index of past issues. I can instantly get a pdf of any article of interest through online academic indexing services—or better yet, soliciting a free copy from someone with a JSTOR or SSRN membership. Soon, dedicated sharing sites with indexed academic articles available free for scholars will probably be as common as mp3-sharing sites—much to the chagrin of the academic publishing industry.

The cumulative effect is that a rapidly increasing share of the functions previously carried out by corporations and by the state can now be effectively out by what Marx and Engels, in *The Communist Manifesto*, called the "associated producers"—without any bureaucratic intermediation. Matthew Yglesias describes it as "actually existing Internet communism."[29]

Another result of the reduced threshold for communications in networks is the drastic increase in speed of propagation.

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[27] *Ibid*., p. 63.

[28] Shirky, *Here Comes Everybody* (Penguin, 2008), p. 151.

[29] Matthew Yglesias, "Actually Existing Internet Communism," *Yglesias*, November 9, 2010 <yglesias.thinkprogress.org>.

> Smart mobs are essentially a rapid cascade of coordinated action. "Whenever a new communications technology lowers the threshold for groups to act collectively, new kinds of institutions emerge… We are seeing the combination of network communications and social networks."[30]

V. Stigmergy

Networked organization is based on a principle known as stigmergy—a term coined by biologist Pierre-Paul Grasse in the 1950s to describe the process by which termites coordinate their activity. Social insects coordinate their efforts through the independent responses of individuals to environmental triggers like chemical markers, without any need for a central coordinating authority.[31] It was subsequently applied to the analysis of human society.[32]

As a sociological term stigmergy refers primarily to the kinds of networked organization associated with wikis, group blogs, and "leaderless" organizations configured along the lines of networked cells.

> The termites do not communicate about who is to do what how or when. Their only communication is indirect: the partially executed work of the ones provides information to the others about where to make their own contribution. In this way, there is no need for a centrally controlled plan, workflow, or division of labor.
>
> While people are of course much more intelligent than social insects and do communicate, open access development uses essentially the same stigmergic mechanism… : any new or revised document or software component uploaded to the site of a community is immediately scrutinized by the members of the community that are interested to use it. When one of them discovers a shortcoming, such as a bug, error or lacking functionality, that member will be inclined to either solve the problem him/herself, or at least point it out to the rest of the community, where it may again entice someone else to take up the problem.[33]

Social negotiation, according to Mark Elliott, is the traditional method of organizing collaborative group efforts, through agreements and compromise mediated by discussions between individuals. The exponential growth in the number of communications with the size of the group, obviously, imposes constraints on the feasible size of a collaborative group, before coordination must be achieved by hierarchy and top-down authority. Stigmergy, on the other hand, permits

[30] Paul Herzog, "21st Century Governance as a Complex Adaptive System" (Political Science, University of Utah), p. 4 . Proceedings PISTA. Informatics and Society Series (Orlando: International Institute of Informatics and Systemics, 2004). The quote is from Howard Rheingold, *Smart Mobs and Antiwar Protests* (2003).

[31] Mark Elliott, "Stigmergic Collaboration: The Evolution of Group Work," *M/C Journal*, May 2006 <journal.media-culture.org.au>.

[32] Francis Heylighen, "Stigmergy as a Universal Coordination Mechanism: components, varieties and applications." To appear in: Lewis, Ted & Marsh, Leslie (eds), *Human Stigmergy: Theoretical Developments and New Applications* (Studies in Applied Philosophy, Epistemology and Rational Ethics, Springer, 2015) <pespmc1.vub.ac.be>, p. 2.

[33] Heylighen, "Why is Open Access Development so Successful? Stigmergic organization and the economics of information," draft contribution to B. Lutterbeck, M. Bärwolff & R. A. Gehring (eds.), *Open Source Jahrbuch 2007* (Lehmanns Media, 2007) <pespmc1.vub.ac.be>, p. 7.

collaboration on an unlimited scale by individuals a cting independently. This distinction between social negotiation and stigmergy is illustrated, in particular, by the contrast between traditional models of co-authoring and collaboration in a wiki.[34] Individuals communicate indirectly, "via the stigmergic medium."[35]He makes a parallel distinction elsewhere between "discursive collaboration" and "stigmergic collaboration." "… [W]hen stigmergic collaboration is extended by computing and digital networks, a considerable augmentation of processing capacity takes place which allows for the bridging of the spatial and temporal limitations of discursive collaboration, while subtly shifting points of negotiation and interaction away from the social and towards the cultural."[36]

Stigmergic organization results in modular, building-block architectures. Such structures are ubiquitous because a modular structure

> transforms a system's ability to learn, evolve and adapt… Once a set of building blocks… has been tweaked and refined and thoroughly debugged through experience… then it can generally be adapted and recombined to build a great many new concepts… Certainly that's a much more efficient way to create something new than starting all over from scratch. And that fact, in turn, suggests a whole new mechanism for adaptation in general. Instead of moving through that immense space of possibilities step by step, so to speak, an adaptive system can reshuffle its building blocks and take giant leaps."

A small number of building blocks can be shuffled and recombined to make a huge number of complex systems.[37]

If you start with a large number of modular individuals, each capable of interacting with a few other individuals, and acting on other individuals according to a simple grammar of a few rules, under the right circumstances the modular individuals can undergo a rapid phase transition, according to systems theorist Stuart Kauffman: "The growth of complexity really does have something to do with farfrom-equilibrium systems building themselves up, cascading to higher and higher levels of organization. Atoms, molecules, autocatalytic sets, et cetera."[38]

Gus diZerega's discussion of spontaneous orders is closely analogous to stigmergy. Spontaneous orders

> arise from networks of independent equals whose actions generate positive and negative feedback that help guide future actors in pursuing their own independently conceived plans, thereby continuing the feedback process. Each person is a node within a network and is linked by feedback, with each node free to act on its own. The feedback they generate minimizes the knowledge anyone needs about the system as a whole in order to succeed within it.

[34] Elliott, "Stigmergic Collaboration."

[35] Mark Elliott, "Some General Off-the-Cuff Reflections on Stigmergy," *Stigmergic Collaboration*, May 21, 2006 <stigmergiccollaboration.blogspot.com>.

[36] Mark Elliott, Stigmergic Collaboration: A Theoretical Framework for Mass Collaboration. Doctoral Dissertation, Centre for Ideas, Victorian College of the Arts, University of Melbourne (October 2007), pp. 9–10

[37] M. Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos* (New York, London, Toronto, Sydney, Tokyo, Singapore: Simon & Schuster, 1992), pp. 169–170.

[38] *Ibid*., pp. 316–317.

> All spontaneous orders possess certain abstract features in common. Participants are equal in status and all are equally subject to whatever rules must be followed to participate within the order. All are free to apply these rules to any project of their choosing. Anything that can be pursued without violating a rule is permitted, including pursuing mutually contradictory goals. Finally, these rules facilitate cooperation among strangers based on certain broadly shared values that are simpler than the values actually motivating many people when they participate. Compared to human beings, spontaneous orders are "value-thin."[39]

In netwar, say Rand theorists John Arquilla and David Ronfeldt,

> many small units "already know what they must do", and are aware that "they must communicate with each other not in order to prepare for action, but only as a consequence of action, and, above all, through action."[40]

Far from submerging "individual authorial voice" in the "collective," as Jaron Lanier and Mark Helprin claim, stigmergy synthesizes the highest realizations of both individualism and collectivism, and represents each of them in its most completely actualized form, without qualifying or impairing either in any way. Michel Bauwens uses the term "cooperative individualism":

> this turn to the collective that the emergence of peer to peer represents does not in any way present a loss of individuality, even of individualism. Rather it 'transcends and includes' individualism and collectivism in a new unity, which I would like to call 'cooperative individualism'. The cooperativity is not necessarily intentional (i.e. the result of conscious altruism), but constitutive of our being, and the best applications of P2P, are based on this idea.[41]

Stigmergy is not "collectivist" in the traditional sense, as it was understood in the days when a common effort on any significant scale required a large organization to represent the collective, and the administrative coordination of individual efforts through a hierarchy. But it is the ultimate realization of collectivism, in that it removes the transaction cost of concerted action by many individuals.

It is the ultimate in individualism because all actions are the free actions of individuals, and the "collective" is simply the sum total of individual actions. Every individual is free to formulate any innovation she sees fit, without any need for permission from the collective, and everyone is free to adopt it or not. In this regard it attains the radical democratic ideal of *unanimous* consent of the governed, which is never completely possible under a representative or majoritarian system. Majoritarian democracy is a lesser evil, a way to approximate as closely as possible to the spirit of unanimous consent when an entire group of people must be bound by a single decision. Stigmergy removes the need for any individual to be bound by the group will and reduces the unit of governance to the individual, fully realizing the ideal of consent.

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[39] Gus DiZerega, "Outlining a New Paradigm," *Cosmos and Taxis* 1:1 (2013), p. 9.

[40] "Swarming and the Future of Conflict," quoted by David de Ugarte, *The Power of Networks: An Illustrated Manual for People, Collectives, and Companies Driven to Cyberactivism.* Translated by Asunción Álvarez (n.d.), p. 62 <deugarte.com>.

[41] Michel Bauwens, "Individuality, Relationality, and the Collective in the P2P era," *P2P Foundation Blog*, May 15, 2010 <blog.p2pfoundation.net>.

Another remarkable thing about stigmergic coordination is that free riders are not a problem; all actions are voluntarily undertaken out of self-interest, and their service to the individuals undertaking them and to the group is not lessened by the fact that others free ride without contributing.

> In the stigmergic paradigm, the common good (e.g. Wikipedia, or a network of trails and roads connecting common destinations) is gradually built up via the cooperation implicit in stigmergically coordinated actions. Free riders may profit from this common good without putting in any effort in return. However, the benefit derived from a stigmergic trace does not in general reduce the value of that trace. For example, an ant that follows a pheromone trace laid by others without adding pheromone of its own does not by that action make the pheromone trace less useful to the other ants. Similarly, a person who downloads a piece of open source software without contributing to the development of that software does not impose any burden on the software developers. Thus, in a situation of stigmergy, a free rider or "defector" does not weaken the cooperators, in contrast to situations like the Prisoners' dilemma or Tragedy of the Commons.[42]

In short, as Michel Bauwens describes it, "Peer production is based on the elimination of permission-asking and a shift to the self-selection of tasks… "[43]

A good example is Raymond's "Bazaar" model of open-source development, as illustrated in a hypothetical case by Benkler:

> Imagine that one person, or a small group of friends, wants a utility. It could be a text editor, photo-retouching software, or an operating system. The person or small group starts by developing a part of this project, up to a point where the whole utility—if it is simple enough—or some important part of it, is functional, though it might have much room for improvement. At this point, the person makes the program freely available to others, with its source code… When others begin to use it, they may find bugs, or related utilities that they want to add… The person who has found the bug… may or may not be the best person in the world to actually write the software fix. Nevertheless, he reports the bug… in an Internet forum of users of the software. That person, or someone else, then thinks that they have a way of tweaking the software to fix the bug or add the new utility. They then do so, just as the first person did, and release a new version of the software with the fix or the added utility. The result is a collaboration between three people—the first author, who wrote the initial software; the second person, who identified a problem or shortcoming; and the third person, who fixed it. This collaboration is not managed by anyone who organizes the three, but is instead the outcome of them all reading the same Internet-based forum and using the same software, which is released under an open, rather than proprietary, license. This enables some of its users to identify problems without asking anyone's permission and without engaging in any transactions.[44]

[42] Heylighen, "Stigmergy," pp. 29–30.

[43] Michel Bauwens, "Interview on Peer to Peer Politics with Cosma Orsi," *P2P Foundation Blog*, April 10, 2008 <blog.p2pfoundation.net>.

[44] Benkler, pp. 66–67.

Nevertheless, the creation of value itself is inherent in the network as an entity—a form of network effect that is more than the sum of the individual parts. Antonio Negri's and Michael Hardt's discussion of value production on the commons is relevant here:

> … biopolitical production is not constrained by the logic of scarcity. It has the unique characteristic that it does not destroy or diminish the raw materials from which it produces wealth. Biopolitical production puts bios to work without consuming it. Furthermore its product is not exclusive. When I share an idea or image with you, my capacity to think with it is not lessened; on the contrary, our exchange of ideas and images increases my capacities. And the production of affects, circuits of communication, and modes of cooperation are immediately social and shared.[45]

The synergy produced by the sharing of knowledge by the network is—in both senses of the word—a property of the network.

This has had revolutionary implications for the balance of power between networks and hierarchies, and almost unimaginably empowered individuals and small groups against large organizations.

In a hierarchy, all communications between members or between local nodes must pass through a limited number of central nodes. The only communications which are allowed to pass from one member or local node to another are those which meet the standards for distribution of those who control the central nodes. Only a few nodes within a hierarchy have the power to transmit; hence the use of the phrase "one-to-many" to describe its topology. The version of local news that appears in the local newspaper under the byline of a local journalist may be far superior in relevant detail and analysis, but it is the wire service version—even if far inferior in quality—which appears in local newspapers all around the world. It is only the communications approved by the Party Secretariat that are heard by all local cells of a party.[46]

But in a distributed network, every node has the power to transmit, and any two nodes can communicate directly with each other without passing through a central node or obtaining the approval of whoever controls that node. Instead of the individual members simply selecting who controls the central nodes, "[s]omeone makes a proposal and everyone who wishes to join in can do so. The range of the action in question will depend on the degree to which the proposal is accepted." Majoritarian democracy is a "scarcity system" in which decisionmaking power is rivalrous: "the collective must face an either/or choice, between one filter and another, between one representative and another." In a distributed network, on the other hand, decision-making power is non-rivalrous. Each individual's decision affects only herself, and does not impede the ability of others to do likewise. "Even if the majority not only disagreed with a proposal, but also acted against it, it wouldn't be able to prevent the proposal from being carried out."[47]

> In such a universe, every collective or hierarchical decision on what to publish or not can only be conceived as an artificial generation of scarcity, a decrease in diversity, and an impoverishment for all.[48]

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[45] Michael Hardt and Antonio Negri, *Commonwealth*, pp. 283–284.

[46] De Ugarte, The Power of Networks, p. 38.

[47] *Ibid*., pp. 39–40.

[48] De Ugarte, *Phyles: Economic Democracy in the Network Century* (n.d.), pp. 18–19 <deugarte.com>.

Hardt and Negri describe the form of organization they call the "multitude"—as opposed to the monolithic "people," the atomized "masses" and the homogeneneous "working class"—in terms that sound very much like stigmergy.

> The people has traditionally been a unitary conception… The multitude, in contrast, is many. The multitude is composed of innumerable internal differences that can never be reduced to a unity or a single identity—different cultures, races, ethnicities, genders, and sexual orientations; different forms of labor; different ways of living; different views of the world; and different desires. The multitude is a multiplicity of all these singular differences. The masses are also contrasted with the people because they too cannot be reduced to a unity or an identity. The masses certainly are composed of all types and sorts, but really one should not say that different social subjects make up the masses. The essence of the masses is indifference: all differences are submerged and drowned in the masses. All the colors of the population fade to gray… In the multitude, social differences remain different. The multitude is many-colored, like Joseph's magical coat. Thus the challenge posed by the concept of multitude is for a social multiplicity to manage to communicate and act in common while remaining internally different.
>
> Finally, we should also distinguish the multitude from the working class… The multitude… is an open, inclusive concept. It tries to capture the importance of the recent shifts in the global economy: on the one hand, the industrial working class no longer plays a hegemonic role in the global economy…; and on the other hand, production today has to be conceived not merely in economic terms but more generally as social production—not only the production of material goods but also the production of communications, relationships, and forms of life. The multitude is thus composed potentially of all the diverse figures of social production… [A] distributed network such as the Internet is a good initial image or model for the multitude because, first, the various nodes remain different but are all connected in the Web, and, second, the external boundaries of the network are open such that new nodes and new relationships can always be added.[49]

The multitude, unlike the people, in traditional political philosophy cannot rule as a sovereign power because it "is composed of a set of *singularities*… whose differences cannot be reduced to sameness." Yet "although it remains multiple, it is not fragmented, anarchical, or incoherent."[50]

Their description of the "common," or background against which the multitude cooperates, is quite similar to the stigmergic medium against which individuals coordinate their actions via markers.

> Insofar as the multitude is neither an identity (like the people) nor uniform (like the masses), the internal differences of the multitude must discover *the common* that allows them to communicate and act together. The common we share, in fact, is not

[49] Michael Hardt and Antonio Negri, *Multitude: War and Democracy in the Age of Empire* (New York: Penguin, 2004), xiv-xv.

[50] *Ibid*. p. 99.

> so much discovered as it is produced… Our communication, collaboration and cooperation are not only based on the common, but they in turn produce the common in an expanding spiral relationship. This production of the common tends today to be central to every form of social production, no matter how locally circumscribed, and it is, in fact, the primary characteristic of the new dominant forms of labor today. Labor itself, in other words, tends through the transformations of the economy to create and be embedded in cooperative and communicative networks. Anyone who works with information or knowledge… relies on the common knowledge passed down from others and in turn creates new common knowledge.[51]

Indeed, in their description of the swarming activity of the multitude, they appeal explicitly to the behavior of stigmergically organized termite colonies.[52]

Hardt and Negri also attribute an internal tendency toward democracy to the multitude, in terms much like David Graeber's "horizontalism." The modern history of resistance movements displays a shift from "centralized forms of revolutionary dictatorship and command" to "network organizations that displace authority in collaborative relationships" (this was written after the rise of the Zapatistas and the Seattle movement, but before the Arab Spring or the Occupy movement). Not only do resistance movements aim at the creation of a democratic society, but also tend "to create internally, within the organizational structure, democratic relationships."[53]

The advantages of stigmergic organization go beyond resilience. Jean Russell coined the term "thrivability" to describe systems that are more than merely resilient.

> Thrivability transcends survival modes, sustainability, and resilience. Thrivability embraces flow as the sources of life and joy and meaning, adds to the flow and rides the waves, instead of trying to nullify the effects. Each layer includes and also transcends the previous layer, expanding both interconnections as well as expanding system awareness as each layer hits limits and discovers that more forces are at work than can be explained within their purview.

She illustrates the distinction by contrasting descriptions of resilient and thrivable systems. Rather than simply withstanding or recovering quickly from difficulties, the thrivable organization is characterized by an "unfolding pattern of life giving rise to life"; it will "develop vigorously," "prosper" and "flourish." It is "antifragile": that is, it gets better, generates and transformed when disturbed.[54]

For a while I struggled a bit trying to picture examples of what her distinction between resilience and thrivability would mean in concrete terms. Then it hit me: stigmergic organizations are both resilient (because of distributed infrastructure and redundant pathways between nodes) *and* thrivable.

A stigmergic organization fits her description perfectly: "invites everyone to contribute their very best to making a world that not only works, it also produces joy, delight, and awe." The reason is that it's organized on a modular basis, and each discrete module of work is carried out

[51] *Ibid*. xv.
[52] *Ibid*. p. 91.
[53] *Ibid*. xvi.
[54] Jean Russell, "Resilience Ain't Enough," *Thrivable.net*, February 6, 2013 <thrivable.net>.

by someone who volunteered to do it because it's something they care about (often passionately) and they were empowered to do it without waiting for anyone else's permission. So each task in a stigmergic organization is carried out by those most interested in it. Anyone who sees an opportunity for improvement, or has a eureka moment, can immediately jump in and get their hands dirty, and doesn't have to work at it past the point where it ceases to be a joy for them.

To the extent that progress depends on the Shoulders of Giants Effect— people building on each other's contributions—a stigmergic organization that facilitates collaboration, and does so without enforcing any barriers (like patents and copyrights) to making use of others' ideas or creations, is the ideal embodiment of Russell's idea of thrivability as promoting "growth on growth.

Stigmergy is ideal for facilitating division of labor, with those best suited to a task selecting it for themselves. The Left—even the anarchist Left, who should know better—is plagued with the lionization of "activism" and guilt-tripping of anyone who lacks sufficient activist street cred. If your primary talent is writing or theory, according to this valuation, you're a second-class Leftist. If you're not "doing something"—which translates more or less into participating in demos—you're a poser. But when viewed in light of the stigmergy paradigm, this view is just plain stupid. It makes far more sense for each person to do what she is best at, and let others make use of her contributions in whatever way is relevant to their own talents.

Vinay Gupta expressed this principle in a couple of tweets:

> Noble Saint Hexayurt does the heavy lifting, every hexayurt build makes four more likely.[55]
>
> I cannot save people, there are too many. I can give ideas and maybe some examples, but only an idea is big enough to help everyone.[56]

Exactly. The primary bottleneck in today's world is not physical resources, but the transmission of knowledge. Why do something that I'm bad at, when the most cost-effective use of my time and talent is writing? Putting ideas together and propagating them *is* "doing something."

In sum, the transition to a society organized around stigmergic coordination through self-organized networks involves an exponential increase in agility, productivity and resilience. To quote Heylighen again, "[t]his world-wide stigmergic medium is presently developing into the equivalent of a global brain able to efficiently tackle the collective challenges of society."[57]

[55] Vinay Gupta (@leashless), 6:26PM, August 5, 2012 <twitter.com>.

[56] Gupta, 6:31PM, August 5, 2012 <twitter.com>.

[57] Heylighen, "Stigmergy" p. 31.

2. Networks vs. Hierarchies

I. The Systematic Stupidity of Hierarchies

The intrusion of power into human relationships creates irrationality and systematic stupidity. As Robert Anton Wilson argued in "Thirteen Choruses for the Divine Marquis,"

> A civilization based on authority-and-submission is a civilization without the means of self-correction. *Effective* communication flows only one way: from master-group to servile-group. Any cyberneticist knows that such a one-way communication channel lacks feedback and cannot behave "intelligently."
>
> The epitome of authority-and-submission is the Army, and the control-and-communication network of the Army has every defect a cyberneticist's nightmare could conjure. Its typical patterns of behavior are immortalized in folklore as SNAFU (situation normal—all fucked-up)… In less extreme, but equally nosologic, form these are the typical conditions of any authoritarian group, be it a corporation, a nation, a family, or a whole civilization.[1]

That same theme featured prominently in *The Illuminatus! Trilogy*, which Wilson coauthored with Robert Shea. "… [I]n a rigid hierarchy, nobody questions orders that seem to come from above, and those at the very top are so isolated from the actual work situation that they never see what is going on below."[2]

> A man with a gun is told only that which people assume will not provoke him to pull the trigger. Since all authority and government are based on force, the master class, with its burden of omniscience, faces the servile class, with its burden of nescience, precisely as a highwayman faces his victim. Communication is possible only between equals. The master class never abstracts enough information from the servile class to know what is actually going on in the world where the actual productivity of society occurs… The result can only be progressive deterioration among the rulers.[3]

This inability of those in authority to abstract sufficient information from below, and this perception of superiors by subordinates as "a highwayman," result in the hoarding of information by those below and their use of it as a source of rents. The power differential, by creating a zero-sum relationship, renders the pyramid opaque to those at its top.

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[1] R. A. Wilson, "Thirteen Choruses for the Divine Marquis," from *Coincidance—A Head Test* (1988) <www.deepleafproductions.com>.

[2] Robert Shea and Robert Anton Wilson, *The Illuminatus! Trilogy* (New York: Dell Publishing, 1975), p. 388.

[3] *Ibid*., p. 498.

Radical organization theorist Kenneth Boulding, in similar vein, noted "the way in which organizational structure affects the flow of information,"

> hence affects the information input into the decision-maker, hence affects his image of the future and his decisions… There is a great deal of evidence that almost all organizational structures tend to produce false images in the decision-maker, and that the larger and more authoritarian the organization, the better the chance that its top decision-makers will be operating in purely imaginary worlds.[4]

In his discussion of *metis* (i.e. distributed, situational, job-related knowledge), James C. Scott draws a connection between it and mutuality—"as opposed to imperative, hierarchical coordination"—and acknowledges his debt for the insight to anarchist thinkers like Kropotkin and Proudhon.[5] *Metis* requires two-way communication between equals, where those in contact with the situation—the people actually doing the work—are in a position of equality.

Interestingly, Wilson had previously noted this connection between mutuality and accurate information in "Thirteen Choruses." He even included his own allusion to Proudhon:

> [Proudhon's] system of voluntary association (anarchy) is based on the simple communication principles that an authoritarian system means one-way communication, or stupidity, and a libertarian system means two-way communication, or rationality.
>
> The essence of authority, as he saw, was Law—that is… , effective communication running one way only. The essence of a libertarian system, as he also saw, was Contract—that is, mutual agreement—that is, effective communication running both ways.

To call a hierarchical organization systematically stupid is just to say that it's incapable of making effective use of the knowledge of its members; it is less than the sum of its parts. Clay Shirky quotes John Seely Brown and Paul Duguid:

> "What if HP knew what HP knows?" They had observed that the sum of the individual minds at HP had much more information than the company had access to, even though it was allowed to direct the efforts of those employees.[6]

Because a hierarchical institution is unable to aggregate the intelligence of its members and bring it to bear effectively on the policy-making process, policies have unintended consequences, and different policies operate at cross-purposes with each other in unanticipated ways. And to top it all off, the transaction costs of getting information to management about the real-world consequences of its policies are prohibitive for the same reason that the transaction costs of aggregating the information required for effective policy-making in the first place were prohibitive.

But no worries. Because senior management don't live under the effects of their policy, and subordinates are afraid to tell them what a clusterfuck they created, the CEO will happily inform

[4] Kenneth Boulding, "The Economics of Knowledge and the Knowledge of Economics," *American Economic Review* 56:1/2 (March 1966), p. 8.

[5] James Scott, *Seeing Like a State* (New Haven: Yale University Press, 1999), pp. 6–7.

[6] Clay Shirky, *Here Comes Everybody: The Power of Organizing Without Organizations* (Penguin Books, 2008), p. 100.

the CEOs at other organizations of how wonderfully his new "best practice" worked out. And because these "competing" organizations actually exist in an oligopoly market of cost-plus and administered pricing, and share the same pathological institutional cultures, they suffer no real competitive penalty for their bureaucratic irrationality.

A hierarchy is a device for telling naked emperors how great their clothes look. "Thoreau," a professor of physics who for obvious reasons prefers to blog anonymously, describes it in the context of his interactions with an administrator:

> Let's just say that there's something we do that is … sub-optimal. Everyone knows it is sub-optimal…
>
> I observed that what we do is sub-optimal, and we shouldn't expand this, but she was basically pointing out that we routinely generate reports saying that it works. Yes, we do. Those reports involve pigs and lipstick. We all know this. However, she lives in a world that is based on those reports…[7]

When you constantly operate on the assumption that you're going to internalize the effects of your own actions, you have an incentive to anticipate things that could go wrong. And when you make a decision, you continually revise it in response to subsequent experience. Normally functioning human beings—that is, who are in contact with our environments and not insulated from them by hierarchies—are always correcting our own courses of action.

Authority short-circuits this process: it shifts the negative consequences of decisions downward and the benefits upward, so that decision-makers operate based on a distorted cost-benefit calculus; and it blocks negative feedback so that the locus of organizational authority is subject to the functional equivalent of a psychotic break with reality.

When policy *isn't* the result of systematic stupidity, it's an elaborate exercise in plausible deniability, so management can say "But they *knew* about our written policy," when the inevitable shortcuts to compensate for deliberate understaffing and irrational interference result in a public relations disaster.

The lack of feedback means most organizations are "successful" at achieving goals that are largely artificial—goals defined primarily by the interests of their governing hierarchies, rather than by the ostensible customers or those engaged in directly serving customer needs. On the other hand, organizational structures like networks, which are based on two-way feedback between equals, result in a high rate of "failure." As Clay Shirky puts it, open source is a threat because it outfails proprietary systems. It can experiment and fail at less cost. Because failure is more costly to a hierarchy, hierarchies are biased "in favor of predictable but substandard outcomes."[8]

Failure also reflects the empowerment of workers and customers; most products in the corporate economy are only considered "good enough" because customers are powerless.

Chrystia Freeland argues the GOP establishment and its backers were so utterly convinced Obama would lose in 2012, and caught so badly off-guard by the actual outcome of the election, because of the very same kinds of information filtering and group think that prevail in the corporations they represented.

[7] Thoreau, "Going up against the pointy-haired bosses," *Unqualified Offerings*, February 6, 2013 <highclearing.com>.

[8] *Ibid*., p. 245.

> By his own definition, Romney's single strongest qualification to become president was analytically based, managerial excellence. And if the election campaign were the test of that, and even if you were ideologically his fan, you should think it right that he lost. Now, how could it happen? My first thought was it was also the case that all the smartest guys in the room managed to lose a lot of money in 2008 and managed to convince themselves of a set of very mistaken beliefs about where the markets where going to go. It was a lot of the same people on the wrong side of both bets…
>
> … [W]hen you're a rich and powerful guy, it can make it hard to see reality, especially when you're paying your campaign staff great salaries, as Romney was.[9]

To repeat, no matter how intelligent the people staffing a large institution are as individuals, hierarchy makes their intelligence unusable. Given that the institution does not exist as a vehicle for the goals of its members, there's no intrinsic connection between their personal motivation and their roles in the organization, and the information and agency problems of a hierarchy prevent consequences from being fully internalized by actors, individuals simply cannot be trusted with the discretion to act on their own intelligence or common sense. That's the rationale for standardized work-rules, job descriptions, and all the rest of the Weberian model of bureaucratic rationality: because someone, somewhere might use her initiative in ways that produce results that are detrimental to the interests of the organization, you need a set of rules in place that prevent anyone from doing anything at all. Unlike networks, which treat the human brain as an asset, hierarchical rules systems treat it as a risk to be mitigated.

Job descriptions and union work rules are the other side of the coin to Weberian/Taylorist work rules. Both result from hierarchy. Power, by definition, creates zero-sum relationships. Superiors attempt to externalize effort on subordinates and skim off the benefits of increased productivity for themselves; subordinates, as a result, attempt to minimize the expenditure of effort and do the minimum necessary to avoid getting fired. Both superiors and subordinates filter or hoard information of benefit to the other party, and attempt to maximize the rents from keeping each other ignorant. In this zero-sum relation, where each side can only benefit at the expense of the other, each party seeks mechanisms for limiting abuses by the other.

Paul Goodman illustrated the need to impose constraints on freedom of action, and impede individual initiative in directly adopting the most common-sense and lowest-cost solutions to immediate problems, with the example of replacing a door catch in the New York public school system:

> … To remove a door catch that hampers the use of a lavatory requires a long appeal through headquarters, because it is "city property."…
>
> … An old-fashioned type of hardware is specified for all new buildings, that is kept in production only for the New York school system.[10]
>
> When the social means are tied up in such complicated organizations, it becomes extraordinarily difficult and sometimes impossible to do a simple thing directly, even

[9] Ezra Klein, "'Romney is Wall Street's worst bet since the bet on subprime,'" *Washington Post Wonkblog*, November 28, 2013 <www.washingtonpost.com>.

[10] Paul Goodman, *People or Personnel*, in *People or Personnel and Like a Conquered Province* (New York: Vintage Books, 1964, 1966), p. 52.

> though the doing is common sense and would meet with universal approval, as when neither the child, nor the parent, nor the janitor, nor the principal of the school can remove the offending door catch.[11]

A corporate hierarchy interferes with the judgment of what Friedrich Hayek called "people-on-the-spot," and with the collection of dispersed knowledge of circumstances, in exactly the same way a state does.

Most production jobs involve a fair amount of distributed, job-specific knowledge, and depend on the initiative of workers to improvise, to apply skills in new ways, in the face of events which are either totally unpredictable or cannot be fully anticipated. Rigid hierarchies and rigid work rules only work in a predictable environment. When the environment is unpredictable, the key to success lies with empowerment and autonomy for those in direct contact with the situation.

Hierarchical organizations are—to borrow a wonderful phrase from Martha Feldman and James March—*systematically* stupid.[12] For all the same Hayekian reasons that make a planned economy unsustainable, *no* individual is "smart" enough to manage a large, hierarchical organization. *Nobody*—not Einstein, not John Galt—possesses the qualities to make a bureaucratic hierarchy function rationally. Nobody's that smart, any more than anybody's smart enough to run Gosplan efficiently—that's the whole point. As Matt Yglesias put it,

> I think it's noteworthy that the business class, as a set, has a curious and somewhat incoherent view of capitalism and why it's a good thing. Indeed, it's in most respects a backwards view that strongly contrasts with the economic or political science take on why markets work.
>
> The basic business outlook is very focused on the key role of the *executive*. Good, profitable, growing firms are run by brilliant executives. And the ability of the firm to grow and be profitable is evidence of its executives' brilliance. This is part of the reason that CEO salaries need to keep escalating—recruiting the best is integral to success. The leaders of large firms become revered figures… Their success stems from overall brilliance…
>
> The thing about this is that if this were generally true—if the CEOs of the Fortune 500 were brilliant economic seers—then it would really make a lot of sense to implement socialism. Real socialism. Not progressive taxation to finance a mildly redistributive welfare state. But "let's let Vikram Pandit and Jeff Immelt centrally plan the economy—after all, they're really brilliant!"
>
> But in the real world, the point of markets isn't that executives are clever and bureaucrats are dimwitted. The point is that *nobody* is all that brilliant.[13]

No matter how intelligent managers are *as individuals*, a bureaucratic hierarchy insulates those at the top from the reality of what's going on below, and makes their intelligence less *usable*. Chris Dillow describes it this way:

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[11] *Ibid*. p. 88.

[12] Martha S. Feldman and James G. March, "Information in Organizations as Signal and Symbol," *Administrative Science Quarterly* 26 (April 1981); it should be noted, in fairness, that Feldman and March were attempting—unsuccessfully in my opinion—to defend corporations against the charge of systematic stupidity.

[13] Matthew Yglesias, "Two Views of Capitalism," *Yglesias*, November 22, 2008 <yglesias.thinkprogress.org>.

> But why don't firms improve with practice in the way that individuals' musical or sporting performance improves? Here are four possible differences:
>
> 1. Within firms, there's no mechanism for translating individuals' learning, or incremental knowledge, into corporate knowledge. As Hayek said, hierarchies are terrible at using fragmentary, tacit, dispersed knowledge.
> 2. Job turnover means that job-specific human capital gets lost.
> 3. Bosses are selected for overconfidence. But overconfidence militates against learning.
> 4. In companies, the feedback that's necessary for improvement gets warped by adverse incentives or ego involvement. If I play a phrase or chord badly, my ears tell me to practice it more. But if a company gets some adverse feedback— falling sales, say— no-one has an incentive or desire to say "I screwed up: I'd better improve." And formal efforts to generate feedback, such as performance reviews, often backfire.
>
> What I'm saying is what every methodological individualist knows: companies are not individuals writ large. The differences between them can mitigate against learning by doing.[14]

As an institution becomes larger and experiences increased overhead and bureaucratic ossification, it simultaneously becomes more and more vulnerable to fluctuating conditions in its surrounding environment, and less able to react to them. To survive, therefore, the large institution must control its surrounding environment.

The only real solution to complexity and unpredictability, as security analyst Bruce Schneier argues, is to give discretion to those in direct contact with the situation.

> Good security has people in charge. People are resilient. People can improvise. People can be creative. People can develop on-the-spot solutions… People are the strongest point in a security process. When a security system succeeds in the face of a new or coordinated or devastating attack, it's usually due to the efforts of people.[15]

The problem with authority relations in a hierarchy is that, given the conflict of interest created by the presence of power, those in authority cannot *afford* to allow discretion to those in direct contact with the situation. Systematic stupidity results, of necessity, from a situation in which a bureaucratic hierarchy must develop arbitrary metrics for assessing the skills or work quality of a labor force whose actual work they know nothing about, and whose material interests militate against remedying management's ignorance.

Most of the constantly rising burden of paperwork exists to give an illusion of transparency and control to a bureaucracy that is out of touch with the actual production process. Every new

[14] Chris Dillow, "Organizational Stupidity," *Stumbling and Mumbling*, September 23, 2011 <stumblingandmumbling.typepad.com>.

[15] Bruce Schneier, *Beyond Fear: Thinking Sensibly About Security in an Uncertain World* (New York: Copernicus Books, 2003), p. 133.

layer of paperwork is added to address the perceived problem that stuff still isn't getting done the way management wants, despite the proliferation of paperwork saying everything has being done exactly according to orders. In a hierarchy, managers are forced to regulate a process which is necessarily opaque to them because they are not directly engaged in it. They're forced to carry out the impossible task of developing accurate metrics to evaluate the behavior of subordinates, based on the self-reporting of people with whom they have a fundamental conflict of interest. The paperwork burden that management imposes on workers reflects an attempt to render legible a set of social relationships that by its nature must be opaque and closed to them, because they are outside of it.

Each new form is intended to remedy the heretofore imperfect self-reporting of subordinates. The need for new paperwork is predicated on the assumption that compliance must be verified because those being monitored have a fundamental conflict of interest with those making the policy, and hence cannot be trusted; but at the same time, the paperwork itself relies on their self-reporting as the main source of information. Every time new evidence is presented that this or that task isn't being performed to management's satisfaction, or this or that policy isn't being followed, despite the existing reams of paperwork, management's response is to design yet another—and equally useless—form.

Weberian work rules result of necessity when performance and quality metrics are not tied to direct feedback from the work process itself. They're a metric *of* work *for* someone who is neither a creator/provider not an end user. And they are necessary—again—because those at the top cannot afford to allow those at the bottom the discretion to use their own common sense. A bureaucracy can't afford to allow its subordinates such discretion, because someone with the discretion to do things more efficiently will also have the discretion to do something bad. And because the subordinate has a fundamental conflict of interest with the superior, and does not internalize the benefits of applying her intelligence, she can't be trusted to use her intelligence for the benefit of the organization. In such a zero-sum relationship, any discretion can be abused.

The problem is, discretion cannot be entirely removed from any organizational process. James Scott writes that it's impossible, by the nature of things, for everything entailed in the production process to be distilled, formalized or codified into a form that's legible to management.

> … [T]he formal order encoded in social-engineering designs inevitably leaves out elements that are essential to their actual functioning. If the [East German] factory were forced to operate only within the confines of the roles and functions specified in the simplified design, it would quickly grind to a halt. Collectivized command economies virtually everywhere have limped along thanks to the often desperate improvisation of an informal economy wholly outside its schemata.
>
> Stated somewhat differently, all socially engineered systems of formal order are in fact subsystems of a larger system on which they are ultimately dependent, not to say parasitic. The subsystem relies on a variety of processes—frequently informal or antecedent—which alone it cannot create or maintain. The more schematic, thin, and simplified the formal order, the less resilient and the more vulnerable it is to disturbances outside its narrow parameters…
>
> It is, I think, a characteristic of large, formal systems of coordination that they are accompanied by what appear to be anomalies but on closer inspection turn out to be

> integral to that formal order. Much of this might be called "metis to the rescue… " A formal command economy… is contingent on petty trade, bartering, and deals that are typically illegal… In each case, the nonconforming practice is an indispensable condition for formal order.[16]
>
> … In each case, the necessarily thin, schematic model of social organization and production animating the planning was inadequate as a set of instructions for creating a successful social order. By themselves, the simplified rules can never generate a functioning community, city, or economy. Formal order, to be more explicit, is always and to some considerable degree parasitic on informal processes, which the formal scheme does not recognize, without which it could not exist, and which it alone cannot create or maintain.[17]

And as I keep trying to hammer home, just the reverse is true of networks and stigmergic organization: their beauty is that they render the intelligence of all their individual members *more* usable. While one-way communication creates opacity from above, two-way communication creates horizontal legibility. To quote Michel Bauwens:

> The capacity to cooperate is verified in the process of cooperation itself. Thus, projects are open to all comers provided they have the necessary skills to contribute to a project. These skills are verified, and communally validated, in the process of production itself. This is apparent in open publishing projects such as citizen journalism: anyone can post and anyone can verify the veracity of the articles. Reputation systems are used for communal validation. The filtering is a posteriori, not a priori. Anti-credentialism is therefore to be contrasted to traditional peer review, where credentials are an essential prerequisite to participate.
>
> P2P projects are characterized by holoptism. Holoptism is the implied capacity and design of peer to [peer] processes that allows participants free access to all the information about the other participants; not in terms of privacy, but in terms of their existence and contributions (i.e. horizontal information) and access to the aims, metrics and documentation of the project as a whole (i.e. the vertical dimension). This can be contrasted to the panoptism which is characteristic of hierarchical projects: processes are designed to reserve 'total' knowledge for an elite, while participants only have access on a 'need to know' basis. However, with P2P projects, communication is not top-down and based on strictly defined reporting rules, but feedback is systemic, integrated in the protocol of the cooperative system.[18]

In a prison—governed by panopticism—the warden can see all the prisoners, but the prisoners can't see each other. The reason is so the prisoners can't coordinate their actions independently of the warden. Holopticism is the exact opposite: the members of a group are horizontally legible to one another, and can coordinate their actions. And "everyone has a sense of the emerging whole, and can adjust their actions for the greatest fit."[19]

[16] James Scott, *Seeing Like a State*, pp. 351–352.

[17] *Ibid*., p. 310.

[18] Michel Bauwens, "The Political Economy of Peer Production," *Ctheory.net*, December 1, 2005 <www.ctheory.net>.

[19] Alan Rosenblith, "Holopticism" (accessed January 22, 2012) <www.slideshare.net>.

The unspoken assumption is that a hierarchy exists for the purposes of the management, and a holoptic association exists for the purposes of its members. The people at the top of a hierarchical pyramid can't trust the people doing the job because their interests are diametrically opposed. It's safe to trust one another in a horizontal organization because a common interest in the task can be inferred from participation.

II. Hierarchies vs. Networks

In a distributed network, it's impossible to prevent communication between nodes by controlling a central node. There are too many alternative nodes through which communication can be routed if any particular node or nodes are closed off. As John Gilmore famously quipped, "the Internet treats censorship as damage and routes around it."[20]

> The power of distributed networks lies in the fact that in them filters disappear: eliminating or filtering a node or node cluster will not delay access to information. By contrast with the decentralised information system which arose with the invention of the telegraph, in distributed networks it is impossible to "burn bridges" and restrict the information that reaches the final nodes by controlling a few transmitters.[21]

As Ori Brafman and Rod Backstrom describe it, "*when attacked, a decentralized organization tends to become even more open and decentralized.*"[22] They use the example of the file-sharing movement. After Napster was shut down, the movement responded by creating a series of successors—each of which was even more decentralized and presented even less in the way of vulnerable nodes than its predecessor.[23]

That's the subject of Francesca Musiani's article on the history of p2p filesharing architecture, which she argues has been shaped by the offensive-defensive arms race between the forces of state surveillance and those of circumvention.[24] The first generation of file-sharing services, typified by Napster, were centralized, one-to-many systems. Subsequent services became increasingly decentralized— although their weak point remained imperfect anonymity. The third stage, Musiani argues, is file-sharing under cover of darknets, with membership by invitation only on a "friend-of-a-friend" basis. Although such organization through conventional, proprietary social networking services like Facebook is still vulnerable to the vagaries of their privacy policy, open-source social networking services like Diaspora are much more promising as avenues for darknet file-sharing.[25]

"The Pirate Bay," Rick Falkvinge writes, "has been a trailblazer in *resilience*. After all, a number of bought-and-paid-for or just plain misguided legislatures and courts have tried to eradicate the site, and yet, it still stands untouched."[26] One source of its resilience—as is the case with

[20] Philip Elmer-DeWitt, "First Nation in Cyberspace," *Time*, December 6, 1993 <www.toad.com>.

[21] Shirky, *Here Comes Everybody*, p. 43.

[22] Ori Brafman and Rod A. Beckstrom, *The Starfish and the Spider: The Unstoppable Power of Leaderless Organizations* (Portfolio, 2006), p. 21.

[23] *Ibid*., pp. 22–25.

[24] Francesca Musiani, "Privacy as Invisibility: Pervasive Surveillance and the Privatisation of Peer-to-Peer Systems," *tripleC* 9:2 (2011), p. 127.

[25] *Ibid*., pp. 132–138.

[26] Rick Falkvinge, "The Pirate Bay is a Trailblazer in Technical Resilience," *Falkvinge on Infopolicy*, March 23, 2013 <falkvinge.net>.

Wikileaks (see below)—is its lack of dependence on servers that are vulnerable to the laws of any particular country. Like Wikileaks, The Pirate Bay has access to a network of servers in a number of countries; and it responds to shutdown attempts by nimbly switching its Web-hosting to servers in other countries (most recently the servers of the Norwegian and Catalan Pirate Parties as of this writing).[27]

The ultimate step so far for file-sharing operations has been to bypass sitehosting as a bottleneck altogether and move into the cloud. The Pirate Bay released its software code so that it could be replicated by anyone who wanted to host a Pirate Bay clone.

> Earlier this year [2012], after months of legal wrangling, authorities in a number of countries won an injunction against the Pirate Bay, probably the largest and most famous BitTorrent piracy site on the Web. The order blocked people from entering the site.
>
> In retaliation, the Pirate Bay wrapped up the code that runs its entire Web site, and offered it as a free downloadable file for anyone to copy and install on their own servers. People began setting up hundreds of new versions of the site, and the piracy continues unabated.
>
> Thus, whacking one big mole created hundreds of smaller ones.[28]

And Tribler moves file-sharing in a literal peer-to-peer direction.

> The new software called "Tribler" is the new weapon in the battle for Internet liberty and does not need a website to track users sharing torrent files.
>
> According to The Raw Story, it is a "peer-to-peer network protocol that enables computers to share files with thousands of others."
>
> For many this could be the solution movie…
>
> While lawmakers are dreaming of a censored web, many believe Tribler will be a true nightmare for them.
>
> According to the technology blog Torrent Freak, the attempt to disconnect users from the Internet for "illegal" purposes will be foiled by the software that has been in the works for the past five years and will make it nearly "impossible" to stop file sharing.
>
> "The only way to take it down is to take the Internet down," stated Doctor Pouwelse of Delft University of Technology to the Daily Mail.
>
> Tribler will be entirely decentralized, leaving the control in the hands of the users.
>
> "Individuals can rename files, flag phony downloads or viruses, create 'channels' of verified downloads, and act as nodes that distribute lists of peers across the network," *The Raw Story* reported.[29]

[27] Falkvinge, "The Hydra Bay: The Pirate Bay Moves to Norwegian, Catalan Pirate Parties," *Falkvinge on Infopolicy*, February 26, 2013 <falkvinge.net>.

[28] Michel Bauwens, "The escalation of the piracy wars when sharing culture moves to the cloud," *P2P Foundation Blog*, August 23, 2012 <blog.p2pfoundation.net>.

[29] "Internet pirates winning the war on SOPA with 'Tribler,'" *rt.com*, February 9, 2012 <rt.com>.

More recently, the clumsy attempts of the U.S. government and its allies to suppress Wikileaks through control of strategic nodes (domain name registries, Amazon, PayPal, etc.) have made the same principle abundantly clear. Wikileaks' enemies have strategized against it within the paradigm of a Weberian bureaucratic institution functioning inside a Westphalian nation-state. Will Wilkinson mocked the sheer idiocy of people like Joe Lieberman—and all the clucking chickenhawks in the neocon blogosphere calling for Chelsea Manning or Julian Assange to be waterboarded—in his blog at *The Economist*:

> If Mr Assange is murdered tomorrow, if WikiLeaks' servers are cut off for a few hours, or a few days, or forever, nothing fundamental is really changed. With or without WikiLeaks, the technology exists to allow whistleblowers to leak data and documents while maintaining anonymity. With or without WikiLeaks, the personnel, technical know-how, and ideological will exists to enable anonymous leaking and to make this information available to the public…
>
> Yet the debate over WikiLeaks has proceeded as if the matter might conclude with the eradication of these kinds of data dumps—as if this is a temporary glitch in the system that can be fixed… But I don't think the matter can end this way. Just as technology has made it easier for governments and corporations to snoop ever more invasively into the private lives of individuals, it has also made it easier for individuals, working alone or together, to root through and make off with the secret files of governments and corporations. WikiLeaks is simply an early manifestation of what I predict will be a more-or-less permanent feature of contemporary life, and a more-or-less permanent constraint on strategies of secret-keeping.
>
> Consider what young Bradley Manning is alleged to have accomplished with a USB key on a military network. It was impossible 30 years ago to just waltz out of an office building with hundreds of thousands of sensitive files. The mountain of boxes would have weighed tons. Today, there are millions upon millions of government and corporate employees capable of downloading massive amounts of data onto tiny devices. The only way WikiLeaks-like exposés will stop is if those with the permissions necessary to access and copy sensitive data refuse to do so. But as long as some of those people retain a sense of right and wrong—even if it is only a tiny minority—these leaks and these scandals will continue.[30]

Mike Masnick, in similar language, expressed his amused contempt for calls from people like Christian Whiton and Marc Thiessen to kill Assange or declare war on Wikileaks and shut it down:

> … As was pointed out at the time, this is a statement totally clueless about the nature of Wikileaks, and how distributed it is. If you shut down one node, five more would likely pop up overnight, and they'd be harder to track and harder to shut down. Whiton and Thiessen are reacting to Wikileaks as if it were a threat from an individual or a government. In other words, they're treating it like a threat from decades ago, rather than an open effort to distribute leaked information…

[30] Will Wilkinson, "Missing the Point of Wikileaks," *Democracy in America* (*The Economist*), December 1, 2010 <www.economist.com>.

> … What the internet allows is for groups to form and do stuff in a totally anonymous and distributed manner, and there really isn't any way to prevent that—whether you agree with the activity or not.[31]

As *Reason*'s Jesse Walker put it,

> I remember when the record companies were filled with men and women who thought the key to stopping online filesharing was to shut down a company called Napster. I remember when a teenaged programmer named Shawn Fanning was attracting the sort of press that Julian Assange is getting today. In 2010, the average 14-yearold probably doesn't know who Fanning is. He might not even recognize the name Napster. But he knows how to download music for free.[32]

The resilience of Wikileaks against attempts at suppression by the corporate state, in particular, is remarkable. The networked movement to blog and tweet Wikileaks' dotted-line IP addresses around the Web, and to mirror the site by the thousands, should be a source of pride to all friends of information freedom. It reminds me of the DeCSS uprising, in which the "illegal" DeCSS hack for movie DRM was distributed at thousands of blogs and websites worldwide, and sympathizers even showed up for Eric Corley's trial in T-shirts bearing the DeCSS code. And even if the site were entirely shut down it would be feasible to move beyond the current website-based model and simply distribute content worldwide by torrent download.

Similarly, the Egyptian government's so-called shutdown of the Internet during the early 2011 uprising was circumvented by (inter alia) using dialup connections and virtual private networks. As with Wikileaks, social media sites were reportedly still available at their IP addresses. And use of the Tor anonymizer tripled.[33]

What's more, another lesson of the shutdown is just how catastrophic the economic consequences are.

> A central unknown at this moment is what the economic harm to the country will be. Without internet and voice networks, Egyptians are losing transactions and deals, their stocks and commodities cannot be traded, their goods are halted on frozen transportation networks, and their bank deposits are beyond reach.[34]

In fact the measure seems so drastic, and the effects so severe, that governments are likely to treat them as a last resort and put them off until it's too late—as was the case in Egypt. Governments are as prone to the Boiled Frog Syndrome as we are.

Attempts to suppress efforts like Wikileaks by interdicting their access to centralized intermediaries like domain name services, web hosts, PayPal, etc., simply serve as a catalyst to create new, decentralized versions of those intermediaries which are less vulnerable to interdiction.

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[31] Mike Masnick, "The Revolution Will Be Distributed: Wikileaks, Anonymous, and How Little the Old Guard Realizes What's Going On," *Techdirt*, October 26, 2010 <www.techdirt.com>.

[32] Jesse Walker, "Our Leaky World," *Reason.com*, December 15, 2010 <reason.com>.

[33] Klint Finley, "Egypt: Tor use Skyrocketing as Users Route Around Internet Blocks," *ReadWrite*, January 28, 2011 <www.readwriteweb.com>. See also "20 Ways to Circumvent the Egyptian Government's Internet Block," *Pastebin*, January 29, 2011 <pastebin.com>.

[34] *Ibid*.

There's already been talk about setting up an open-source domain name service by one of the founders of The Pirate Bay. Even before Wikileaks emerged as a major story, services like PayPal had come under criticism from the open source community for their lack of accountability to the user community, and sparked assorted attempts to create an open-source alternative. Attacks on Wikileaks have just increased the momentum behind such movements to reduce the vulnerability of centralized intermediaries.[35] The users' power of voice over PayPal is virtually nil, but their power of exit is potentially enormous. Again, the Net is in the process of treating censorship as damage and routing around it.

Projects to harden the Net against shutdown. Even before the Egyptian government shut down the Internet during the "Twitter Revolution" in early 2011, there was a wide range of projects aimed at increasing the Internet's resilience in the face of state attempts at shutdown or control. The Egyptian government's shutdown, combined with talk in the U.S. of an "Internet kill switch," added a sense of urgency to these projects.

It's worth bearing in mind, of course, that the resistance movement has been quite creative in circumventing the so-called Net "shutdown" while it was actually going on.

> Even shutting down the Internet, which the security services in Syria, Libya, and Egypt all tried at various stages of those uprisings, cannot prevent determined cyberdissidents from organizing. In Libya, rebels used satellite telephones to upload videos of violence by Qaddafi's government against protesters. In Egypt, software developers managed to cobble together an alternative Internet—a peer-to-peer network that bypassed the state-controlled one—when the regime began blocking access. And from China to Belarus to Cuba, dissidents have used updated versions of time-tested samizdat methods developed to smuggle prodemocracy writings out from behind the Iron Curtain, downloading videos, images, and text onto tiny USB flash drives and mailing them or smuggling them abroad. Syrians smuggle USB drives across the northern border to Turkey and, thanks to robust connections with relatively free Lebanon, kept a steady flow of images and information streaming into cyberspace even through the darkest moments of the Assad regime's crackdown. With the U.S. government and other public and private entities funding research into ways of keeping such dissidents just ahead of the censors, the information "arms race" between regimes and their subjects so far appears to give a lopsided advantage to the people.[36]

Telecomix, a group of European online freedom activists, it a good example. It offered technical support to Egyptian protestors:

> Egyptians with dial-up modems get no Internet connection when they call into their local ISP, but calling an international number to reach a modem in another country gives them a connection to the outside world…
>
> The few Egyptians able to access the Internet through Noor, the one functioning ISP, are taking steps to ensure their online activities are not being logged. Shortly before Internet access was cut off, the Tor Project said it saw a big spike in Egyptian visitors

[35] Mike Masnick, "How Wikileaks and Operation Payback Have Exposed Infrastructure That Should Be Decentralized But Isn't," *Techdirt*, December 16, 2010 <www.techdirt.com>.

[36] Michael Moran, "From Shortwaves to Flash Mobs," *Salon*, April 10, 2012 <www.slate.com>.

> looking to download its Web browsing software, which is designed to let people surf the Web anonymously.[37]
>
> And now many Egyptians are finding ways around the cuts and getting back on the Internet, allowing them to more easily communicate with the outside world and spread information from the inside. One popular method is to use the local phone lines, which remain intact. The trick is to bypass local Egyptian ISPs (Internet Service Providers) by connecting to remote ones hosted in outside countries—many are hosted here in the United States; Los Angeles seems, for whatever reason, to be a popular site.[38]

Telecomix has also provided a package for bypassing state Internet surveillance and censorship in Syria, which it put together on a number of mirrored websites, and then circulated links to them by email spam:

> It took about one month to design, write, discuss, erase, rewrite, correct and finally package the software. Many people gave their advice either on the design, on the technical content or on how the message would be welcomed on the Syrian side. One of our Syrian contacts put his heart and guts to provide us a perfectly polished Arabic translation. At this point, the 60MB Telecomix Safety Pack website was ready. It contained security Firefox plugins, a Tor bundle, secure instant messaging software, a link to the Telecomix chat and more. It also emphasized basic guidelines such as avoid revealing personal information over the Internet…
>
> 19 mirrors, all using different domain names, managed by 2 load balancers. Not that huge, but hopefully robust enough to both reply to all requests and circumvent a potential blocking against some domain names. Webservers specially installed and configured for this aggressive broadcast. The crossing point between high technical skills, deep emotional involvment and decentralized technological power.
>
> I «pushed the button» on the 5th of September at 1:53am CEST. Then came the anxious monitoring of our respective servers.
>
> Thousands of requests were scrolling on the screen, several megabytes per second were passing through the main mirrors. All servers kept responding bravely to all these requests during the operation time.
>
> Fucking hell yeah. It was working. Cheers, champaign![39]

Another project, originally designed for maintaining connectivity in largescale disasters like Katrina or the Haitian earthquake but also ideal in a case like Mubarak's Internet shutdown, was Tethr: an easily portable, concealable, solarpowered device with a satellite Internet modem and Wifi connectivity.[40]

[37] Nancy Gohring and Robert McMillan, "Without Internet, Egyptians find new ways to get online," *Computerworld*, January 28, 2011 <www.computerworld.com>.

[38] Nicholas Jackson, "Despite Severed Connections, Egyptians Get Back Online," *The Atlantic*, January 29, 2011 <www.theatlantic.com>.

[39] KheOps, "When the Internet does not let citizens down," *Reflets*, September 11, 2011 <reflets.info>.

[40] "A Simple Box That Can Bring the Internet Anywhere," *Co.Exist*, November 28, 2012 <www.fastcoexist.com>; Venessa Miemis, "Contact Spotlight Series: Builders of the Next Net," *Emergent by Design*, June 8, 2011 <emergentbydesign.com>.

One open Net project, the Chokepoint Project, states its mission as "To identify chokepoints, understand the issues behind who owns what and has the power to turn off connections or control aspects of internet control like domain names."[41]

> During the recent uprising in Egypt, in January 2011, the order was given to "turn off" the Internet, sending shock-waves around the world. Murmurs were heard of US security agencies and American politicians asking for access to a similar kill switch. These actions force us to look at who owns The Internet? This is where the Choke Point Project comes in mapping the nodes of control in service of the multitude of global citizens under who authoritarian regimes can act upon without their consent. We are in favor of exploring approaches to the decentralization of access in favor of guaranteeing connectivity as a counter-weight to the control of the Internet by nation states and corporate influence. A team comprised of web researchers, software developers and data visualization experts aim to gather data from across the web and show the control points, while clearly explaining the issues involved: history of Internet control, current legal situation, choke points, possible strategies for decentralization, reasons for and against kill switches.
>
> We are confident to succeed with this project, through the interconnected network of designers and hackers available through the communities of ContactCon (a major conference focused on an independent Internet which will be held October 20th, 2011 in New York, convened by Douglas Rushkoff) and members of the P2P Foundation community.[42]

The object of this research is to develop an Internet architecture that is not vulnerable to shutdown. The umbrella term for projects to develop such an architecture is "NextNet."[43] The term was coined by David Rushkoff.[44]

In July 2012 the project reported on its progress to date:

- Hosting is now set up and data is being processed ready for the forthcoming beta launch of what we are calling the (dis)Connection State Map…
- Ongoing mapping and interface improvements are being added.
- The new website is practically ready to roll and we are starting work on a public wiki as well.
- Strategic partnerships with relevant organisations are coming along and we've had many meetings with interested parties.
- Simon, Ruben & Gustaf were in Rio for RightsCon, the related hackathon and the Freebird "pre-event".
- Data sources have been investigated.

[41] <chokepointproject.net>.
[42] "The Project," *Choke Point Project* <chokepointproject.net>.
[43] <p2pfoundation.net>.
[44] David Rushkoff, "The Next Net," *Reality Sandwich*, February 17, 2011 <www.realitysandwich.com>.

- And we're lucky to have a whole new bunch of very capable people from various disciplines onboard.[45]

Most visions of such a distributed, decentralized Internet architecture involve meshworks of various kinds, in which "there is actually a physical 'many to many' distribution of hardware itself."[46] As Rushkoff describes the advantages:

> Back in 1984, long before the Internet even existed, many of us who wanted to network with our computers used something called FidoNet. It was a super simple way of having a network—albeit an asynchronous one.
>
> One kid… would let his computer be used as a "server." This just meant his parents let him have his own phone line for the modem. The rest of us would call in from our computers (one at a time, of course) upload the stuff we wanted to share and download any email that had arrived for us. Once or twice a night, the server would call some other servers in the network and see if any email had arrived for anyone with an account on his machine. Super simple.
>
> Now FidoNet employed a genuinely distributed architecture… 25 years of networking later, lessons learned, and battles fought; can you imagine how much better we could do?[47]

The existing Internet architecture still has a considerable hub-and-spoke physical architecture, given its dependence on web-servers and routers. Meshworks overcome this limitation:

> Meshies believe that mesh networks will overthrow traditional networking and communications and create entirely new kinds of distributed software. For the purposes of this column, mesh networks (sometimes called mobile ad hoc networks, or MANETs) are local-area networks whose nodes communicate directly with each other through wireless connections. It is the lack of a hub-and-spoke structure that distinguishes a mesh network. Meshes do not need designated routers: instead, nodes serve as routers for each other. Thus, data packets are forwarded from node to node in a process that network technologists term "hopping."
>
> Before dismissing mesh networks as being of interest only to specialists, consider their advantages over existing hub-and-spoke networks. Mesh networks are self-healing: if any node fails, another will take its place. They are anonymous: nodes can come and go as they will. They are pervasive: a mobile node rarely encounters dead spots, because other nodes route around objects that hinder communication.[48]
>
> In a typical Wi-Fi network, there's one router and a relatively small number of devices using it as a gateway to the internet. In a mesh network, every device is also a

[45] "What's Cooking in the CPP kitchen (and a request for help)," *Chokepoint Project*, June 30, 2012 <chokepoint-project.net>.

[46] "Michel Bauwens and Sam Rose on the Choke Point Project," *P2P Foundation Wiki* <p2pfoundation.net>.

[47] Rushkoff, "The Next Net."

[48] Jason Pontin, "From the Editor: Mesh Networking Matters," *Technology Review*, September 2005 <www.technologyreview.com>.

> router. Bring in a new mesh device and it automatically links to any other mesh devices within radio range. It is an example of what internet architect David Reed calls "cooperative gain"—the more devices, the more bandwidth across the network.[49]

Another benefit of meshworks is that, even if the central fiber-optic network is shut down and there are area limits to the propagation of the network, the local meshwork can support community darknets based entirely on their members' computers and mobile devices. Short of blanketing an entire country with an electromagnetic pulse, there's no way to shut down local meshworks.

The Freenet project is one form of architecture for an encrypted local dark meshwork. It is completely anonymous, since individual nodes' routing functions are encrypted. The downside is that it is not a proxy for the Web; the Freenet includes only material from the World Wide Web which has actually been imported into it and stored on member hard drives.[50]

Nevertheless an urban Freenet, even if completely disconnected from the Web, could provide a robust range of services for a local counter-economy, including: hosting resident websites and community bulleting boards, a community encrypted currency on the model of Greco's credit-clearing networks, local email, sharing of music and other content files (including CAD/CAM files for micromanufacturers), telecommunication and teleconferencing links, assorted collaborative platforms, rating and reputational systems for local commerce, etc. It could also provide similar services for a distributed network like a phyle (about which more in a later chapter).

The Freenet, as a platform, can host member web pages, sites ("freesites") and social networks visible only to members of the Freenet. It can be used as the darknet or Virtual Private Network platform for any local organization or distributed network. For example the Las Indias cooperative, with which phyle theorist David de Ugarte is affiliated, uses Freenet for its internal functions.

Another meshwork/nextnet project, Commotion Wireless, "aims to build a new type of tool for democratic organizing":

> an open source "device-as-infrastructure" distributed communications platform that integrates users' existing cell phones, WiFi-enabled computers, and other WiFi-capable personal devices to create a metro-scale peer-to-peer (mesh) communications network.
>
> What it means: Democratic activists around the globe will gain access to a secure and reliable platform to ensure their communications cannot be controlled or cut off by authoritarian regimes.[51]

The Commotion Wireless website itself describes the general outlines of the project in much greater detail:

> … the developers, technavists, and organizers here propose to build a new type of tool for democratic organizing: an open source "device-as-infrastructure" distributed

[49] David Weingerger, "The Grid, Our Cars and the Net: One Idea to Link Them All," *Wired.com*, May 8, 2009 <www.wired.com>.

[50] <freenetproject.org>.

[51] Venessa Miemis, "10 Projects to Liberate the Web," *Shareable: Science & Tech*, October 4, 2011 <www.shareable.net>.

> communications platform that integrates users' existing cell phones, WiFi-enabled computers, and other WiFi-capable personal devices to create a metro-scale peer-topeer (mesh) communications network. Leveraging a distributed, mesh wireless infrastructure provides two key enhancements to existing circumvention technologies and supports human rights advocates and civil society organizations working around the globe. First, a distributed infrastructure eliminates the ability of governments to completely disrupt communications by shutting down the commercial or state-owned communications infrastructure. Second, device-as-infrastructure networks enhance communications security among activists by eliminating points for centralized monitoring, by enabling direct peer-to-peer communication, and by aggregating and securing individual communications streams.
>
> For over a decade, developers here have pioneered the development of "devicesas-infrastructure" broadband networks… Specifically, this project proposes the following five-point solution:
>
> - Create a robust and reliable participatory communications medium that is not reliant upon centralized infrastructure for local-to-local (peer-to-peer) and local-to-Internet communications;
> - Design ad hoc device-as-infrastructure technologies that can survive major outages (e.g. electricity, Internet connectivity) and are resilient during emergencies, natural disasters, or other hostile environments where conventional telecommunications networks are easily crippled;
> - Secure participants' communication to protect data integrity and anonymity through strong end-to-end encryption and data aggregation;
> - Implement communications technologies that integrate low-cost, preexisting, off-the-shelf devices (e.g. cell phones, laptops, consumer WiFi routers) and maximize use of open source software; and,
> - Develop an open, modular, and highly extensible communications platform that is easily upgraded and adapted to the particular needs and goals of different local users.[52]

More closely related to the specific problems presented by police in Cairo and San Francisco, Stephanie Brancaforte of Avaaz announced a project to "'blackoutproof' the protests"

> —with secure satellite modems and phones, tiny video cameras, and portable radio transmitters, plus expert support teams on the ground—to enable activists to broadcast live video feeds even during internet and phone blackouts and ensure the oxygen of international attention fuels their courageous movements for change.[53]

The FreedomBox is a small plug-in server with a built-in Tor router, which can plug into an electrical outlet in your home and provide wireless service—as well as providing point-to-point

[52] <tech.chambana.net>.

[53] Stephanie Brancaforte, "Blackout-proof the protests—it's happening!" *Ahvaaz email newsletter*, February 25, 2011.

meshwork connection to others with FreedomBoxes, in the event local wireless networks are shut down.[54] The Freedom Box is part of a larger hardware stack[55] promoted by the Free Network Foundation.[56] The stack includes the Freedom Tower—a high-powered mobile wi-fi hotspot with an encrypted router and uninterruptable power supply—which provided communications to Occupy Wall Street.[57]

Venessa Miemis listed sixteen wireless meshwork projects aimed at circumventing state censorship.[58]

Dust is a project that counters government attempts to filter certain kinds of traffic by protocol "fingerprinting," summarily blocking protocols like SSL, Tor, BitTorrent, and VPNs. Dust reencodes the traffic into a form which cannot be correctly fingerprinted by the filtering system.[59]

In May 2011 the Mozilla Foundation fell afoul of Homeland Security by refusing to comply with a request to remove a new extension from its Firefox browser—MAFIAAfire—which circumvents censorship of the Web by federal law enforcement and the content industries. MAFIAAfire "negates ICE's domain seizures, by automatically rerouting users to alternate domains."[60]

And Firefox announced a new extension, explicitly directed against SOPA, which functioned much like the earlier MAFIAAfire to circumvent domain name takedowns.[61]More recently, in August 2013, The Pirate Bay released PirateBrowser—an Internet browser for bypassing blocks—which was downloaded 100,000 times in the first three days after its issue.[62]

III. Networks vs. Hierarchies

But if hierarchies don't do so well at suppressing networked organizations, centralized, hierarchical institutions are finding themselves all too vulnerable to networked resistance.

In the early 1970s, in the aftermath of a vast upheaval in American political culture, Samuel Huntington wrote of a "crisis of democracy"; the American people, he feared, were becoming ungovernable. In *The Crisis of Democracy*, he argued that the system was collapsing from demand overload, because of an excess of democracy. Huntington's analysis is illustrative of elite thinking behind the neoliberal policy agenda of the past thirty years.

For Huntington, America's role as "hegemonic power in a system of world order" depended on a *domestic* system of order; this system of order—variously referred to as corporate liberalism, consensus capitalism, Cold War liberalism, and the welfare-warfare state—assumed a general

[54] "Learn About the FreedomBox!" *Freedom Box Foundation* <www.freedomboxfoundation.org/learn/> Accessed December 14, 2011.

[55] <commons.thefnf.org>.

[56] <thefnf.org>.

[57] <commons.thefnf.org>.

[58] Venessa Miemis, "16+ Projects & Initiatives Building Ad-Hoc Wireless Mesh Networks," *Emergent by Design*, February 11, 2011 <emergentbydesign.com>.

[59] Bruce Schneier, "Evading Internet Censorship," *Schneier on Security*, August 28, 2013 <www.schneier.com>.

[60] Mike Masnick, "Homeland Security Demands Mozilla Remove Firefox Extension That Redirects Seized Domains," *Techdirt*, May 5, 2011 <www.techdirt.com>.

[61] Melanie Pinola, "DeSopa for Firefox Bypasses SOPA DNS Blocking," *lifehacker*, December 20, 2011 <lifehacker.com>.

[62] J.D. Tuccille, "Surf Forbidden Sites With Pirate Bay's PirateBrowser," *Reason Hit & Run*, August 13, 2013 <reason.com>.

public willingness to stay out of government affairs.[63] And this was only possible because of a domestic structure of political authority in which the country "was governed by the president acting with the support and cooperation of key individuals and groups in the Executive office, the federal bureaucracy, Congress, and the more important businesses, banks, law firms, foundations, and media, which constitute the private establishment."[64]

America's position as defender of global capitalism required that its government have the ability "to mobilize its citizens for the achievement of social and political goals and to impose discipline and sacrifice upon its citizens in order to achieve these goals."[65] Most importantly, this ability required that democracy be largely nominal, and that citizens be willing to leave major substantive decisions about the nature of American society to qualified authorities. It required, in other words, "some measure of apathy and non-involvement on the part of some individuals and groups."[66]

Unfortunately—from his standpoint—these requirements were being gravely undermined by "a breakdown of traditional means of social control, a delegitimation of political and other means of authority, and an overload of demands on government, exceeding its capacity to respond."[67]

The phenomena that caused Huntington to recoil in horror in the early 1970s must have seemed positively tame by the late 1990s. The potential for networked resistance created by the Internet exacerbated Huntington's crisis of governability by orders of magnitude.

There is a wide body of literature on the emergence of networked modes of resistance in the 1990s, beginning with the Rand studies on netwar by David Ronfeldt, John Arquilla and other writers. In their 1996 paper "The Advent of Netwar," Arquilla and Ronfeldt wrote that technological evolution was working to the advantage of networks and the detriment of hierarchies. Although their focus was on the military aspect (what has since been called "Fourth Generation Warfare"), they also mentioned governability concerns in civil society much like those Huntington raised earlier. "Intellectual property pirates," "militant singleissue groups" and "transnational social activists," in particular, were "developing netwar-like attributes."

> Now… the new information technologies and related organizational innovations increasingly enable civil-society actors to reduce their isolation, build far-flung networks within and across national boundaries, and connect and coordinate for collective action as never before. As this trend deepens and spreads, it will strengthen the power of civilsociety actors relative to state and market actors around the globe…
>
> For years, a cutting edge of this trend could be found among left-leaning activist NGOs concerned with human-rights, environmental, peace, and other social issues at local, national, and global levels. Many of these rely on APC affiliates for communications and aim to construct a "global civil society" strong enough to counter the roles of state and market actors. In addition, the trend is spreading across the political spectrum. Activists on the right—from moderately conservative religious groups, to

[63] Samuel P. Huntington, Michael J. Crozier, Joji Watanuki, *The Crisis of Democracy. Report on the Governability of Democracies to the Trilateral Commission*: Triangle Paper 8 (New York: New York University Press, 1975), pp. 105–6.

[64] *Ibid*., p. 92.

[65] *Ibid*., pp. 7–8.

[66] *Ibid*., pp. 113–5.

[67] *Ibid*., pp. 7–8.

> militant antiabortion groups—are also building national and transnational networks based in part on the use of new communications systems.[68]

In "Tribes, Institutions, Markets, Networks" (1996) Ronfeldt focused on the special significance of networks for global civil society.

> … [A]ctors in the realm of civil society are likely to be the main beneficiaries. The trend is increasingly significant in this realm, where issue–oriented multiorganizational networks of NGOs—or, as some are called, nonprofit organizations (NPOs), private voluntary organizations (PVOs), and grassroots organizations (GROs)—continue to multiply among activists and interest groups who identify with civil society. Over the long run, this realm seems likely to be strengthened more than any other realm, in relative if not also absolute terms. While examples exist across the political spectrum, the most evolved are found among progressive political advocacy and social activist NGOs—e.g., in regard to environmental, human-rights, and other prominent issues— that depend on using new information technologies like faxes, electronic mail (e-mail), and on-line conferencing systems to consult and coordinate. This nascent, yet rapidly growing phenomenon is spreading across the political spectrum into new corners and issue areas in all countries.
>
> The rise of these networks implies profound changes for the realm of civil society. In the eighteenth and nineteenth centuries, when most social theorists focused on state and market systems, liberal democracy fostered, indeed required, the emergence of this third realm of activity… However, civil society was also considered to be a weaker realm than the state or the market. And while theorists treated the state and the market as systems, this was generally not the case with civil society…
>
> Now, the innovative NGO-based networks are setting in motion new dynamics that promise to reshape civil society and its relations with other realms at local through global levels. Civil society appears to be the home realm for the network form, the realm that will be strengthened more than any other…
>
> The network form seems particularly well suited to strengthening civil-society actors whose purpose is to address social issues. At its best, this form may thus result in vast collaborative networks of NGOs geared to addressing and helping resolve social equity and accountability issues that traditional tribal, state, and market actors have tended to ignore or are now unsuited to addressing well.
>
> The network form offers its best advantages where the members, as often occurs in civil society, aim to preserve their autonomy and to avoid hierarchical controls, yet have agendas that are interdependent and benefit from consultation and coordination.[69]

Networked global civil society, in the words of James Moore, is becoming a "Second Superpower":

[68] John Arquilla and David Ronfeldt, *The Advent of Netwar* MR-789 (Santa Monica, CA: RAND, 1996) <www.rand.org>.

[69] David F. Ronfeldt, *Tribes, Institutions, Markets, Networks* P-7967 (Santa Monica: RAND, 1996) <www.rand.org>.

As the United States government becomes more belligerent in using its power in the world, many people are longing for a "second superpower" that can keep the US in check. Indeed, many people desire a superpower that speaks for the interests of planetary society, for long-term well-being, and that encourages broad participation in the democratic process. Where can the world find such a second superpower? No nation or group of nations seems able to play this role.…

There is an emerging second superpower, but it is not a nation. Instead, it is a new form of international player, constituted by the "will of the people" in a global social movement…

While some of the leaders have become highly visible, what is perhaps most interesting about this global movement is that it is not really directed by visible leaders, but, as we will see, by the collective, emergent action of its millions of participants… What makes these numbers important is the new cyberspace enabled interconnection among the members. This body has a beautiful mind. Web connections enable a kind of near-instantaneous, mass improvisation of activist initiatives…

New forms of communication and commentary are being invented continuously. Slashdot and other news sites present high quality peer-reviewed commentary by involving large numbers of members of the web community in recommending and rating items. Text messaging on mobile phones, or texting, is now the medium of choice for communicating with thousands of demonstrators simultaneously during mass protests. Instant messaging turns out to be one of the most popular methods for staying connected in the developing world, because it requires only a bit of bandwidth, and provides an intimate sense of connection across time and space. The current enthusiasm for blogging is changing the way that people relate to publication, as it allows realtime dialogue about world events as bloggers log in daily to share their insights…

The Internet and other interactive media continue to penetrate more and more deeply all world society, and provide a means for instantaneous personal dialogue and communication across the globe. The collective power of texting, blogging, instant messaging, and email across millions of actors cannot be overestimated. Like a mind constituted of millions of inter-networked neurons, the social movement is capable of astonishingly rapid and sometimes subtle community consciousness and action.

Thus the new superpower demonstrates a new form of "emergent democracy" that differs from the participative democracy of the US government. Where political participation in the United States is exercised mainly through rare exercises of voting, participation in the second superpower movement occurs continuously through participation in a variety of web-enabled initiatives. And where deliberation in the first superpower is done primarily by a few elected or appointed officials, deliberation in the second superpower is done by each individual—making sense of events, communicating with others, and deciding whether and how to join in community actions. Finally, where participation in democracy in the first superpower feels remote to most citizens, the emergent democracy of the second superpower is alive with touch-

ing and being touched by each other, as the community works to create wisdom and to take action.

How does the second superpower take action? Not from the top, but from the bottom. That is, it is the strength of the US government that it can centrally collect taxes, and then spend, for example, $1.2 billion on 1,200 cruise missiles in the first day of the war against Iraq. By contrast, it is the strength of the second superpower that it could mobilize hundreds of small groups of activists to shut down city centers across the United States on that same first day of the war. And that millions of citizens worldwide would take to their streets to rally…

… [T]he continual distributed action of the members of the second superpower can, I believe, be expected to eventually prevail. Distributed mass behavior, expressed in rallying, in voting, in picketing, in exposing corruption, and in purchases from particular companies, all have a profound effect on the nature of future society. More effect, I would argue, than the devastating but unsustainable effect of bombs and other forms of coercion.

Deliberation in the first superpower is relatively formal—dictated by the US constitution and by years of legislation, adjudicating, and precedent. The realpolitik of decision making in the first superpower—as opposed to what is taught in civics class—centers around lobbying and campaign contributions by moneyed special interests—big oil, the military-industrial complex, big agriculture, and big drugs—to mention only a few. In many cases, what are acted upon are issues for which some group is willing to spend lavishly. By contrast, it is difficult in the US government system to champion policy goals that have broad, long-term value for many citizens, such as environment, poverty reduction and third world development, women's rights, human rights, health care for all. By contrast, these are precisely the issues to which the second superpower tends to address its attention.

Deliberation in the second superpower is evolving rapidly in both cultural and technological terms. It is difficult to know its present state, and impossible to see its future. But one can say certain things. It is stunning how quickly the community can act—especially when compared to government systems. The Internet, in combination with traditional press and television and radio media, creates a kind of "media space" of global dialogue. Ideas arise in the global media space. Some of them catch hold and are disseminated widely…

… The shared, collective mind of the second superpower is made up of many individual human minds—your mind and my mind—together we create the movement. In traditional democracy our minds don't matter much—what matters are the minds of those with power of position, and the minds of those that staff and lobby them. In the emergent democracy of the second superpower, each of our minds matters a lot. For example, any one of us can launch an idea. Any one of us can write a blog, send out an email, create a list. Not every idea will take hold in the big mind of the second superpower—but the one that eventually catches fire is started by an individual. And in the peer-oriented world of the second superpower, many more of us have the opportunity to craft submissions, and take a shot.

> The contrast goes deeper. In traditional democracy, sense-making moves from top to bottom. "The President must know more than he is saying" goes the thinking of a loyal but passive member of the first superpower. But this form of democracy was established in the 18th century, when education and information were both scarce resources. Now, in more and more of the world, people are well educated and informed. As such, they prefer to make up their own minds. Top-down sense-making is out of touch with modern people.[70]

In *The Zapatista "Social Netwar" in Mexico,*[71] Arquilla, Ronfeldt et al. expressed some concern over the possibilities of decentralized "netwar" techniques for destabilizing the existing political and economic order. They saw early indications of such a movement in the global political support network for the Zapatistas. Loose, ad hoc coalitions of affinity groups, organizing through the Internet, could throw together large demonstrations at short notice, and "swarm" the government and mainstream media with phone calls, letters, and emails far beyond their capacity to cope.

> The information revolution is leading to the rise of network forms of organization, whereby small, previously isolated groups can communicate, link up, and conduct coordinated joint actions as never before. This, in turn, is leading to a new mode of conflict—"netwar"—in which the protagonists depend on using network forms of organization, doctrine, strategy, and technology. Many actors across the spectrum of conflict—from terrorists, guerrillas, and criminals who pose security threats to social activists who do not—are developing netwar designs and capabilities.[72]

The interesting thing about the Zapatista netwar, according to Ronfeldt and Arquilla, is that to all appearances it started out as a run-of-the-mill Third World army's suppression of a run-of-the-mill local insurgency. Right up until Mexican troops entered Chiapas, there was every indication the uprising would be suppressed quickly according to the standard script, and that the world outside Mexico would "little note nor long remember" it. It looked that way until Subcommandante Marcos and the Zapatistas made their appeal to global civil society and became the center of a networked movement that stirred activists the world over. The Mexican government was blindsided by the global reaction.[73] The reaction included not only activist support around the world, but a demonstration of hundreds of thousands in solidarity in Mexico City—a fact which no doubt figured in the government's decision to accept a ceasefire.[74] Since then, Immanuel Wallerstein argues, this political support has been the main factor in the government limiting itself largely to skirmishes and harassment of areas under EZLN control, despite overwhelming military superiority.[75]

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[70] James F. Moore, "The Second Superpower Rears Its Beautiful Head," Chapter Two of John Lebkowski and Mitch Ratcliffe, eds., *Extreme Democracy* (Lulu, 2005), pp. 37–41 <www.extremedemocracy.com>.

[71] John Arquilla, David Ronfeldt, Graham Fuller, and Melissa Fuller, *The Zapatista "Social Netwar" in Mexico* MR-994-A (Santa Monica: Rand, 1998) <www.rand.org>.

[72] *Ibid*., xi.

[73] David Ronfeldt and Armando Martinez, "A Comment on the Zapatista Netwar," in Ronfeldt and Arquilla, *In Athena's Camp: Preparing for Conflict in th Information Age* (Santa Monica: Rand, 1997), pp. 369–371.

[74] Andalusia Knoll and Itandehui Reyes, "From Fire to Autonomy: Zapatistas, 20 Years of Walking Slowly," *Truthout*, January 25, 2014 <www.truth-out.org>.

[75] Immanuel Wallerstein, "The Neo-Zapatistas: Twenty Years After," *Immanuel Wallerstein*, May 1, 2014 <www.iwallerstein.com>.

Swarming—in particular the swarming of public pressure through letters, phone calls, emails, and public demonstrations, and the paralysis of communications networks by such swarms—is the direct descendant of the "overload of demands" Huntington wrote of in the 1970s. In "Swarming & the Future of Conflict," Ronfeldt and Arquilla focused on swarming, in particular, as a technique that served the entire spectrum of networked conflict—including "civic-oriented actions."[76] Despite the primary concern with swarming as a military phenomenon, they also remarked on networked global civil society—and the Zapatista support network in particular—as examples of peaceful swarming with which states were ill-equipped to deal:

> Briefly, we see the Zapatista movement, begun in January 1994 and continuing today, as an effort to mobilize global civil society to exert pressure on the government of Mexico to accede to the demands of the Zapatista guerrilla army (EZLN) for land reform and more equitable treatment under the law. The EZLN has been successful in engaging the interest of hundreds of NGOs, who have repeatedly swarmed their media-oriented "fire" (i.e., sharp messages of reproach) against the government. The NGOs also swarmed in force—at least initially—by sending hundreds of activists into Chiapas to provide presence and additional pressure.[77]
>
> At present, our best understanding of swarming—as an optimal way for myriad, small, dispersed, autonomous but internetted maneuver units to coordinate and conduct repeated pulsing attacks, by fire or force—is best exemplified in practice by the latest generation of activist NGOs, which assemble into transnational networks and use information operations to assail government actors over policy issues. These NGOs work comfortably within a context of autonomy from each other; they also take advantage of their high connectivity to interact in the fluid, flexible ways called for by swarm theory.
>
> The growing number of cases in which activists have used swarming include, in the security area, the Zapatista movement in Mexico… The [Zapatista movement] is a seminal case of "social netwar," in which transnationally networked NGOs helped deter the Mexican government and army from attacking the Zapatistas militarily…
>
> Social swarming is especially on the rise among activists that oppose global trade and investment policies. Internet-based protests helped to prevent approval of the Multilateral Agreement on Investment (MAI) in Europe in 1998. Then, on July 18, 1999— a day that came to be known as J18—furious anticapitalist demonstrations took place in London, as tens of thousands of activists converged on the city, while other activists mounted parallel demonstrations in other countries. J18 was largely organized over the Internet, with no central direction or leadership. Most recently, with J18 as a partial blueprint, several tens of thousands of activists, most of them Americans but many also from Canada and Europe, swarmed into Seattle to shut down a major meeting of the World Trade Organization (WTO) on opening day, November 30, 1999—in an operation known to militant activists and anarchists as

[76] Arquilla and Ronfeldt, *Swarming & the Future of Conflict* DB-311 (Santa Monica, CA: RAND, 2000), iii <www.rand.org>.

[77] *Ibid*., p. 39.

> N30, whose planning began right after J18. The vigor of these three movements and the effectiveness of the activists' obstructionism came as a surprise to the authorities.
>
> The violent street demonstrations in Seattle manifested all the conflict formations discussed earlier—the melee, massing, maneuver, and swarming. Moreover, the demonstrations showed that information-age networks (the NGOs) can prevail against hierarchies (the WTO and the Seattle police), at least for a while. The persistence of this "Seattle swarming" model in the April 16, 2000, demonstrations (known as A16) against the International Monetary Fund and the World Bank in Washington, D.C., suggests that it has proven effective enough to continue to be used…
>
> In these social netwars… swarming appears not only in real-life actions but also through measures in cyberspace. Swarms of email sent to government figures are an example. But some "hacktivists" aim to be more disruptive—pursuing "electronic civil disobedience." One notable recent effort associated with a collectivity called the Electronic Disturbance Theater is actually named SWARM. It seeks to move "digital Zapatismo" beyond the initial emphasis of its creators on their "FloodNet" computer system, which has been used to mount massive "ping" attacks on government and corporate web sites, including as part of J18. The aim of its proponents is to come up with new kinds of "electronic pulse systems" for supporting militant activism. This is clearly meant to enable swarming in cyberspace by myriad people against government, military, and corporate targets.[78]

Swarming, in all its manifestations, involves a new understanding of the strategic principle of mass, in which mass is achieved by a rapid, transitory concentration of forces at the point of attack. The flash mob, when used for activist purposes, is a good example of this. Another, older example of the same phenomenon was the Wobbly practice of unannounced one-day strikes at random intervals.

The new principle of mass is far less vulnerable to preemptive disruption in its preparatory stages. Swarming attacks, which can be organized on comparatively short notice by loose networks, require far less advance planning. More conventional mass demonstrations in the previous era, like the East German uprisings in 1989, were much more visible to authorities during their planning stages. Now the planning and preparatory phase is drastically shortened and virtually invisible to the authorities, with the highly visible public demonstration seeming to appear out of nowhere with little or no warning.[79]

The German *Blitzkrieg* doctrine, by way of analogy, relied on radio-equipped tanks to turn their armored force—fewer, more lightly armored and with lighter guns than that of the French—into a "coordinated group weapon."[80] German armored formations, by converging rapidly at the breakthrough point and then rapidly dispersing, or by achieving concentration of fire without spatial concentration, prefigured the flash mobs which—although possessing far less firepower than the state's police—are able to form and disperse before the state can react to them.

Since then, doctrines like the American Airland Battle of the 1980s attempted to attain mass through concentration of fire (coordinated artillery, missile and air strikes) on the *Schwerpunkt*,

[78] *Ibid*., pp. 50–52.
[79] Clay Shirky, *Here Comes Everybody*, pp. 168–169.
[80] *Ibid*., pp. 172–173.

with the physical concentration of rapidly assembled and dispersed ground forces playing a secondary role. A force with superior agility, despite smaller numbers, can achieve local superiority at will and defeat the enemy in detail.

Netwar, Ronfeldt and Arquilla wrote elsewhere, is characterized by "the networked organizational structure of its practitioners—with many groups actually being leaderless—and the suppleness in their ability to come together quickly in swarming attacks."[81]

The disappearance of time and space limitations, associated with networked communications operating at the speed of light, has strong implications for the growing capability of swarming attacks. Consider the radical compression of the time factor, as described by Sarah Wanenchak:

> Now the spread of information is nearly instantaneous. A protest is violently put down in an afternoon; by the evening, one can see solidarity demonstrations in multiple other nations. People act and react more quickly and more fluidly in response to new information, to changing perceptions of opportunity and threat. The heartbeat of collective action has sped up.
>
> Coordination across large distances is another practical result of the increased speed of information sharing… [N]ow protesters in multiple different countries call a day of protest, and over 900 cities worldwide take part.[82]

And as Julian Assange argues, such advances in speed and ubiquity make it possible for the swarming attack to take the form of a full court press, overwhelming multiple governments or agencies at once so that each is too preoccupied dealing with its own swarming attacks to cooperate with the others.

> In relation to the Arab Spring, the way I looked at this back in October of 2010 is that the power structures in the Middle East are interdependent, they support each other. If we could release enough information fast enough about many of these powerful individuals and organizations, their ability to support each other would be diminished. They'd have to fight their own local battles—they'd have to turn inward to deal with the domestic political fallout from the information. And therefore they would not have the resources to prop up surrounding countries.[83]

The rest of this section is, in many ways, a direct continuation of our discussion of stigmergy in the previous chapter. It might be fruitful to reread the fourth section of Chapter One and proceed directly to the material below.

Many open-source thinkers, going back to Eric Raymond in *The Cathedral and the Bazaar*, have pointed out the nature of open-source methods and network organization as force-multipliers.[84] Open-source design communities pick up the innovations of individual members

[81] John Arquilla and David Ronfeldt, "Introduction," in Arquilla and Ronfeldt, eds., *Networks and Netwars: The Future of Terror, Crime, and Militancy* MR-1382-OSD (Santa Monica: Rand, 2001) <www.rand.org> ix.

[82] Sarah Wanenchak, "Everything New is Old Again: Historical Augmented Revolution," *Cyborgology*, November 29, 2011 <thesocietypages.org>.

[83] Michael Hastings, "Julian Assange: The Rolling Stone Interview," *Rolling Stone*, February 2, 2012 <www.rollingstone.com>.

[84] Eric S. Raymond, *The Cathedral and the Bazaar* <catb.org>.

and quickly distribute them wherever they are needed, with maximum economy. This is a feature of the stigmergic organization that we considered earlier.

This principle is at work in the file-sharing movement, as described by Cory Doctorow. Individual innovations immediately become part of the common pool of intelligence, universally available to all.

> Raise your hand if you're thinking something like, "But DRM doesn't have to be proof against smart attackers, only average individuals!… "
>
> … I don't have to be a cracker to break your DRM. I only need to know how to search Google, or Kazaa, or any of the other general-purpose search tools for the cleartext that someone smarter than me has extracted.[85]
>
> It used to be that copy-prevention companies' strategies went like this: "We'll make it easier to buy a copy of this data than to make an unauthorized copy of it. That way, only the *uber*-nerds and the cash-poor/time rich classes will bother to copy instead of buy." But every time a PC is connected to the Internet and its owner is taught to use search tools like Google (or The Pirate Bay), a third option appears: you can just download a copy from the Internet….[86]

Bruce Schneier describes the stigmergic Bazaar model as automation lowering the marginal cost of sharing innovations.

> Automation also allows class breaks to propagate quickly because less expertise is required. The first attacker is the smart one; everyone else can blindly follow his instructions. Take cable TV fraud as an example. None of the cable TV companies would care much if someone built a cable receiver in his basement and illicitly watched cable television. Building that device requires time, skill, and some money. Few people could do it. Even if someone built a few and sold them, it wouldn't have much impact.
>
> But what if that person figured out a class break against cable television? And what if the class break required someone to push some buttons on a cable box in a certain sequence to get free cable TV? If that person published those instructions on the Internet, it could increase the number of nonpaying customers by millions and significantly affect the company's profitability.[87]

The reduced cost of aggregating or replicating small contributions is a key feature of stigmergy. This is one illustration of a broader advantage of stigmergy: modular design. In Schneier's words, expertise is "[e]ncapsulated and commoditized." "Take a class break [i.e. a hack], automate it, and propagate the break for free, and you've got a recipe for a security disaster."[88]

Open-source insurgency follows this model, with each individual contribution quickly becoming available to all. John Robb writes:

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[85] Doctorow, "Microsoft DRM Research Talk," in *Content: Selected Essays on Technology, Creativity, Copyright, and the Future of the Future* (San Francisco: Tachyon Publications, 2008), pp. 7–8.

[86] Doctorow, "It's the Information Economy, Stupid," in *Ibid.*, p. 60.

[87] Bruce Schneier, *Beyond Fear: Thinking Sensibly About Security in an Uncertain World* (New York: Copernicus Books, 2003), p. 95.

[88] *Ibid.*, p. 96.

> The decentralized, and seemingly chaotic guerrilla war in Iraq demonstrates a pattern that will likely serve as a model for next generation terrorists. This pattern shows a level of learning, activity, and success similar to what we see in the open source software community. I call this pattern the bazaar. The bazaar solves the problem: how do small, potentially antagonistic networks combine to conduct war? Lessons from Eric Raymond's "The Cathedral and the Bazaar" provides a starting point for further analysis. Here are the factors that apply (from the perspective of the guerrillas):
>
> - Release early and often. Try new forms of attacks against different types of targets early and often. Don't wait for a perfect plan.
> - Given a large enough pool of co-developers, any difficult problem will be seen as obvious by someone, and solved. Eventually some participant of the bazaar will find a way to disrupt a particularly difficult target. All you need to do is copy the process they used.
> - Your co-developers (beta-testers) are your most valuable resource. The other guerrilla networks in the bazaar are your most valuable allies. They will innovate on your plans, swarm on weaknesses you identify, and protect you by creating system noise.[89] The rapid innovation in Improvised Explosive Devices (IEDs) achieved by open-source warfare networks in Iraq and Afghanistan is a case in point.[90] Any innovation developed by a particular cell of Al Qaeda Iraq, if successful, is quickly adopted by the entire network.

The key to understanding the agility of networks is the concept of cognitive feedback loops.

> Intelligence is a cognitive feedback system that allows us to adjust appropriately to changing conditions…
>
> As a society, we use things like science, journalism, blogs, twitter feeds, and intelligence services to collectively observe what's going on within and around our society. We use pundits, academia, government deliberations, boardroom conferences, online forums and other conversations to reflect on what we've observed and to formulate our responses based on what we think we're learning. We call up relevant pieces of the past using libraries, databases, history, the records of mass media, and our own individual memories. We take action through corporate and government policies and activities and the billions of decisions and activities of variously informed individuals, families, networks, and other social groupings. We then reflect on the results of what "we" have done, not only through the institutions I mentioned earlier—science, journalism, etc.— but also through the investigations and protests of activists and other political players working through political campaigns and lobbying.

[89] John Robb, "THE BAZAAR'S OPEN SOURCE PLATFORM," *Global Guerrillas*, September 24, 2004 <globalguerrillas.typepad.com>. Eric Raymond has raised a caveat concerning Robb's application of the Bazaar paradigm [email].

[90] Adam Higginbotham, "U.S. Military Learns to Fight Deadliest Weapons," *Wired*, July 28, 2010 <www.wired.com>.

> This is our societal collective intelligence—or lack of it—the feedback system through which our society responds to changes in its collective circumstances—changes like climate change…
>
> How well does our society's collective intelligence feedback system—the many ways we collectively learn (or not) from experience—recognize and deal with the feedback systems that generate climate change? What factors help us do this—and which ones hinder us? THIS is what we need to attend to.
>
> Because ultimately, climate change is not the issue. Ultimately, the issue is our collective ability to observe, think, feel, decide, act, and reflect on our actions and their results. If we can do that well, we can deal well with every issue we face because—thanks to our own cognitive feedback powers—it doesn't matter where we start. We'll be able to improve and correct our course as we proceed, collectively, into a better future.[91]

For this reason, John Robb argues, a hierarchical military establishment like the U.S. is unlikely to surpass the agility of a networked effort like Al Qaeda Iraq.

> First, out-innovating the insurgency will most likely prove unsuccessful. The insurgency uses an open-source community approach (similar to the decentralized development process now prevalent in the software industry) to warfare that is extremely quick and innovative. New technologies and tactics move rapidly from one end of the insurgency to the other, aided by Iraq's relatively advanced communications and transportation grid—demonstrated by the rapid increases in the sophistication of the insurgents' homemade bombs. This implies that the insurgency's innovation cycles are faster than the American military's slower bureaucratic processes (for example: its inability to deliver sufficient body and vehicle armor to our troops in Iraq).[92]

Stigmergic, networked organizations are far more agile than hierarchical institutions because they require no permission or administrative coordination to act. A traditional hierarchy, in which decisions are mediated administratively or socially, incurs enormous transaction costs getting everyone on the same page before anyone can act.

Networks have the property that Nassim Taleb calls "antifragility." An antifragile system is one that "regenerates itself continuously by using, rather than suffering from, random events, unpredictable shocks, stressors, and volatility. The antifragile gains from prediction errors, in the long run."[93]

The speed and agility of the network, its shortened reaction time, and the rapidity with which it shares information and new techniques, mean that networks are typically inside what strategist John Boyd called the OODA loop of hierarchies.[94] They react more quickly to changing circum-

[91] Tom Atlee, "Feedback Dynamics in Climate and Society," *Random Communications from an Evolutionary Edge*, February 2013 <tom-atlee.posterous.com>.

[92] John Robb, "Open Source War," *New York Times*, October 15, 2005 <www.nytimes.com/2005/10/15/opinion/15robb.html

[93] Nassim Taleb, *Antifragile: Things That Gain From Disorder* (New York: Random House, 2012), p. 8.

[94] "… in order to win, we should operate at a faster tempo or rhythm than our adversaries— or, better yet, get inside adversary's Observation-Orientation-Decision-Action time cycle or loop." John R. Boyd, *Patterns of Conflict*

stances than do hierarchies, so they can stay a step ahead of them and keep them constantly off-balance. As a result, networks can go through multiple generations of tactical innovation while hierarchies are still ponderously formulating a response to first-generation practices. Organizations that can process new information and make generational changes in praxis in response to that information more quickly outperform those that don't. Boyd biographer Grant Hammond writes:

> Boyd's answer is that we should be open to possibilities, to opportunities and ready and able to recognize choices and make them. It is all a matter of connections and choices. The more we know, the more we connect—to the environment, to the past, the future, to people, to ideas, and to things. In doing so, we have to make choices, to prioritize, to do trade-off thinking about options and possibilities. We also have to embrace novelty, to synthesize, to create opportunities out of the things around us, to be the architect of our own life in so far as possible. For Boyd, living is thinking and creating through endless OODA Loops of various sizes, speeds, and importance.[95]

Boyd called it the Law of Iteration:

> the primary determinant to winning dogfights was not observing, orienting, planning, or acting better. The primary determinant to winning dogfights was observing, orienting, planning, and acting *faster*. In other words, how quickly one could iterate. *Speed of iteration*, Boyd suggested, *beats quality of iteration.*[96]

Generally, OODA loops become shorter as the "distance" decreases, or friction is reduced (in information terms) between the observation and acting portion of the loop—the actor ideally being empowered to directly implement changes in actions based on her own observation of the results of previous action. Anything that erects barriers between the different sub-processes of the OODA loop—like policy-making procedures within a hierarchy—or impedes feedback will slow down information-processing and reaction.

> Whatever has been planned, there are always unwanted consequences for a reason that has nothing to do with the quality of the research or with the precision of the plan, but with the very nature of action. It has never been the case that you first know and then act. You first act tentatively and then begin to know a bit more before attempting again.[97]

To synthesize Boyd and Taleb, an antifragile system is characterized by a short OODA loop: a rapid cycle of iterations and immediate adoption of successful variations. The larger the number

(December 1986), p. 5. The idea is to "Simultaneously compress our time and stretch-out adversary time to generate a favorable mismatch in time/ability to shape and adapt to change." One does this by exploiting operations and weapons that "Generate a rapidly changing environment" and at the same time to "Inhibit an adversary's capacity to adapt to such an environment." p. 7. By doing this one may "Render adversary powerless by denying him the opportunity to cope with unfolding circumstances." p. 136.

[95] Grant T. Hammond, "The Essential Boyd" October 6, 2006 <fasttransients.files.wordpress.com/2012/03/hammond-theessentialboyd1.pdf>.

[96] Jeff Atwood, "Boyd's Law of Iteration," *Coding Horror*, February 7, 2007 <www.codinghorror.com>.

[97] Bruno Latour, quoted at *Infotechia* <infotechia.com>.

of nodes contributing their individual experience, and the faster the cycle of iterations, the more likely the network is to benefit. A good example from Taleb is research. Payoffs from research follow a power law distribution: a small number of trials pay off enormously. "Consequently, payoff from research should necessarily be linear to number of trials, not total funds involved in the trials."[98] Individual innovations are random and unpredictable, and do not correlate with research expenditure. What matters is the size of the network, the number of iterations, and the lowest possible transaction cost of replicating innovations within the network.

Only successful iterations matter because their successes become the collective property of the entire network. A single network is experiencing—in the sense of benefiting from the experience of—thousands, millions or billions of constant iterations, so that the collective spins off innovations with the speed of replicating yeast, and evolves as fast as a bacteria population developing antibiotic resistance.

A stigmergic network with a short OODA loop that can adopt the benefits of individual nodes' experience evolves in a Lysenkoist manner. In Darwinian evolution, only the most successful individuals live and pass their successful mutations to their own physical offspring. But stigmergic organization means that every individual node that adopts the successful innovation through imitation becomes the "offspring" of the innovator; the successful mutations generated by individual nodes can immediately be adopted as part of the genetic code of every other node in the network, without the others having to die off. So the network as a whole thrives and grows in response to randomness and volatility—the definition of antifragility.

In the evolutionary model, the network is closer to the species than to the individual animal.

> To satisfy the conditions for… immortality, the organisms need to predict the future with perfection—near perfection is not enough. But by letting the organisms go one lifespan at a time, with modifications between successive generations, nature does not need to predict future conditions… Every random event will bring its own antidote in the form of ecological variation. It is as if nature changed itself at every step and modified its strategy every instant.
>
> Consider this in terms of economic and institutional life. If nature ran the economy, it would not continuously bail out its living members to make them live forever. Nor would it have permanent administrations and forecasting departments that try to outsmart the future…[99]

Compare this to the hierarchical organization, like John Kenneth Galbraith's corporate technostructure in *The New Industrial State*, which survives only by suppressing randomness and volatility in its surrounding environment and making it predictable—in other words, it's fragile.

> When you are fragile, you depend on things following the exact planned course, with as little deviation as possible—for deviations are more harmful than helpful. This is why the fragile needs to be very predictive in its approach, and, conversely, predictive systems cause fragility. When you want deviations, and you don't care about the possible dispersion of outcomes that the future can bring, since most will be helpful, you are antifragile.[100]

[98] Taleb, p. 230.
[99] *Ibid*. p. 68.
[100] *Ibid*. p. 71.

> What makes life simple is that the robust and antifragile don't have to have as accurate a comprehension of the world as the fragile—and they do not need forecasting.[101]

"Optionality"—the freedom from not being locked into a course of action by past investments or a burden of overhead and debt—means "you don't have much need for what is commonly called intelligence, knowledge, insight, skills… For you don't have to be right that often." Instead, you can gain from random trial and error and incremental tinkering. In evolution, "nature simply keeps what it likes… "[102] The network benefits from the long-shot contributions of any members, without any downside risk to the network as a whole from individual failures.

In most cases individual success comes from luck or trial and error, not knowledge or predictive capability. The knowledge inheres not in individuals, but in the process or the network as a whole—whether, as Taleb says, it be phrased in the terms of the Muslim skeptic philosopher Al-Ghazali who said knowledge is a property of God), Adam Smith's invisible hand of the market, or modern theorists who talk about self-organizing systems.[103]

Stigmergy means that the network is far—far, far—more than the sum of its individual nodes. Each addition to the size of a network is non-linear.

> Collaboration has an explosive upside, what is mathematically called a superadditive function, i.e., one plus one equals more than two, and one plus one plus one equals much, much more than three. That is pure nonlinearity with explosive benefits…[104]

If there is intelligence involved—and I believe there is—the ex post theories constructed by academics may in some sense model it. But the intelligence itself is mainly an emergent phenomenon of the collective.

The ability to take advantage of this kind of stigmergic effect tends to be identified with module-platform architectures that are infinitely granular and possess low overhead. Such architectures position the collective to quickly take advantage of random opportunity, whereas centralized or hierarchical architectures not only make it harder to take advantage of opportunities but also to escape path dependencies from unsuccessful decisions in the past. The central property of topdown decision-making, Taleb says: it is

> usually irreversible, so mistakes tend to stick, whereas bottom-up is gradual and incremental, with creation and destruction along the way…
>
> Further, things that grow in a natural way… have a fractal quality to them. Like everything alive, all organisms, like lungs, or trees, grow in some form of self-guided but tame randomness… These fractals induce a certain wealth of detail based on a small number of rules of repetition of nested patterns.[105]

Taleb discusses trial-and-error tinkering and optionality in language that sounds much like Jane Jacobs's argument that technological advancement results mainly from taking advantage of unforeseen spinoffs or off-brand uses of technologies originally developed for other purposes.

[101] *Ibid*. p. 135.
[102] *Ibid*. pp. 180–181.
[103] *Ibid*. p. 233.
[104] *Ibid*.
[105] *Ibid*. pp. 324–325.

> Coca-Cola began as a pharmaceutical product. Tiffany & Co… started life as a stationery store… Raytheon, which made the first missile guidance system, was a refigerator maker… Nokia, who used to be the top mobile phone maker, began as a paper mill… DuPont, now famous for Teflon… and the durable fabriv Kevlar, actually started out as an explosives company.[106]

Harold Jarche makes similar points to Taleb's and Boyd's about the need for a faster learning-response cycle and the need enable optionality by individual participants in the networked organization.

> As feedback loops get faster with increased connectivity, the ability to learn and "spin on a dime" becomes paramount… Technology is only a small part of creating more nimble companies. Workers have to be able to recognize patterns in complexity and chaos and be empowered to do something with their observations and insights…
>
> Innovative and contextual methods mean that standard processes do not work for exception-handling or identifying new patterns. Self-selection of tools puts workers in control of what they use, like knowledge artisans whose distinguishing characteristic is seeking and sharing information to complete tasks. Equipped with, and augmented by, technology, they cooperate through their networks to solve complex problems and test new ideas. This only works in transparent environments.[107]

We quoted, earlier, R. A. Wilson's observations on the tendency of hierarchy to suppress accurate feedback to those in authority, so that they're unable to respond properly to information from their environment. Open, networked associations, on the other hand, are agile precisely because, in an organization where individuals possess no authority over each other, there are no barriers to accurate feedback.

The problem, as we saw, is that hierarchies can't afford to be antifragile because they're founded on conflict of interest. Attempting to make an institution more legible to those at the top of the hierarchy, by deskilling labor, will make processes more fragile.

Innovation and progress come through interaction between large numbers of individuals—but horizontally, not in a centrally planned manner. Hierarchy preempts this horizontal relationship and attempts to extract rents from it, thereby rendering the parts—the source of real innovation—impotent.

Although Deming's motto "Drive out fear" can never be fully realized in a hierarchy, it can be in a self-organized network.

The whole ethos of the network, as illustrated by Eric Raymond's Bazaar, is based on sharing knowledge ("release early and release often") and benefiting from feedback ("many eyeballs make shallow bugs").

A good example is modern science. Alchemists, Clay Shirky argues, failed to benefit from each other's knowledge because they were, as a group,

> notably reclusive; they typically worked alone, they were secretive about their methods and their results, and they rarely accompanied claims of insight or success with

[106] *Ibid*. p. 235.

[107] Harold Jarche, "hyper connected pattern-seeking," *Life in perpetual Beta*, December 11, 2012 <www.jarche.com>.

> anything that we'd recognize today as documentation, let alone evidence. Alchemical methods were hoarded rather than shared, passed down from master to apprentice, and when the alchemists did describe their experiments, the descriptions were both incomplete and vague.
>
> This was hardly a recipe for success; even worse, no two people working with alchemical descriptions could reliably even fail in the same way. As a result, alchemical conclusions accumulated only slowly, with no steady improvement in utility. Absent transparent methods and a formal way of rooting out errors, erroneous beliefs were as likely as correct ones to be preserved over generations. In contrast, members of the Invisible College [a number of natural philosophers grouped around Robert Boyle in 1645—direct ancestor of the Royal Society] described their methods, assumptions, and results to one another, so that all might benefit from both successes and failures…
>
> Culture—not tools or insights—animated the Invisible College and transmuted alchemy into chemistry. The members accumulated facts more quickly, and were able to combine existing facts into new experiments and new insights. By insisting on accuracy and transparency, and by sharing their assumptions and working methods with one another, the collegians had access to the group's collective knowledge and constituted a collaborative circle.[108]

And the American bureaucratic national security state's clumsy response to terrorism is typical of the way hierarchies react to networks.

> According to some estimates, it now takes Iraqi insurgents less than a month to adapt their methods of attack, much faster than coalition troops can respond. "For every move we make, the enemy makes three," U.S. Brigadier General Joe E. Ramirez Jr. told attendees at a May conference on IEDs. "The enemy changes techniques, tactics, and procedures every two to three weeks. Our biggest task is staying current and relevant."
>
> Unfortunately, the traditional weapons acquisition process, which dictates how the United States and other Western militaries define and develop new weapons systems, is simply not designed to operate on such a fleeting timescale. It can take years and sometimes decades—not to mention many millions or billions of dollars—for a new military machine to move from concept to design to testing and out into the field. Worse, the vast majority of the battlefield technologies now wending their way through the acquisition bureaucracy were intended to fight large force-on-force battles among sovereign nations, not the guerrilla warfare that typifies the conflicts in Iraq, Afghanistan, and elsewhere…
>
> This past spring and summer I interviewed dozens of current and former military officers, analysts, weapons developers, and others to try to understand why the coalition forces' technological might has proved so ineffectual. Nearly everyone I spoke with agreed there is a serious mismatch between the West's industrial-age approach to warfare and the insurgents' more fluid and adaptive style…

[108] Clay Shirky, *Cognitive Surplus* (New York: The Penguin Press, 2010), pp. 138–139.

> Terrorist Web sites serve not only to spread propaganda but also to share knowledge among insurgent groups… That helps explain why the learning cycles among Iraqi insurgents are some 20 times as fast as the Irish Republican Army's were in Northern Ireland in the 1980s, according to military estimates…[109]

Open-source asymmetric warfare networks, by making ad hoc use of off-theshelf technology, are able to develop weapons that rival in sophistication the products of years of military R&D. As Cory Doctorow notes, cheap technologies which can be modularized and mixed-and-matched for any purpose are just lying around. "… [T]he market for facts has crashed. The Web has reduced the marginal cost of discovering a fact to $0.00." He cites Robb's notion that "[o]pen source insurgencies don't run on detailed instructional manuals that describe tactics and techniques." Rather, they just run on "plausible premises." You just put out the plausible premise—i.e., the suggestion based on your gut intuition, based on current technical possibilities, that something can be done—that IEDs can kill enemy soldiers, and then anyone can find out *how* to do it via the networked marketplace of ideas, with virtually zero transaction costs.

> But this doesn't just work for insurgents—it works for anyone working to effect change or take control of her life. Tell someone that her car has a chip-based controller that can be hacked to improve gas mileage, and you give her the keywords to feed into Google to find out how to do this, where to find the equipment to do it—even the firms that specialize in doing it for you.
>
> In the age of cheap facts, we now inhabit a world where knowing something is possible is practically the same as knowing how to do it.
>
> This means that invention is now a lot more like collage than like discovery.

Doctorow mentions Bruce Sterling's reaction to the innovations developed by the protagonists of his (Doctorow's) *Makers*: "There's hardly any engineering. Almost all of this is mash-up tinkering." Or as Doctorow puts it, it "assembles rather than invents."

> It's not that every invention has been invented, but we sure have a lot of basic parts just hanging around, waiting to be configured. Pick up a $200 FPGA chip-toaster and you can burn your own microchips. Drag and drop some code-objects around and you can generate some software to run on it. None of this will be as efficient or effective as a bespoke solution, but it's all close enough for rock-n-roll.[110]

Murray Bookchin anticipated something like this back in the 1970s, writing in *Post-Scarcity Anarchism*:

> Suppose, fifty years ago, that someone had proposed a device which would cause an automobile to follow a white line down the middle of the road, automatically and even if the driver fell asleep… He would have been laughed at, and his idea would have been called preposterous… But suppose someone called for such a device today,

[109] Robert N. Charette, "Open-Source Warfare," *IEEE Spectrum*, November 2007 <spectrum.ieee.org>.
[110] Cory Doctorow, "Cheap Facts and the Plausible Premise," *Locus Online*, July 5, 2009 <www.locusmag.com>.

> and was willing to pay for it, leaving aside the question of whether it would actually be of any genuine use whatever. Any number of concerns would stand ready to contract and build it. No real invention would be required. There are thousands of young men in the country to whom the design of such a device would be a pleasure. They would simply take off the shelf some photocells, thermionic tubes, servomechanisms, relays, and, if urged, they would build what they call a breadboard model, and it would work. The point is that the presence of a host of versatile, reliable, cheap gadgets, and the presence of men who understand all their cheap ways, has rendered the building of automatic devices almost straightforward and routine. It is no longer a question of whether they can be built, it is a question of whether they are worth building.[111]

Among the practical results are the so-called "Assassin's Mace" weapons, which simply take the same off-the-shelf components used by the state and make better use of them. The term initially appeared in the press in the context of cheap black boxes broadcasting on multiple frequencies and capable of disrupting the expensive American air-to-surface missiles which knock out SAM sites by homing in on radar signals. But it refers, more broadly, to all cases of ephemeralization where a countermeasure can knock out a weapons system costing several orders of magnitude more: "asymmetric power… allow[s] cheap things to undo expensive ones."

> The Pentagon defines the Maces as technologies that might afford an inferior military an advantage in a conflict with a superior power. In this view, an Assassin's Mace is anything which provides a cheap means of countering an expensive weapon. Other examples might include Chinese anti-satellite weapons, which might instantly knock out U.S. space assets, or a conventional ballistic missile, designed to take out a supercarrier and all its aircraft in one hit. It's an interesting contrast to the perspective of the American arms industry, which can end up spending vast amounts countering low-tech, lowcost threats like mines and IEDs.[112]

IV. Systems Disruption

The dynamics of competition between networks and hierarchies lead to what John Robb calls "systems disruption." Networks, despite much smaller resources than those which hierarchies can field, are able to leverage those resources through focused attacks on key nodes or weak points that achieve incapacitation many times greater than the apparent damage.

Because of their agility and the nature of network organization itself, they are able to route around damage much faster than hierarchies.

But perhaps the most important advantage of networks is the way hierarchies respond to attack. Hierarchies typically respond to network attacks by adopting policies that hasten their own destruction. Brafman and Backstrom stated the general principle, as we saw earlier, that "*when attacked, a decentralized organization tends to become even more open and decentralized.*" On the

[111] Murray Bookchin, "Toward a Liberatory Technology," in *Post-Scarcity Anarchism* (Berkeley, Calif.: The Ramparts Press, 1971), pp. 49–50.

[112] David Hambling, "China Looks to Undermine U.S. Power, With 'Assassin's Mace,'" *Wired.com*, July 2, 2009 <www.wired.com>.

other hand, "*when attacked, cen*tralized organizations tend to become even more centralized.*"*[113] *Hierarchies respond to attacks by becoming even more hierarchical: more centralized, more authoritarian, and more brittle. As a result they become even less capable of responding flexibly to future attacks, actively suppressing their own ability to respond effectively.*

Al Qaeda has adopted an explicit strategy of "open-source warfare," using relatively low-cost and low-risk attacks, whose main damage will come not from the attacks but from the U.S. government's reaction to them. In its slick English language e-zine *Inspire*, aimed at an American readership, it announced:

> To bring down America we do not need to strike big… [With the] security phobia that is sweeping America, it is more feasible to stage smaller attacks that involve less players and less time to launch.

Robb, in the blog post from which the quote above was excerpted, cited additional material from *Inspire* on the thinking behind the recent parcel bomb attack:

> Al Qaeda's choice of a demonstration was to use parcel bombs (called Operation Hemorrhage—a classic name for a systems disruption attack). These low cost parcel bombs, were inserted into the international air mail system to generate a security response by western governments. It worked. The global security response to this new threat was massive…
>
> Part of effective systems disruption is a focus on ROI (return on investment) calculations.[114]

And Al Qaeda, in its commentary at *Inspire*, made it clear that ROI calculations were very much on its mind:

> Two Nokia phones, $150 each, two HP printers, $300 each, plus shipping, transportation and other miscellaneous expenses add up to a total bill of $4,200. That is all what Operation Hemorrhage cost us … On the other hand this supposedly 'foiled plot', as some of our enemies would like to call [it], will without a doubt cost America and other Western countries billions of dollars in new security measures.[115]

Kevin Drum gives the example of a passenger flight forced to land— accompanied by a fighter jet—because the crew found a camera on board. The camera turned out to be perfectly normal and harmless, of course. And in any case, the fighter was useless—the plane hadn't been hijacked, and there's nothing it could have done about a bomb on board. So a flight was diverted and a fighter brought in, at enormous cost, for absolutely nothing. What's more, as Drum observes, this suggests a more cost-effective form of "terrorism": "if al-Qaeda were smart, they'd recruit lots of sympathizers who weren't really ready for the whole suicide bomber thing and just have them leave cameras on board airplanes. It would tie up international air travel nicely."[116]

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[113] *Ibid*., p. 139.

[114] John Robb, "Open Source Jihad," *Global Guerrillas*, November 21, 2010 <globalguerrillas.typepad.com>.

[115] Quoted in Daveed Gartenstein-Ross, "Death by a Thousand Cuts," *Foreign Policy*, November 23, 2010 <www.foreignpolicy.com>.

[116] Kevin Drum, "Bomb Scares and Fighter Escorts," *Mother Jones*, August 1, 2012 <www.motherjones.com>.

And in fact Al Qaeda's deliberate strategy is pretty much to goad the U.S. into doing something stupid—usually a safe gamble. Security analyst Bruce Schneier coined the term "Post-Traumatic Stupidity Syndrome" to describe the way organizations overreact to events after the fact.[117]

Al Qaeda spokesman Adam Gadahn explicitly stated in a March 2010 video statement, that the U.S. government's response to "failed" attacks, and the resulting economic damage, was their whole point:

> Even failed attacks can help the jihadists by "bring[ing] major cities to a halt, cost[ing] the enemy billions, and send[ing] his corporations into bankruptcy." Failed attacks, simply put, can themselves be successes. This is precisely why AQAP devoted an entire issue of *Inspire* to celebrating terror attempts that killed nobody.

All the other supposedly "failed" attacks on air travel have been resounding successes, by this standard. From Richard Reed's "shoe bomb" to the alleged liquid explosives in shampoo bottles, to the so-called "underwear bomber" on Christmas 2009, every single failed attack results in an enormously costly and reactive knee-jerk TSA policy—resulting in increased inefficiencies and slowdowns and ever more unpleasant conditions for travelers—to prevent that specific mode of attack from ever happening again. It doesn't matter whether it works or not. So we have to take off our shoes, leave our shampoo and bottled water at home—and most recently, choose between being ogled and groped. Every such new measure amounts to a new tax on air travel, and results in yet another small but significant group of travelers on the margin deciding it's the last straw. After the TSA required checked baggage to be screened, for example, air travel dropped by 6% between 4th Quarter 2002 and 1st Quarter 2003.[118] Air travel on Thanksgiving 2010 was down about a tenth from the figure in 2009, which probably owes something to the public furor over the new body scanners and "enhanced patdowns."

It's only a matter of time till some Al Qaeda cell is smart enough to allow one its agents to get "caught" with explosives in a bodily orifice, and—if TSA reacts according to pattern—the whole civil aviation system dissolves into chaos.

Hierarchies degrade their own effectiveness in another way, as well: by becoming less capable of preventing future attacks. 9/11, as Robb pointed out, was a Black Swan event: i.e., it was a one-off occurrence that could not have been predicted with any degree of confidence, and which is unlikely to be repeated. And most subsequent new kinds of attack, like the "shoe bomber" and "underwear bomber," were of similar nature. Even when there is fairly high quality, actionable intelligence specifically pointing to some imminent threat, like the warning from the underwear bomber's uncle, the system is so flooded with noise that it doesn't notice the signal. Given the very large pool of individuals who are generally sympathetic to Al Qaeda's cause or who fit some generic "terrorist" personality profile, and given the very small number of people who are actively and deliberately involved in planning terror attacks, it's inevitable that genuinely dangerous suspects will be buried 99.9-to-0.1 in a flood of false positives. As Matt Yglesias argues,

> Out of the six billion people on the planet only a numerically insignificant fraction are actually dangerous terrorists. Even if you want to restrict your view to one bil-

[117] Bruce Schneier, "This Week's Overreactions," *Schneier on Security*, December 21, 2012 <www.schneier.com>.

[118] Nate Silver, "The Hidden Costs of Extra Security," *Nate Silver's Political Calculus* (*NYT*), November 18, 2010 <fivethirtyeight.blogs.nytimes.com>

> lion Muslims, the math is the same. Consequently, tips, leads and the like are overwhelmingly going to be pointing to innocent people. You end up with a system that's overwhelmed and paralyzed. If there were hundreds of thousands of al-Qaeda operatives trying to board planes every year, we'd catch lots of them. But we're essentially looking for needles in haystacks.[119]
>
> … the key point about identifying al-Qaeda operatives is that there are extremely few al-Qaeda operatives so (by Bayes' theorem) any method you employ of identifying al-Qaeda operatives is going to mostly reveal false positives…
>
> … If you have a 99.9 percent accurate method of telling whether or not a given British Muslim is a dangerous terrorist, then apply it to all 1.5 million British Muslims, you're going to find 1,500 dangerous terrorists in the UK. But nobody thinks there are anything like 1,500 dangerous terrorists in the UK. I'd be very surprised if there were as many as 15. And if there are 15, that means your 99.9 percent accurate method is going to get you a suspect pool that's overwhelmingly composed of innocent people. The weakness of al-Qaeda's movement, and the very tiny pool of operatives it can draw from, makes it essentially impossible to come up with viable methods for identifying those operatives.[120]

The surveillance state responds to terror attacks by increasing the scope of its data collection in order to anticipate such events in the future. But in hoovering up larger and larger amounts of data, it simply increases the size of the haystack relative to the needle and exacerbates the problem of false positives.

The rising hay-to-needles ratio and the attendant problem of false positives becomes still worse when a growing share of needles remove themselves from the haystack through encryption. The quality of data available to the surveillance state is already skewed fairly heavily by this phenomenon, and every new high-profile story like the Snowden leaks and every successful arrest of a terror cell or crackdown on dissidents will result in further adoption of clandestine communications by groups with reason to fear the state.

The bulk of government surveillance efforts are "aimed at the sort of platforms and communication devices used by the general public—the sort of people who make use of the 'top level' because they actually have nothing to hide." Leonid Bershidsky argues that

> The infrastructure set up by the National Security Agency, however, may only be good for gatheri3ng information on the stupidest, lowest-ranking of terrorists. The Prism surveillance program focuses on access to the servers of America's largest Internet companies, which support such popular services as Skype, Gmail and iCloud. These are not the services that truly dangerous elements typically use.[121]

It's really just common sense that those with something to hide—and anyone who has problems with the existing arrangement of corporate and state power has legitimate reason to fear

[119] Matthew Yglesias, "Too Much Information," *Think Progress*, December 28, 2009 <yglesias.thinkprogress.org>.

[120] Yglesias, "Very Rare Terrorists are Hard to Find," *Think Progress*, December 31, 2009 <yglesias.thinkprogress.org>.

[121] Tim Cushing, "Shallow Surveillance Efforts Like PRISM Will Only Catch The 'Stupidest, Lowest-Ranking Of Terrorists,'" *Techdirt*, June 25, 2013 <www.techdirt.com>.

the government—will be most likely to disappear from the surveillance state's radar. As Australian Crypto Party founder Asher Wolf noted, ""those who want to break the law have already probably learnt cryptography."[122]

All of this together means that attempts to anticipate and prevent terror attacks through the bloated surveillance state, or to prevent attacks through standardized policies like shoe removal and "enhanced patdowns," amount to nothing more than an elaborate—but practically worthless—feel-good ritual. It's the placebo effect—or in Bruce Schneier's memorable phrase, "security theater."

When your system for anticipating attacks upstream is virtually worthless, achieving defense in depth with the "last mile" becomes monumentally important: having people downstream capable of recognizing and thwarting the attempt, and with the freedom to use their own discretion in stopping it, when it is actually made. Since 9/11, all the major failed terror attacks in the U.S. were thwarted by the vigilance and initiative of passengers directly in contact with the situation. The underwear bomber was stopped by passengers who took the initiative to jump out of their seats and take the guy down. And the official response to every failed terror attack has been to further restrict the initiative and discretion of passengers in direct contact with the situation.

But if hierarchies are unable to keep us under adequate surveillance or adequately process the information, they are finding themselves crippled by the effects of *our* gaze. Thomas Knapp describes this asymmetrical relationship:

> There are key asymmetries at work which yield huge advantages to the state's opponents.
>
> Yes, states possess powerful surveillance capabilities, but those capabilities are centrally and hierarchically directed, and accessible only through relatively small and somewhat identifiable forces of operators. And they attempt to seek out and surveill what amount to straw-colored needles in a haystack of seven billion humans.
>
> The world's networked resistance movements are those needles. It's much easier for the needle to see and identify the guy with the pitchfork than it is for the guy with the pitchfork to see and identify the needle. There are a lot more needles than there are guys with pitchforks. And the needles have access to their own set of tools—tools which are cheap, easy to use, and available to nearly anyone (including those aforementioned operators!) who might decide, at any time and for any reason, to become a needle.[123]

Perhaps the best recent example of systems disruption is Wikileaks. A number of commentators have noted that the U.S. government's response to Wikileaks is directly analogous to the TSA's response to Al Qaeda attacks on civil aviation and the RIAA's response to file-sharing. For example Mike Masnick of *Techdirt*, in a juxtaposition of articles that probably wasn't coincidental (even the titles are almost identical), wrote on the same day that "the TSA's security policies are *exactly* what Al Qaeda wants,"[124] and that both the TSA and Wikileaks stories showed

[122] Asher Wolf, "Crypto Parties and How to Protect Your Data," *World News Australia*, 2012 <www.youtube.com>.

[123] Thomas Knapp, "The New Political Asymmetry: Nowhere to Run, Nowhere to Hide," *Center for a Stateless Society*, February 8, 2013 <c4ss.org>.

[124] Mike Masnick, "How The US Response Turns 'Failed' Terrorist Attacks Into Successes," *Techdirt*, December 2, 2010 <www.techdirt.com>.

> how a system based on centralization responds to a (very, very different) distributed threat. And, in both cases, the expected (and almost inevitable) response seems to play directly into the plans of those behind the threat…
>
> … It's what happens when a centralized system, based on locking up information and creating artificial barriers, runs smack into a decentralized, open system, built around sharing. For those who are trying to understand why this whole story reminds me of what's happened in the entertainment industry over the past decade, note the similarities. It's why I've been saying for years that the reason I've spent so much time discussing the music industry is because it was an early warning sign of the types of challenges that were going to face almost every centralized industry or organization out there.[125]

Assange's stated goal is to destroy or degrade the effectiveness of hierarchies, not through direct damage from attack, but by their own responses to attack.

> The more secretive or unjust an organization is, the more leaks induce fear and paranoia in its leadership and planning coterie. This must result in minimization of efficient internal communications mechanisms (an increase in cognitive "secrecy tax") and consequent system-wide cognitive decline resulting in decreased ability to hold onto power as the environment demands adaption.
>
> Hence in a world where leaking is easy, secretive or unjust systems are nonlinearly hit relative to open, just systems. Since unjust systems, by their nature induce opponents, and in many places barely have the upper hand, mass leaking leaves them exquisitely vulnerable to those who seek to replace them with more open forms of governance.[126]

Blogger Aaron Bady describes the double bind into which this imperative puts an authoritarian institution:

> The problem this creates for the government conspiracy then becomes the organizational problem it must solve: if the conspiracy must operate in secrecy, how is it to communicate, plan, make decisions, discipline itself, and transform itself to meet new challenges? The answer is: by controlling information flows. After all, if the organization has goals that can be articulated, articulating them openly exposes them to resistance. But at the same time, failing to articulate those goals to itself deprives the organization of its ability to process and advance them. Somewhere in the middle, for the authoritarian conspiracy, is the right balance of authority and conspiracy.

This means that "the more opaque it becomes to itself (as a defense against the outside gaze), the less able it will be to "think" as a system, to communicate with itself."

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[125] Masnick, "How The Response To Wikileaks Is Exactly What Assange Wants," *Techdirt*, December 2, 2010 <www.techdirt.com>.

[126] Julian Assange, "The Non-Linear Effects of Leaks on Unjust Systems of Governance," December 31, 2006. Reproduced at *Cryptome.org* <cryptome.org>.

> The leak… is only the catalyst for the desired counter-overreaction; Wikileaks wants to provoke the conspiracy into turning off its own brain in response to the threat. As it tries to plug its own holes and find the leakers, he reasons, its component elements will de-synchronize from and turn against each other, de-link from the central processing network, and come undone.[127]

Consider how the U.S. government's "information security" fetish hampered the efforts of the prosecution in the Chelsea Manning case. Email filters tasked with "preventing anything relating to Wikileaks from appearing on a government computer has tripped up military prosecutors, causing them to miss important emails from the judge and defense involved in the case… "[128]

So public embarrassment resulting from the cable leaks is not the end, but the means to the end. The end is not embarrassment, but the authoritarian state's reaction to such embarrassment:

> … Assange is not trying to produce a journalistic scandal which will then provoke red-faced government reforms or something, precisely because no one is all that scandalized by such things any more. Instead, he is trying to strangle the links that make the conspiracy possible, to expose the necessary porousness of the American state's conspiratorial network in hopes that the security state will then try to shrink its computational network in response, thereby making itself dumber and slower and smaller.[129]

The effect, a degrading of synaptic connections within the hierarchical organization, is analogous to the effect of Alzheimer's Disease on the human brain.

It happened after Manning's diplomatic cable dump to Wikileaks; the government tried to

> cut off access to the leaked cables and even to outlets that discussed the leaked cables. At the Air Force, employees' computers were blocked from accessing more than 25 publications, including *The New York Times*, *Le Monde*, *Der Spiegel*, and, yes, *The Guard*ian. *No longer able to prevent information from reaching the public, the government instead attempted to prevent it from reaching itself.*[130]

It happened again after Edward Snowden's leaks of NSA documents.

> The Army admitted Thursday to not only restricting access to *The Guardian* news website at the Presidio of Monterey, as reported in Thursday's *Herald*, but Armywide.
>
> Presidio employees said the site had been blocked since The Guardian broke several stories on data collection by the National Security Agency.
>
> Gordon Van Vleet, an Arizona-based spokesman for the Army Network Enterprise Technology Command… wrote it is routine for the Department of Defense to take

[127] Aaron Bady, "Julian Assange and the Computer Conspiracy: 'To destroy this invisible government,'" *zunguzungu*, November 29, 2010 <zunguzungu.wordpress.com>.

[128] Josh Gerstein, "Blocking WikiLeaks emails trips up Bradley Manning prosecution," *Under the Radar* (Politico.com), March 15, 2012 <www.politico.com>.

[129] Bady, op. cit.

[130] Jesse Walker, "Why a Government That Collects Everyone's Private Data Won't Let Its Employees Access Public Information," *Reason Hit & Run*, June 28, 2013 <reason.com>.

> preventative "network hygiene" measures to mitigate unauthorized disclosures of classified information.[131]

"No longer able to prevent information from reaching the public," *Reason* writer Jesse Walker quipped, "the government instead attempted to prevent it from reaching itself."[132]

The NSA has responded by tightening up internally.

> American leaders say they will avoid future Mannings and Snowdens by segmenting access to information so that individual analysts cannot avail themselves of so much, and by giving fewer security clearances, especially to employees of contractors such as Booz Allen Hamilton, where Snowden worked. This will not work. Segmentation of access runs counter to the whole point of the latest intelligence strategy, which is fusion of data from disparate sources. The more Balkanized the data, the less effective the intelligence. And, as Dana Priest and William Arkin make clear in their important book *Top Secret America*, intelligence agencies are collecting so much information that they have to hire vast numbers of new employees, many of whom cannot be adequately vetted. Since 9/11 the National Security Agency's workforce has grown by a third, to 33,000, and the number of private companies it relies on for contractors has tripled to close to 500. The more people know your secrets, the more likely it is they will leak out.[133]

John Boyd described the effect of degrading an adversary's internal communications in much the same way:

> He who can generate many non-cooperative centers of gravity magnified friction. Why? Many non-cooperative centers of gravity within a system restrict interaction and adaptability of system with its surroundings, thereby leading to a focus inward (i.e., within itself), which in turn generates confusion and disorder, which impedes vigorous or directed activity, hence, by definition, magnifies friction or entropy.
>
> Any command and control system that forces adherents to look inward, leads to dissolution/disintegration (i.e., system becomes unglued).[134]

Noam Scheiber at *The New Republic* argues that Wikileaks "is, in effect, a huge tax on internal coordination. And, as any economist will tell you, the way to get less of something is to tax it. As a practical matter, that means the days of bureaucracies in the tens of thousands of employees are probably numbered."

There are two options for dealing with this. The first, to suppress leaks and tighten up internal control, is probably impossible in the long run. Which leaves the second option:

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[131] Phillip Molnar, "Restricted web access to *The Guardian* is Armywide, officials say," *Monterey Herald*, June 27, 2013 <www.montereyherald.com>.

[132] "Why a Government That Collects Everyone's Private Data Won't Let Its Employees Access Public Information," *op. cit.*

[133] Hugh Gusterton, "Not All Secrets Are Alike," *Bulletin of the Atomic Scientists*, July 23, 2013 <www.thebulletin.org>.

[134] John Boyd "Organic Design for Command and Control" (May 1987), pp. 20–21.

> … to shrink. I have no idea what size organization is optimal for preventing leaks, but, presumably, it should be small enough to avoid wide-scale alienation, which clearly excludes big bureaucracies. Ideally, you'd want to stay small enough to preserve a sense of community, so that people's ties to one another and the leadership act as a powerful check against leaking. My gut says it's next to impossible to accomplish this with more than a few hundred people…
>
> I'd guess that most organizations a generation from now will be pretty small by contemporary standards, with highly convoluted cell-like structures. Large numbers of people within the organization may not even know one another's name, much less what colleagues spend their days doing, or the information they see on a regular basis. There will be redundant layers of security and activity, so that the loss of any one node can't disable the whole network. Which is to say, thanks to Wikileaks, the organizations of the future will look a lot like … Wikileaks.[135]

Recall our discussion above of the "secrecy tax" which self-censorship and internal authoritarianism imposes on hierarchies. Robb, in *Brave New War*, refers to a "terrorism tax" on a city resulting from

> an accumulation of excess costs inflicted on a city's stakeholders by acts of terrorism. These include direct costs inflicted on the city by terrorists (systems sabotage) and indirect costs because of the security, insurance, and policy changes needed to protect against attacks. A terrorism tax above a certain level will force the city to transition to a lower market equilibrium (read: shrink).

In particular, a "terrorism tax" of 6.3 to 7 percent will overcome the laborpooling and transportation savings advantage of concentrating population sufficiently to compel the city to move to a lower population equilibrium.[136]

Similarly, the excess costs imposed on hierarchies by the imperatives of conflict with hostile networks will act as a tax on them, compelling them to move to a lower size equilibrium. And increased levels of disobedience and disregard of government authority, and increased transaction costs of enforcing the law, will function as a disobedience tax. As a result, simply put, the advantages of hierarchy will be outweighed by the disadvantages at a lower size threshold. Large hierarchical institutions, both state and corporate, will become increasingly hollow, unable to enforce their paper claims to authority.

As Vinay Gupta argues, there's a close parallel between what networked efforts like Wikileaks want to do to large hierarchical institutions and what George Kennan envisioned the U.S. doing to the USSR. And both are closely connected to Boyd's concept of the OODA loop.

> The idea: there's an information theoretic model of conflict that runs through Kennan, Ogarkov, Boyd, Marshall, Assange. And that it's dominant.
>
> Kennan writes the Long Telegram, thinks the Soviets will collapse because of crap information processing. Ogarkov sees only battle, agrees.

[135] Noam Scheiber, "Why Wikileaks Will Kill Big Business and Big Government," *The New Republic*, December 27, 2010 <www.tnr.com>.

[136] Robb, *Brave New War*, p. 109.

> Assange paraphrased "we've become like the Soviets, which was Kennan's greatest fear, and we can beat our governments the same way."[137]

In addition, as we will see later, hierarchies experience another kind of internal disunity in response to attack: moral.

Hierarchies are entering a very brutal period of natural selection, in which some will be supplanted from outside by networks, and some (those which survive) will become more network-like under outside pressure. The hierarchies which survive will be those which, faced with pressure from systems disruption, adapt (in Eric Raymond's phrase) by decentralizing their functions and hardening their local components. Hierarchies will face pressure to become less authoritarian internally, as they find themselves competing with networks for the loyalty of their workers. The power of exit will reinforce the power of voice.

David Ronfeldt, summarizing Michel Bauwens' view of the phase transition to p2p society, writes:

> across history, from ancient to modern times, when a new form of organization has arisen in the context of older, stronger forms—"embedded" amid them—it makes sense for "hybrids" to emerge during phase transitions. Such hybrids combine actors from an era's "dominant mode" of organization with actors representing an era's emerging mode, in ways that benefit all partners to the hybrid, but that may also help subvert the old order and generate the new one. For the looming phase transition, this crucial interim role will be played by "netarchical capitalists"—e.g., Google (?)—who are willing to work with P2P commoners. Thus, in this view, phase transitions depend not so much on struggles between elites and masses, as on innovative alliances between break-away segments from the old system and adaptive segments from the emergent one…[138]

So some large-scale infrastructures of the present corporate economy may take on a progressively network-like character, until they eventually so closely resemble networks as to make no real difference.

This natural selection process is inevitable, even without intentionally malicious attacks by networks on hierarchies. Raymond argues that the prevailing bureaucratic, hierarchical institutions of the 20th century were more or less workable, and capable of functioning based on Weberian rules and "best practices," so long as the complexity of the problems they faced was not insupportable. Even in those days, of course, there were significant efficiency tradeoffs in return for control. In James Scott's terminology, rendering the areas managed by hierarchies "legible" to those at the top entailed a level of abstraction and oversimplification that severely limited the functionality of the leadership's understanding of the world. "The categories that they employ are too coarse, too static, and too stylized to do justice to the world that they purport to describe."[139]

And the process of rendering the functioning of the managed areas legible, through standard operating procedures and best practices, also entailed disabling or hindering a great deal of the

[137] Vinay Gupta (as @leashless) on Twitter, 05:42 PM—09 Feb 13 <twitter.com>; 05:42 PM—09 Feb 13 <twitter.com>; 05:44 PM—09 Feb 13 <twitter.com>.

[138] David Ronfeldt, "Bauwens' 'partner state' (part 3 of 3) … vis à vis TIMN," *Visions From Two Theories*, October 19, 2011 <twotheories.blogspot.com>.

[139] James C. Scott, *Seeing Like a State*, p. 262.

human capital on which an organization depended for optimal functioning. The proper functioning of any organization depends heavily on what Friedrich Hayek called "distributed knowledge," and what Michael Polanyi called "tacit knowledge." It is direct, practical knowledge of the work process, which cannot be reduced to a verbal formula and transmitted apart from practical experience of the work. It is also practical knowledge of the social terrain within the organization, and the network of personal relationships it's necessary to navigate in order to get anything done. Scott uses the Greek term *metis*, as opposed to *techne*. Bureaucratic micromanagement, interference, and downsizing, between them, decimate the human capital of the organization[140]—much like the eradication of social memory in elephant herds where a large enough portion of the elderly matriarchs have been destroyed to disrupt the transmission of social mores.

For all these efficiency losses, from the hierarchy's perspective they are necessary trade-offs for the sake of acquiring and maintaining power. Reality must be abstracted into a simple picture, and specialized knowledge known only to those actually doing the work must be eradicated—not only to make the organization simple enough to be manageable by a finite number of standard rules, but because the information rents entailed in tacit/distributed knowledge render the lower levels less easily milked.

The state, like a demon, is bound by the laws and internal logic of the form it takes. When a segment of the bureaucracy is captured by its own ideological selfjustication, or courts by the letter of the law they pretend to enforce, they can be used as a weapon for monkey-wrenching the larger system. Bureaucrats, by following the letter of policy, often engage in de facto "work-to-rule" against the larger system they serve.

The state, like any authoritarian hierarchy, requires standing rules that restrict the freedom of subordinates to pursue the institution's real purpose, because it can't trust those subordinates. The state's legitimizing rhetoric, we know, conceals a real exploitative function. Nevertheless, despite the overall functional role of the state, it needs standard operating procedures to enforce predictable behavior on its subordinates.

And once subordinates are following those rules, the state can't send out dogwhistles telling functionaries what "real" double-super-secret rules they're "really" supposed to follow, or to supplement the countless volumes of rulebooks designed to impose predictability on subordinates with a secret memo saying "Ignore the rulebooks." So, while enough functionaries may ignore the rules to keep the system functioning after a fashion, others pursue the letter of policy in ways that impair the "real" mission of the state.

Unlike the state and other authoritarian institutions, self-organized networks can pursue their real interests while benefiting from their members' complete contribution of their abilities, without the hindrance of standard operating procedures and bureaucratic rules based on distrust. To put it in terms of St. Paul's theology, networks can pursue their interests single-mindedly without the concupiscence— the war in their members—that weakens hierarchies.

So we can game the system, sabotaging the state with its own rules—what's called "working to rule" in labor disputes.

But today, the complexity of problems faced by society has become so insupportable that hierarchies are simply incapable of even passably coping with it. As Scott points out, the policies of bureaucratic hierarchies have always been made by people who "ignore the radical contingency

[140] *Ibid*., pp. 334–337.

of the future" and fail to account for the possibility of incomplete knowledge.[141] But contingency and incompleteness have increased exponentially in recent years, to levels with which only a stigmergic organization can cope.

Raymond argues that the level of complexity in American society, in the mid-20th century, was such that it could be managed—if not effectively, at least more or less adequately—by the meritocratic managerial classes using WeberianTaylorist rules to govern large bureaucratic organizations. But if Gosplan and Bob McNamara could manage to stumble along back then, the level of unsupportable complexity in recent decades has outstripped the ability of hierarchical, managerial organizations to manage.[142]

Meanwhile, hierarchies' responses to network attacks are self-destructive in another way besides the "secrecy tax." They undermine their own perceived legitimacy in the eyes of the public. For one thing, they undermine their moral legitimacy by behaving in ways that directly contradict their legitimizing rhetoric. As Martin van Creveld argued, when the strong fight the weak they become weak— in large part because the public can't stomach the knowledge of what goes into their sausage. The public support on which the long-run viability of any system of power depends is eroded by loss of morale.

> The reason is that when the strong are seen beating the weak (knocking down doors, roughing up people of interest, and shooting ragtag guerrillas), they are considered to be barbarians. This view, amplified by the media, will eventually eat away at the state's ability to maintain moral cohesion and drastically damage its global image.[143]

We saw this with the public reaction to Abu Ghraib and Guantanamo. And every video of an Israeli bulldozer flattening a Palestinian home with screaming mother and children outside undermines the "beleaguered Israeli David vs. Arab Goliath" mystique on which so much third party support depended. The "David vs. Goliath" paradigm is replaced by one of the Warsaw Ghetto vs. the Nazis, with the Israelis in the role of bad guys.

But more importantly, networked resistance undermines the main source of legitimacy for all authoritarian institutions, which is their "plausible premise"— their ability to deliver the goods in return for loyalty and compliance. Every attack against a hierarchy, to which it demonstrates its inability to respond effectively, undermines its grounds for expecting loyalty. It's one thing to sell one's soul to the Devil in return for a set of perks. But when the Devil is unable to deliver the goods, he's in trouble.

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[141] *Ibid*., pp. 343–344.

[142] Eric Raymond, "Escalating Complexity and the Collapse of Elite Authority," *Armed and Dangerous*, January 5, 2010 <esr.ibiblio.org>.

[143] John Robb, *Brave New War: The Next Stage of Terrorism and the End of Globalization* (Hoboken: John Wiley & Sons, 2007), p. 28.

3. Networks vs. Hierarchies: The EndGame

I. The Transition from Hierarchies to Networks

To the extent that hierarchies and networks are the characteristic social formations of two successive social systems, the process of transition—like those from the Western Roman Empire to feudalism, and from feudalism to capitalism—itself becomes a subject for study.

It's fairly common to observe that peer-to-peer organization is the nucleus, or dominant mode of production, in a new post-capitalist social formation. That's the premise of autonomists like Antonio Negri and Nick Dyer-Witheford, as well as the Marxist Oekonux email discussion list: that open-source, commons-oriented peer production is the kernel of a post-scarcity communist society.

The control of information is the central axis of struggle over the control of production; giant corporations control of the global economy, more than anything, depends on enclosure of information. And, as Alistair Davidson argues, the free culture or hacker communities—which base their struggle against corporate power on the struggle for freedom of information—is the nucleus of the future resistance.

> Despite blanket media coverage of Wikileaks and Julian Assange, there has been little discussion of the fact that Assange is merely one leader within a large and complicated social movement. The better analyses have found it interesting that the Swedish Pirate Party are aiding Wikileaks; some note links to the German Chaos Computer Club. But only "geeks" and "hackers" (technology workers) are aware that all of these organisations are members of the same movement.
>
> This social movement, which has been termed the "free culture movement", has a thirty year history. It incorporates elements reminiscent of earlier workers' movements: elements of class struggle, political agitation, and radical economics. The movement's cadre, mainly technology workers, have been locked in conflict with the ruling class over the political and economic nature of information itself.[1]

This new conflict within capitalism—"between the path of greatest production (infinite copying) and the existing source of profits (artificial scarcity)"—was the latest example of Marx's conflict between old and new modes of production.[2]

Stallman's free software movement illustrates what peer production means as a new mode of production: "information workers… owned their means of production and had access to the means of distribution—by the 1980s, all they needed to bypass capital entirely was a computer and a phone line."[3]

[1] Alistair Davidson, "Wikileaks, Karl Marx and You," *Moh Kohn*, January 7, 2011 <mohkohn.wordpress.com>.
[2] *Ibid*.
[3] *Ibid*.

Davidson sets aside the facile debate over whether the Internet was created by the state or the market, and quotes Steven Johnson that it is actually the first largescale artifact of peer production:

> So was the Internet created by Big Government or Big Capital? The answer is: Neither.
>
> Peer networks break from the conventions of states and corporations in several crucial respects. They lack the traditional economic incentives of the private sector: almost all of the key technology standards are not owned by any one individual or organization, and a vast majority of contributors to open-source projects do not receive direct compensation for their work. (The Harvard legal scholar Yochai Benkler has called this phenomenon "commons-based peer production.") And yet because peer networks are decentralized, they don't suffer from the sclerosis of government bureaucracies.[4]

Writers like James Livingston and Michel Bauwens have explicitly drawn on previous transitions as models for the hierarchy-network transition. Although our political culture, both Right and Left, envisions a post-capitalist transition through the lens of the French and Russian revolutions—abrupt, insurrectionary, and equated largely to the seizure of the state—there's no reason to assume it will be. It could just as easily be a decades-long, relatively gradual process like the decay of the Western Roman Empire and of feudalism. Livingston writes:

> What happens when we stop looking for socialism in all the wrong places?
>
> Start here. When we think about the transition from feudalism to capitalism, we take the long view—we scan the four centuries from 1400 to 1800, looking for signs of fundamental but incremental change. To be sure, we assume that the great bourgeois revolutions of the seventeenth, eighteenth, and nineteenth centuries were both symptoms and causes of this transition… Still, we know these early modern movements can't be compared to the communist parties that created state socialism in twentiethcentury Russia, China, and Cuba, because in these more recent instances, selfconscious revolutionaries organized workers and peasants to overthrow capitalism and create socialism…
>
> In short, capitalism was the unintended consequence of bourgeois revolutions, whereas socialism has been the avowed purpose, or at least a crucial component, of every revolution since 1911…
>
> … We don't measure the transition from feudalism to capitalism only by assessing the social origins and political-economic effects of bourgeois revolutions—we'd have to be daft to do so. Instead we ask when, how, where, and why social relations were transformed, over many years, so that a new mode of production and new modes of consciousness, emerged to challenge (if not supplant) the old. Or rather… , we ask *when* capitalism became the hegemonic mode in a mongrel social formation that

[4] Johnson, "We Built That," quoted in Alistair Davidson, "Peer Production: A New Economic Dawn?" *Moh Kohn*, September 25, 2012 <mohkohn.wordpress.com>.

> contained fragments of a residual feudalism and harbingers of a precocious socialism. We don't think that capitalism was created overnight by revolutionary parties…
>
> Why, then, would we look for evidence of socialism only where a state seized by radicals of the Left inaugurates a dictatorship of the proletariat? Or, to lower the rhetorical volume and evidentiary stakes, why would we expect to find socialism only where avowed socialists or labor parties contend for state power? We should instead assume that socialism, like capitalism, is a cross-class cultural construction, to which even the bourgeoisie has already made significant contributions—just as the proletariat has long made significant contributions to the cross-class construction we know as capitalism. What follows?…
>
> We typically assume that socialism is something signified by state command of civil society, rather than the other way around. Why? Why do we assume, in other words, that markets and socialism don't mix, that private enterprise and public goods— commutative and distributive justice—are always at odds? And why do we think, accordingly, that socialism must repudiate liberalism and its attendant, modern individualism, rather than think, with Eduard Bernstein and Sidney Hook, that socialism is their rightful heir?
>
> Let's uproot our assumptions, in keeping with our radical calling. Let's look for the evidence of socialism in the same places we've always looked for the evidence of capitalism: in changing social relations of production as well as legislative acts and political actions, in the marketplace of ideas as well as porkbellies, in everyday life and popular culture as well as learned assessments of the American Dream, in uncoordinated efforts to free the distribution of information and music—the basic industries of a postindustrial society—from the "business model" quotes of the newspapers and record companies as well as social movements animated by anticapitalist ideas…[5]

The 500-odd-year-old capitalist system, like previous historic systems,is not a monolithic unity, but a collection of mutually interacting social formations—some in ascendancy, some in decline. It follows that the supplanting of capitalism need not involve a dramatic rupture on the part of a monolithic unity of progressive forces. As Eugene Holland argues,

> the requirement of such a radical systemic break is necessary only when you conceive of a society or mode of production as a total system in the first place… Construing such elements in terms of dominant, residual, and emergent improves utopian prospects considerably, inasmuch as there would presumably be positive elements to affirm (the "emergent" ones) alongside the negative ones to critique and reject (presumably all the "dominant" ones)…[6]

Ultimately the situation is resolved when the forces of the old order attempt—and fail—to thwart the transition.

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[5] James Livingston, "How the Left Has Won," *Jacobin*, August 2012 <jacobinmag.com>.

[6] Eugene Holland, *Nomad Citizenship: Free-Market Communism and the Slow-Motion General Strike* (Minneapolis: University of Minnesota Press, 2011), p. 169.

> … our current situation is propitious … because the constituent power of the multitude has matured to such an extent that it is becoming able, through its networks of communication and cooperation, through its production of the common, to sustain an alternative democratic society on its own. Here is where the question of time becomes essential. When does the moment of rupture come? … Revolutionary politics must grasp, in the movement of the multitudes and through the accumulation of common and cooperative decisions, the moment of rupture… that can create a new world.[7]

But however abrupt and dramatic the final rupture may seem, it is only the culmination of a long preexisting process of "building the structure of the new society within the shell of the old."

> Following 1640, 1776, 1789, 1848, 1917, and 1949, we have been fixated on the image of revolution—of punctual, violent, wholesale transformation—as the most desirable (and often the only acceptable) mode of social change. But revolution is not the only mode of social transformation: feudalism, for instance, arose piecemeal following the decline of the Roman Empire, in a process that took centuries to complete… Immediate and total social transformation of the revolutionary kind is not absolutely necessary for a number of reasons, not the least of which is that capitalism is not a total system to begin with. Alternatives are not only always possible, they in fact already exist. Inasmuch as the secret of so-called primitive accumulation is that it is actually first and foremost a process of dispossession—ongoing as well as primitive—one answer proposed by affirmative nomadology to the question of what is to be done is thus to initiate a slow-motion general strike. Seek out actually existing alternative modes of selfprovisioning—they are out there, in Remarkable number and variety—and also develop new ones; walk away from dependence on capital and the State, one step, one stratum, at a time, while at the same time making sure to have and continually develop alternative practices and institutions to sustain the movement. To effectively replace capitalism and the State, a slow-motion general strike must indeed become-general or reach critical mass or bifurcation point eventually, but it doesn't have to be all encompassing right from the beginning or produce wholesale social change all at once: it can start off small and/or scattered and become-general over time (in much the same way that capitalism starts small and gradually becomes-necessary, in Althusser's view).
>
> Hegemonic thinking (i.e., thinking that social change is always and only a matter of hegemony), [Richard] Day argues, leads to the double impasse of "revolution or reform": given its totalizing view of society, one must either seek the total and utter demolition of that society through revolution or settle for piecemeal reforms that ultimately have no decisive effect on it. But society is not a totality: it is a contingent assemblage, or assemblage of assemblages. Nomad citizenship thus proposes, in Day's terms, a variety of "small-scale experiments in the construction of alternative modes of social, political and economic organization [as] a way to avoid both waiting

[7] Michael Hardt and Antonio Negri, *Multitude: War and Democracy in the Age of Empire* (New York: Penguin, 2004), p. 357.

> forever for the Revolution to come and perpetuating existing structures through reformist demands." For Day, finally, as for affirmative nomadology, what is Important is to create alternatives to abject dependency on capital and the State…[8]
>
> … [T]he key difference between every ordinary strike and the general strike is that while the former makes demands on capitalist employers, the latter simply steps away from capital altogether and—if it is to succeed—moves in the direction of other form(s) of self-provisioning, enabling the emergence of other form(s) of social life—for example, nomad citizenship and free-market communism…
>
> [T]he slow-motion general strike is, in an Important sense, neither reformist nor revolutionary. It does not employ violence in direct confrontation with the capitalist State and is therefore unlikely to provoke State violence in return, yet neither does it rely on and thereby reinforce the existing practices and institutions of capital and the State…
>
> … Vital to the success of a slow-motion general strike is its sustainability: the unrelenting process of dispossession of capital known as *primitive accumulation* must actually be reversed…[9]

John Holloway argues similarly that the post-capitalist transition will be an "interstitial process" like that from feudalism to capitalism.[10]

The post-capitalist class formation will be one in which commons governance, horizontal networks and p2p organization will replace the corporate-state nexus as the core, with markets and administration persisting in reduced, peripheral form and characterized by their relationship to networks. As Michel Bauwens argues:

> emerging peer production has a core of non-market mechanisms, with markets operating around the commons where the knowledge, code or design is deposited; moreover, I believe that the mutual coordination and stigmergy that is characteristic of immaterial production projects, will expand to material production through open supply chains and open book management, further diminishing the relative part of market dynamics.[11]

Commons-based peer production, as an alternative to both the capitalist corporation and the state, enables

> the direct social production of use value, through new life practices that are largely outside the control of capital, and with means of production which have been socialized to a very significant degree. These new processes are post-capitalist rather than

[8] Eugene Holland, *Nomad Citizenship*, pp. 149–150.

[9] *Ibid*., pp. 155–156.

[10] Jerome Roos, "Talking About a Revolution With John Holloway," *John Holloway*, April 13, 2013 <www.johnholloway.com.mx>.

[11] Michel Bauwens, "Do we need p2p to help markets deal with complexity, or does p2p get us beyond markets?" *P2P Foundation Blog*, December 12, 2012 <blog.p2pfoundation.net>. Reproduced from a Facebook debate with John Robb, Franz Nahrada, Fabio Barone and Chris Cook.

> capitalist, in the sense that they no longer need any specific role of capital for their reproduction.[12]

David Ronfeldt, in the context of his TIMN (Tribes, Institutions, Markets and Networks) framework, describes it as "coexistent layering."[13] Elsewhere, writing of Bauwens' conceptual schema, Ronfeldt says that the ascendancy of networks and p2p organization will disproportionately benefit and strengthen civil society, and profoundly alter older state and market institutions forced to accommodate themselves to a society in which the network form increasingly shapes the character of all functions.[14]

According to Michael Hardt and Antonio Negri, the relationship between the dominant class is the opposite of that Hobbes described at the dawn of the modern era. The "nascent bourgeoisie"

> was not capable of guaranteeing social order on its own; it required a political power to stand above it… The multitude, in contrast to the bourgeoisie and all other exclusive, limited class formations, is capable of forming society autonomously…[15]

Another thing to keep in mind is that the large-scale transition may take place as a comparatively sudden phase change, but only after the ground has been prepared by a prolonged Gramscian "war of position" in civil society. As Jay Ufelder puts it, "revolutionary situations [are] an emergent property of complex systems."

> One of the features of complex systems is the possibility of threshold effects, in which seemingly small perturbations in some of the system's elements suddenly produce large changes in others. The fragility of the system as a whole may be evident (and therefore partially predictable) from some aspects of its structure, but the timing of the revolutionary moment's emergence and the specific form it will take will be impossible to anticipate with any precision.
>
> In this version of politics, the emergence of rival organizations is as likely to be a consequence of the system's failure as a cause of it.[16]

New Wine in Old Bottles. Lewis Mumford, in *Technics and Civilization*, coined the term "cultural pseudomorph" to describe a phenomenon in which fundamentally new production technologies, whose ideal and most efficient employment would have been in an entirely new institutional framework, were instead coopted and enclosed in the preexisting institutional framework. His paradigmatic example was what he called "neotechnic" production technology—most notably electrically powered machinery which, unlike the case with the old steam-powered factories, could be situated without regard to the location of a prime mover. This opened up the

[12] Bauwens, "Interview on Peer to Peer Politics with Cosma Orsi," *P2P Foundation Blog*, April 10, 2008 <blog.p2pfoundation.net>.

[13] David Ronfeldt, "Q's & A's about "TIMN in 20 minutes" (2nd of 7): nature of the forms and their relationships," *Visions From Two Theories*, October 8, 2012 <twotheories.blogspot.com2nd-of-7.html>.

[14] Ronfeldt, "Updates about missing posts (3rd of 5): Bauwens' 'partner state' (part 2 of 3) … vis à vis TIMN," *Visions From Two Theories*, April 3 <twotheories.blogspot.com>.

[15] Michael Hardt and Antonio Negri, *Multitude: War and Democracy in the Age of Empire* (New York, 2004), xvii-xviii.

[16] Jay Ufelder, "ISO Revolution, Organized Opposition Not Req'd," *Dart-Throwing Chimp*, September 7, 2012 <dart-throwingchimp.wordpress.com>.

possibility—also noted by Kropotkin in *Fields, Factories and Workshops*—of a decentralized manufacturing economy in which machines could be scaled to the flow of production and located in small shopt at the point of consumption. Unfortunately the constellation of class and institutional interests built around the old paleotechnic economy of coal and steam was sufficiently powerful to instead coopt the new technology into the old centralized framework of Dark Satanic Mills.

In much the same way, the transition period from hierachies to networks is characterized by the attempts of hierarchical institutions to coopt the potential of networked organization into their own preexisting framework. As Andy Robinson describes it:

> … [E]ver since the 70s the system has been trying to find hybrids of network and hierarchy which will harness and capture the power of networks without leading to "chaos" or system-breakdown. We see this across a range of fields: just-in-time production, outsourcing and downsizing, use of local subsidiaries, contracting-out, Revolution in Military Affairs, full spectrum dominance, indirect rule through multinational agencies, the Nixon Doctrine, joined-up governance, the growing importance of groups such as the G8 and G20, business networks, lifelong learning, global cities, and of course the development of new technologies such as the Internet…
>
> In the medium term, the loss of power to networks is probably irreversible, and capital and the state will either go down fighting or create more-or-less stable intermediary forms which allow them to persist for a time. We are already seeing the beginnings of the latter, but the former is more predominant. The way I see the crisis deepening is that large areas will drift outside state and capitalist control, integrated marginally or not at all (this is already happening at sites such as Afghanistan, NWFP, the Andes, Somalia, etc., and in a local way in shanty-towns and autonomous centres). I also expect the deterritorialised areas to spread, as a result of the concentration of resources in global cities, the ecological effects of extraction, the neoliberal closing of mediations which formerly integrated, and the growing stratum of people excluded either because of the small number of jobs available or the growing set of requirements for conformity. Eventually these marginal spaces will become sites of a proliferation of new forms of living…[17]

Hybrid efforts include attempts by corporate business enterprises to incorporate network elements through such fads as the Wikified Firm and Enterprise 2.0, while using artificial property rights to coopt the networks for their own purposes. They also include projects like "network-centric warfare"—an attempt by the American conventional military establishment to coopt the advantages of networked guerrilla organizations like Al Qaeda Iraq.

Unfortunately for them, in both military and business affairs, such attempts usually fail despite the understanding of their designers because their implementation depends on traditional hierarchies that are jealous of threats to their prerogatives. We see the same result in all areas of life, when hierarchies attempt to incorporate network elements. No matter how well the theorists understand the need to become more network-like, the people actually running the hierarchies are simply unable to keep their hands off.

In the business case, there's an intense Darwinian selection process going on. A small minority of corporations may become network-like enough to survive. But if they find themselves

[17] Andy Robinson, "[p2p research] Berardi essay," *P2P Research email list*, May 25, 2009 <listcultures.org>.

still alive at the end of the transition, they will likely have become so network-like as to be p2p organizations for all intents and purposes, regardless of what legacy name appears on their letterhead. The great majority of corporate hierarchies which fail to transform themselves into networks—which will likely be the vast majority of large corporations—will die.

There are a thousand and one management theory fads out there about flattening hierarchies, self-management, empowerment, and all the rest of it. To give some idea of how hollow it is Bill Gates himself, back in 2004, celebrated the use of blogs as an internal collaborative tool within the corporation.[18] But because the theories are put into practice by bosses, in every case they wind up looking like warmed-over Taylorism.

The problem is that, even if it's necessary to incorporate network methods into a corporate hierarchy, it's not sufficient. According to Harold Jarche, enterprise social tools are necessary to

> enable faster feedback loops inside the organization in order to deal with connected customers, suppliers, partners, and competitors. It takes a networked organization, staffed by people with networked mindsets, to thrive in a networked economy.

But even so, the simulated networked organization inside the corporation isn't as agile as a genuine self-organized network.

> Enterprise knowledge sharing will never be as good as what networked individuals can do. Individuals who own their knowledge networks will invest more in them. I think this means that innovation outside of organizations will continue to evolve faster than inside.[19]

Euan Simple describes how the failure of corporate management to grasp what Enterprise 2.0 is about will sabotage efforts to implement it.

- They'll think it's about technology.
- They're not prepared to deal with the friction generated from allowing their staff to connect.
- They'll assimilate it into business as usual.
- They'll try to do it in a way that 'maximises business effectiveness' without realising that it calls for a radical shift in what's seen as effective.
- They'll grind down their early adopters until they give up.
- They'll get fleeced by the IT industry for over-engineered, under-delivering solutions, thinking that Enterprise 2.0 failed to live up to its promise and move on to the next fad…
- It is individuals, not companies who do Enterprise 2.0.[20]

[18] "Gates Backs Blogs for Businesses," *BBC News*, May 21, 2004 <news.bbc.co.uk>.

[19] Harold Jarche, "The Knowledge-Sharing Paradox," *Life in Perpetual Beta*, March 24, 2013 <www.jarche.com>.

[20] Alan Moore, *No Straight Lines: Making Sense of Our Non-Linear World* (Cambridge, England: Bloodstone Books, 2011), p. 90.

In the military case, official military doctrines for fourth-generation warfare like the U.S. DOD's "network-centric warfare" are aimed at copying the resilience and flexibility of networked adversaries like Al Qaeda. This means, according to John Robb, taking advantage of the possibilities new communications technology offers to "enable decentralized operation due to better informed people on the ground."[21]

Network-centric warfare dates to a 1998 article by Vice Admiral Arthur Cebrowski and John Garstka, and was described not long afterward as

> an information superiority-enabled concept of operations that generates increased combat power by networking sensors, decision makers, and shooters to achieve shared awareness, increased speed of command, higher tempo of operations, greater lethality, increased survivability, and a degree of self-synchronization. In essence, NCW translates information superiority into combat power by effectively linking knowledgeable entities in the battlespace.[22]

The DOD's "Transformation Planning Guidance" in April 2003 called for transforming US military forces into

> Information age military forces [that] will be less platform-centric and more networkcentric. They will be able to distribute forces more widely by increasing information sharing via a secure network that provides actionable information at all levels of command. This, in turn, will create conditions for increased speed of command and opportunities for self-coordination across the battlespace.[23]

But no matter how sensible (or even brilliant) the doctrines churned out by 4GW experts in the academies, as applied by the military bureaucracy they mean using the technology instead "to enable more complicated and hierarchical approval processes—more sign offs/approvals, more required processes, and higher level oversight."

> Risk mitigation trumps initiative every time. Careers are more important than victory. Risk evaluation moves upward in the hierarchy. Evaluation of risk takes time, particularly with the paucity of information that can be accessed at positions removed from the conflict.[24]

According to Thomas Hammes, the DOD guidance notwithstanding the actual process of information distribution within the military bureaucracy was still far different in 2004.

> Our advanced information systems are still tied to an outdated, hierarchical organization that slows the dissemination of information. Although specific high-priority commands receive near real-time intelligence, most commanders must submit their

[21] John Robb, "Fighting an Automated Bureaucracy," *Global Guerrillas*, December 8, 2009 <globalguerrillas.typepad.com>.

[22] "The Road to Riches," *The Economist*, Millennium special edition, January 1, 1000December 31, 1999; quoted in Thomas Hammes, *The Sling and the Stone: On War in the 21st Century* (Saint Paul, Minn.: Zenith Press, 2004), p. 7.

[23] Quoted in Hammes, pp. 8–9.

[24] Robb, "Fighting an Automated Bureaucracy."

> intelligence requirements up the chain of command. Each level validates, consolidates, and prioritizes the requests, which are then fed through the centralized staff system to task the assets that will actually collect against the requests. The information is collected, passed to another section for analysis, then put in the form of a usable product, and finally disseminated through the same cumbersome system. Thus, the premier benefit of the Information Age—immediate access to current intelligence—is nullified by the way we route it through our vertical bureaucracy.
>
> Not only does our bureaucracy delay the distribution of the intelligence products we develop, it actively discourages subordinate units from tapping into the information themselves, via the Internet. The result is a limiting of the variety and timeliness of the information available to our decision makers, from the strategic to the tactical levels.[25]

And it still hadn't changed much in 2009. Afghan War veteran Jonathan Vaccaro, in a *NYT* op-ed, describes the bureaucratic nightmare in detail:

> … Our answer to Afghans seeking help was: "I can't come today or tomorrow, but maybe next week. I have several bosses that I need to ask for permission."…
>
> In my experience, decisions move through the process of risk mitigation like molasses. When the Taliban arrive in a village, I discovered, it takes 96 hours for an Army commander to obtain necessary approvals to act. In the first half of 2009, the Army Special Forces company I was with repeatedly tried to interdict Taliban. By our informal count, however, we (and the Afghan commandos we worked with) were stopped on 70 percent of our attempts because we could not achieve the requisite 11 approvals in time.
>
> For some units, ground movement to dislodge the Taliban requires a colonel's oversight. In eastern Afghanistan, traveling in anything other than a 20-ton mineresistant ambush-protected vehicle requires a written justification, a risk assessment and approval from a colonel, a lieutenant colonel and sometimes a major. These vehicles are so large that they can drive to fewer than half the villages in Afghanistan. They sink into wet roads, crush dry ones and require wide berth on mountain roads intended for donkeys. The Taliban walk to these villages or drive pickup trucks.
>
> The red tape isn't just on the battlefield. Combat commanders are required to submit reports in PowerPoint with proper fonts, line widths and colors so that the filing system is not derailed…
>
> Communication with the population also undergoes thorough oversight. When a suicide bomber detonates, the Afghan streets are abuzz with Taliban propaganda about the glories of the war against America. Meanwhile, our messages have to inch through a press release approval pipeline, emerging 24 to 48 hours after the event, like a debutante too late for the ball.[26]

[25] Hammes, *The Sling and the Stone*, pp. 192–193.

[26] Jonathan Vaccaro, "The Next Surge—Counterbureaucracy," *New York Times*, December 7, 2009 <www.nytimes.com>.

The internal opacity and paralysis of the military's information culture only became worse after the leaks by Manning and Snowden.

The information culture of Al Qaeda, in contrast, is classically stigmergic and permissionless, and characterized by individual super-empowerment based on freely available open platforms:

> Potential enemies are not hampered by an entrenched bureaucracy. They are free to exploit the full range of commercially available information technology. They can use the rapidly expanding worldwide information system to collect information, store it on web sites, collaborate on analysis, and direct attacks on our interests…
>
> … Remember that much of the commercial technology available today is an outgrowth of the military systems designed specifically to collect and defend against conventional forces. Even small cells can exploit the information revolution to collect against our forces. A group trying to track U.S. forces can watch CNN or a dozen other news agencies for live footage of the movement of our forces from home bases—and often even in theater. They can tap into a wide variety of commercial satellite imaging services—many with resolution of less than one meter. These photos can be used to track our ships, identifying changes in our ports, as well as arrival and assembly areas…
>
> In addition they can get worldwide weather reports. They can conduct online research in port usage, shipping insurance rates (to indicate perception of threat by business), gauge market reaction to current events, and even watch our leaders express their positions to members of the media. Anyone with a computer, a modem, and a credit card is limited only by his own imagination and intelligence in developing information from the political level to the tactical…
>
> Even more important for using 4GW techniques, today's terrorists are organized as networks rather than as hierarchies. This means that each entity can use the network simultaneously, searching for and receiving the information he is interested in without having to work through a bureaucracy. Ask yourself which you would rather have as a tactical commander: a one-meter resolution image from a commercial source hours after you request it or a high-resolution image from one of our national systems days after you request it. Even more important, the insurgent knows what he can and cannot get. The U.S. commander has to submit his request and wait to see if it can be filled— further delaying his decision cycle…
>
> … [A]n adept terrorist simply uses the existing networks created by the information-based economy…[27]

The management fad of "disruptive innovation" in recent years is a good illustration of the problems facing hierarchies that try to change themselves internally to adapt to a networked world. It should really be no surprise that established corporations that hire a Chief Disruption Officer and give Disruption badges and coffee mugs to everybody at their management retreat would totally fuck it up. Corporations always fail when they try to incorporate good ideas into the framework of a managerial hierarchy. They do so because they're putting new wine into new

[27] Hammes, *The Sling and the Stone*, pp. 195–198.

bottles, and because the kinds of policies that make for agility and resilience are directly at odds with the privileges and power of the managerial hierarchy.

But more than that, managerial hierarchies are unable to anticipate disruptive innovation because disruptive innovation is a black swan. Nobody can anticipate a black swan. You can only be decentralized enough, with enough empowerment at the network's end-points, to react to it when it happens. Hierarchies, on the other hand, are all about standard operating procedures to deal with an artificially limited range of variation, and fighting the last war. Hierarchies only work in a stable external environment, with the stability usually resulting from society-wide controls imposed from above.

Attempts to simulate networked forms within a hierarchical structure are usually futile compared to building the real thing outside them for the same reason that lobbying is futile compared to direct action. Initiatives like network-centric warfare and Enterprise 2.0 require enormous efforts to change the policies and internal culture of hierarchical institutions, and to persuade entrenched bureaucracies to do things differently against their very real material interests.

For example, Thomas Hammes's agenda for dealing with Fourth Generation Warfare requires "a major shift in culture within the government." It will also require large-scale bureaucratic restructuring towards an organization built around horizontal collaboration and sharing rather than Weberian command and control. These things "will likely take a generation to accomplish."[28]

On the other hand a stigmergic organization like Al Qaeda is permissionless.

So the point is, any established corporation that doesn't try to structure itself to survive in an environment of disruptive innovation will certainly go belly-up. But almost every corporation that tries to do so will fail anyway. Attempts to simulate networks within a hierarchy—Enterprise 2.0, the Wikified Firm, the U.S. military's Fourth Generation Warfare doctrine—will usually be supplanted by the real thing.

Nevertheless, even when such attempts fail and states and corporations simply collapse, efforts at fomenting network culture within them may have positive results. Tthe most important outcome will be the horizontal functional connections (including with state personnel working within the belly of the beast) that persist after the state itself decays.

Interstate Conflict as a Catalyst. During the overall transition from networks to hierarchies as the dominant form of social organization, we can expect the first signs of a tipping point to create a positive feedback process by which the system in decline fractures internally and hastens its own demise—the cliches "be eaten last" and "sell us the rope to hang them with" come to mind here. In particular, the supplantation of hierarchies by networks will be hastened by conflict in the international state system.

Our era is characterized by two considerably overlapping contradictions or fracture points. First, we're in the early stages of historic transition from a social organization dominated by large, centralized, hierarchical institutions like corporations and nation-states, to a world of small, self-governing units connected together horizontally through networks. But second, the old hierarchical forces of corporations and states constitute a global system of power with the United States—the world's Sole Remaining Superpower—as its enforcer. And in classic geopolitical terms, an expansionist hegemonic state tends to provoke a counter-hegemonic coalition of states seeking to restrain it. When these two intersecting contradictions reinforce each other, it throws in a chaotic element that may accelerate the process of change significantly.

[28] *Ibid*., p. 228.

There are many states which, as states, are clearly committed to maintaining the old system of domination internally—yet they desire to expand their independence at the expense of the United States or exert more power of their own over natural resources and markets. Even though states in general tend to rally in defense of hierarchies against networks, individual states may aid networked insurgencies against their competitors in order to get a leg up in the interstate competition.

To the extent that the war on network organizations is identified with one hegemonic state or group of states in particular, the tendency of other states to coalesce into an anti-hegemonic alliance will create divide the forces of hierarchy and create breathing room for networks. And likewise, to the extent that the hegemonic state's promotion of the hegemony of hierarchies is part of its larger policy of suppressing the emergence of viable state competitors in the international arena, other states may see furthering networked resistance movements as a weapon against the dominance of the hegemonic state.

Tom Friedman, in an admirable moment of frankness, once said "For globalism to work, American can't be afraid to act like the almighty superpower that it is. The hidden hand of the market will never work without a hidden fist… And the hidden fist that keeps the world safe for Silicon Valley's technologies to flourish is called the U.S. Army, Air Force, Navy and Marine Corps."

As imposing as the present global corporate order may seem, we would do well to remember how vulnerable it really is. It's only as strong as its weakest link.

The Washington Consensus has pursued a maximalist position in enforcing digital copyright claims against file-sharing sites, carrying out reprisals against Wikileaks to the full extent of its powers, etc. Therefore states which resist the hegemony of the United States, or attempt to defy the Washington Consensus, are at least temporarily objective allies.

That's true in particular of any nations that emerge as free information havens in defying the maximalist copyright accords promoted by the US, or in hosting information (like Wikileaks) banned within the DRM Curtain.

To the extent that states defying Washington's hegemony attempt to nullify its advantage in force by resorting to "weapons of the weak" like asymmetric warfare and the kinds of cheap Assassin's Mace weapons we considered in the previous chapter, their geopolitical competition with the American bloc may overlap with and reinforce the networked resistance's emphasis of agility over brute force in all kinds of interesting ways.

Large-scale military power is less likely to result in victory than in the past. Even though warfare is increasingly asymmetrical, it's "increasingly being won by the militarily weaker side." A Harvard study found that asymmetric wars from 1800 and 1849 resulted in victory for the weaker side in 12% of cases. In those from 1950 and 1998, the weaker side won 55% of the time. One reason for this is changes in military technology that result in "the increasing ability of the weaker party to inflict casualties on its opponent at lower cost to itself." For example, in Iraq IEDs were responsible for a majority of casualties—this despite the Pentagon spending $17 billion on radio frequency jammers.[29]

Area denial technology and asymmetric warfare technologies are reversing the long-term shift that resulted from gunpowder and ushered in the Westphalian nation-state.

[29] Moises Naim, *The End of Power: From Boardrooms to Battlefields and Churches to States, Why Being in Charge Isn't What it Used to Be* (New York: Basic Books, 2013), p. 5

Weapons that deny access to superior force or degrade the performance of advanced offensive weapons systems are frequently cheaper, by several orders of magnitude, than the weapons they're deployed against. The so-called "Assassin's Mace" technologies we considered earlier are relevant here. Such means include the use of mines at maritime chokepoints and anti-ship missiles like the Sunburn that can in theory take out aircraft carriers.

The Obama administration's recent new Strategic Guidance document announced, as a top priority, overcoming adversary states' attempt to nullify the United States' strategic advantage through comparatively cheap area denial weapons.

> President Obama's new military strategy has focused fresh attention on an increasingly important threat: the use of inexpensive weapons like mines and cyberattacks that aim not to defeat the American military in battle but to keep it at a distance.
>
> The president and his national security team predict that the security challenges of the coming decade will be defined by this threat, just as the last one was defined by terrorism and insurgency.
>
> A growing number of nations whose forces are overmatched by the United States are fielding these weapons, which can slow, disrupt and perhaps even halt an American offensive. Modern war plans can become mired in a bog of air defenses, mines, missiles, electronic jamming and computer-network attacks meant to degrade American advantages in technology and hardware…
>
> China and Iran were identified as the countries that were leading the pursuit of "asymmetric means" to counter American military force, according to the new strategy document, which cautioned that these relatively inexpensive measures were spreading to terrorist and guerrilla cells.
>
> At his announcement at the Pentagon last week, Mr. Obama said the country should invest in "the ability to operate in environments where adversaries try to deny us access."…
>
> "Iran's navy—especially the naval arm of Iran's Revolutionary Guards—has invested in vessels and armaments that are well suited to asymmetric warfare, rather than the sort of ship-to-ship conflict that Iran would surely lose," Michael Singh, managing director of the Washington Institute for Near East Policy, wrote in a recent essay for Foreign Policy.
>
> With Chinese and Russian help, Mr. Singh added, Iran is also fielding sophisticated mines, midget submarines and mobile antiship cruise missiles.
>
> Nathan Freier, a senior fellow at the Center for Strategic and International Studies, said, "Iran's capabilities are best suited for imposing high costs on those who might need to force their way through the Strait of Hormuz, and on those in the region whom the Iranians perceive as being complicit in enabling foreign access."
>
> The potential challenge from China is even more significant, according to analysts. China has a fleet of diesel-electric attack submarines, which can operate quietly and effectively in waters near China's shore to threaten foreign warships. China also fields short-, medium- and long-range missiles that could put warships at risk, and has layers of radar and surface-to-air missiles along its coast.

> Finding, identifying and striking an American warship is a complex military operation. But the thicket of Chinese defenses could oblige an American aircraft carrier and its strike group to operate hundreds of miles farther out to sea, decreasing the number of attack sorties its aircraft could mount in a day and diminishing their effectiveness.
>
> Perhaps most worrisome is China's focus on electronic warfare and computernetwork attacks, which might blunt the accuracy of advanced American munitions guided by satellite.[30]

Large powers are also forced to operate in a much more hostile environment of public awareness, given on-the-ground social media coverage of casualties and networked distribution of alternative news that renders the old press pools obsolete.[31] Israel learned this to its great chagrin in its July 2014 attack on Gaza—the first such Israeli aggression fought in the full light of social media coverage.

The Snowden Affair. The immediate public relations fallout to the security community from Snowden's leaks was only the beginning—but it was substantial in its own right.

Because (as we shall see below) the NSA had no way of tracking what documents Snowden had, it was forced to play defense. It only found out what had been leaked when the documents were actually published, in a slow death by a thousand cuts. As a result the Obama administration and the NSA left themselves wide open for a rope-a-dope strategy, attempting to control damage from each new leaked document with a new round of official happy talk—only to have the happy talk exposed as deliberate lies by the next leak. For example, President Obama, NSA chief Keith Alexander and strident Congressional NSA defenders Mike Rogers all strenuously denied, in a series of August press conferences, that any abuses of NSA surveillance had taken place. This was immediately followed by a *Washington Post* bombshell article on the NSA's abuse of the rules to spy on thousands of Americans every year.[32]

News of the leaks catalyzed a sizable constellation of backlashes against the U.S. Security State and the system of power it upholds.

First of all, it exemplified—and dramatized—a generational shift in thinking among those who had grown up in the digital era. The under-35 generation has fundamentally different attitudes toward institutional authority and loyalty than its parents and grandparents did.

> Gen Y will stare at you blankly if you talk about loyalty to their employer; the old feudal arrangement ("we'll give you a job for life and look after you as long as you look out for the Organization") is something their grandparents maybe ranted about, but it's about as real as the divine right of kings. Employers are alien hive-mind colony intelligences who will fuck you over for the bottom line on the quarterly balance sheet. They'll give you a laptop and tell you to hot-desk or work at home so that they can save money on office floorspace and furniture. They'll dangle the offer of a permanent job over your head but keep you on a zero-hours contract for as long

[30] Thom Shanker, "Pentagon Tries to Counter Low-Cost but Potent Weapons," *New York Times*, January 9, 2012 <www.nytimes.com>.

[31] Naim, op. cit., p. 111.

[32] Barton Gellman, "NSA broke privacy rules thousands of times per year, audit finds," *Washington Post*, August 15, 2013 <www.washingtonpost.com>.

> as is convenient. This is the world they grew up in: this is the world that defines their expectations.[33]

The Security State is utterly dependent on what MacKenzie Wark calls the "hacker class" of Snowden's generation—a generation permeated with a distrust of hierarchy and authority and a belief in transparency and information freedom. The NSA is finding it as impossible to deal with the mores of this generation in its own ranks as the music industry has found it to deal with them in the case of the filesharing movement.

> Keeping secrets is an act of loyalty as much as anything else, and that sort of loyalty is becoming harder to find in the younger generations. If the NSA and other intelligence bodies are going to survive in their present form, they are going to have to figure out how to reduce the number of secrets.
>
> [T]he old way of keeping intelligence secrets was to make it part of a life-long culture. The intelligence world would recruit people early in their careers and give them jobs for life. It was a private club, one filled with code words and secret knowledge.
>
> … An intelligence career meant that you had access to a new world, one to which "normal" people on the outside were completely oblivious. Membership of the private club meant people were loyal to their organisations, which were in turn loyal back to them.
>
> Those days are gone… Many jobs in intelligence are now outsourced, and there is no job-for-life culture in the corporate world any more. Workforces are flexible, jobs are interchangeable and people are expendable…
>
> Many will also believe in openness, especially the hacker types the NSA needs to recruit. They believe that information wants to be free, and that security comes from public knowledge and debate….[34]

And the Security State is powerless to stop new Snowdens from emerging within its midst. The NSA, for example, has a thousand sysadmins whose document viewing and downloading practices the agency is unable to track.[35] Despite official happy talk about an "internal audit process," the NSA still has no idea what documents Snowden took.[36] Which, in turn, has of course heightened the paranoia within the NSA leadership, who are waiting for the next shoe—and the next one, and the next—to drop.

> "They think he copied so much stuff—that almost everything that place does, he has," said one former government official, referring to the NSA, where Snowden worked as

[33] Charlie Stross, "Snowden leaks: the real take-home," *Charlie's Diary*, August 16, 2013 <www.antipope.org>.

[34] Bruce Schneier, "Government Secrecy and the Generation Gap," *Schneier on Security*, September 9, 2013 <www.schneier.com>.

[35] Mike Masnick, "1,000 Sys Admins Can Copy Any NSA Document Without Anyone Knowing About It; Think Only Snowden Did?" *Techdirt*, August 26, 2013 <www.techdirt.com/articles/20130826/12223124315/1000-sys-admins-can-copy-any-nsa-document-withoutanyone-knowing-about-it-think-only-snowden-did.shtml>.

[36] Mike Masnick, "Ed Snowden Covered His Tracks Well; How Many Other NSA Staffers Did The Same?" *Techdirt*, August 26, 2013 <www.techdirt.com>; Masnick, "US Still Can't Figure Out What Snowden Took; What Happened To Those Perfect 'Audits'?" *Techdirt*, August 21, 2013 <www.techdirt.com>.

> a contractor for Booz Allen Hamilton while in the NSA's Hawaii facility. "Everyone's nervous about what the next thing will be, what will be exposed."[37]

The generational shift in thinking, brought into higher relief than ever before by the Snowden affair (which itself came on the heels of the Manning and Schwartz stories), has provoked near-unprecedented panic among the generation operating the old centers of power.

> In 1974, it was easier for the ruling class to sacrifice Nixon and to cut a few heads with him. Parallels to the current situation are troubling. Today's ruling class is afraid, in a state of panic, and does not act rationally any more. It seeks to make examples at all costs, to repair each leak hoping it is only a few isolated cases.[38]

> I think there's a lot of fear in traditional institutions… Nobody understands why one of their boys would do this really weird thing. What has the Internet done to these people? What is it doing to their own children? See, that's the thing. If you're part of traditional power right now, this thing that's spreading over the earth, that's changing everything… If you were the MPAA a few years ago, or the RIAA, this Internet changed everything it touched into this weird thing, and it was like the Borg, or the zombie apocalypse. And if you wonder why they fight so hard, why they chase the Snowdens and try to shut down The Pirate Bay so much more than traditional criminals, it's because it looks so much like the zombie, and possibly media apocalypse—and we already have their children.[39]

Besides undermining internal security, the general shift in loyalties has made it more difficult for the surveillance state to recruit the new blood necessary to sustain itself in the future. Demand for hackers in the expanding surveillance state— the NSA and the Army's Cyber Command, for example—is outstripping the supply. "They will choose where they work based on salary, lifestyle and the lack of an interfering bureaucracy and that makes it particularly hard to get them into government."[40]

> The U.S. government's efforts to recruit talented hackers could suffer from the recent revelations about its vast domestic surveillance programs, as many private researchers express disillusionment with the National Security Agency…[41]

The Snowden leaks also catalyzed a large-scale trend for the Web's infrastructure to increase its independence of U.S. control. One of the near-to-mediumterm casualties of the leaks is likely to be the overwhelming dependence of the global Web on servers in the United States. The Snowden revelations about PRISM sparked immediate buzz about a shift to servers outside the United States that would not automatically roll over to demands from the U.S. Security State.

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[37] Ellen Nakashima and Greg Miller, "U.S. worried about security of files Snowden is thought to have," *Washington Post*, June 24, 2013 <www.washingtonpost.com>.

[38] Rick Falkvinge, "The First Global Civil War," *Falkvinge on Infopolicy*, August 28, 2013 <falkvinge.net>.

[39] Quinn Norton keynote address to NetHui2013 convention, Wellington, New Zealand, July 8–10, 2013 <www.youtube.com>.

[40] Peter Apps and Brenda Goh, "Cyber warrior shortage hits anti-hacker fightback," *Reuters UK*, October 13, 2013 <uk.reuters.com>.

[41] Joseph Menn, "NSA revelations could hurt collaboration with 'betrayed' hackers," *Reuters*, August 3, 2013 <www.reuters.com>.

> One of the reasons electronic surveillance tools such as PRISM work so well is because much of the world's Internet traffic goes through U.S. servers. The American companies that own and operate that equipment can be subpoenaed and the data handed over to the government. Voila—intelligence secured!
>
> But that works only so long as the traffic keeps going where intelligence agencies want it to go. There are signs now that the gravy train of easy data is coming to an end. Foreign companies who once considered hosting their information on U.S. servers are beginning to change their minds. And they're not the only ones. Governments are growing more wary, too…
>
> But thanks to the NSA leaks and the government's reluctance to fully disclose its activities, criminals are about to have more ways to evade online detection than ever. Investigators' jobs will get far more difficult if their suspects' communications suddenly vanish from U.S. servers and reappear in an encrypted format in a country that won't cooperate with American demands.[42]

Much of the shift is likely to take the form of generational attrition; not so much a dramatic exodus of existing web-hosting customers to servers outside the U.S., which can be an intensive logistical process, but the refusal of a new generation of customers to use U.S. servers in the first place.[43] But even in the short term, there's speculation that offshoring could cost American web-hosting companies up to $35 billion.[44]

As one would expect, news of the extent of U.S. spying on private communications gave new impetus to the mainstreaming of encryption. The Snowden leaks included dismaying information about the extent to which the NSA had already compromised encryption systems widely in use. It was, for example, able to decrypt the TOR router included in versions of the Firefox browser for Windows issued through June 2013. The good news was that this achievement was more limited than it sounded. The TOR onion router itself was not compromised, nor were versions of TOR bundled with Firefox for Linux, nor was TOR incorporated into versions of the Firefox bundle for Windows issued after June.

And the government's ability to decrypt even communications in the vulnerable categories was limited by its information-processing capabilities.

> But the documents suggest that the fundamental security of the Tor service remains intact. One top-secret presentation, titled 'Tor Stinks', states: "We will never be able to de-anonymize all Tor users all the time." It continues: "With manual analysis we can de-anonymize a very small fraction of Tor users," and says the agency has had "no success de-anonymizing a user in response" to a specific request.[45]

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[42] Brian Fung, "PRISM works because a ton of data moves through U.S. servers. That's also why it could fail," *Washington Post*, August 20. 2013 <www.washingtonpost.com>.

[43] Mike Masnick, "No, There Hasn't Been A Big Shift Away From US Datacenters… Yet," *Techdirt*, August 23, 2013 <www.techdirt.com>.

[44] "NSA Internet Spying Sparks Race To Create Offshore Havens For Data Privacy," *Slashdot*, September 30, 2013 <yro.slashdot.org>.

[45] James Ball, Bruce Schneier and Glenn Greenwald, "NSA and GCHQ target Tor network that protects anonymity of web users," *The Guardian*, October 4, 2013 <www.theguardian.com/world/2013/oct/04/nsa-gchq-attack-tor-network-encryption>.

Meanwhile, two prominent encrypted email services—Lavabit and Open Circle—shut down in response to Obama administration demands for user information.[46] This ominous trend spurred announcements of a variety of new encrypted email services in the works.

The Internet's governance institutions responded to news of PRISM by taking steps to free themselves of disproportionate American influence.

> All of the major internet organisations have pledged, at a summit in Uruguay, to free themselves of the influence of the US government.
>
> The directors of ICANN, the Internet Engineering Task Force, the Internet Architecture Board, the World Wide Web Consortium, the Internet Society and all five of the regional Internet address registries have vowed to break their associations with the US government…
>
> That's a distinct change from the current situation, where the US department of commerce has oversight of ICANN.[47]

U.S. control over ICANN had already come under heightened international scrutiny after the U.S. Justice Department used domain names seizures to punish alleged violations of copyright law.

> Even before the Snowden leaks… governments like China, India and Russia have distrusted ICANN. They have demanded control of the net's naming system to be turned over to an organization such as the International Telecommunications Union, an affiliate of the United Nations…
>
> What's more, who controls the internet's infrastructure became an issue last year after the United States began seizing hundreds of domains across the globe for allegedly breaching federal copyright and trademark laws.[48]

The NSA leaks also catalyzed pushback against the U.S. in more traditional diplomatic venues. In October 2013, the European Parliament voted to halt financial data-sharing with the U.S.[49] And revelations that the NSA may have been listening in on German Chancellor Angela Merkel's phone threatened the TAFTA/TIPP trade agreement between the U.S. and EU.[50]

Finally, the NSA story has made the American public a lot more resistant to surveillance in principle, making it more difficult for local police departments to implement policies for increased use of surveillance cameras, drones and the like.[51] The backlash when the Snowden leaks exposed

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[46] Joe Mullin, "After Lavabit shutdown, another encrypted e-mail service closes," *Ars Technica*, August 9, 2013 <arstechnica.com>.

[47] Duncan Geere, "The US is losing control of the internet," *Wired UK*, October 12, 2013 <www.wired.co.uk>.

[48] David Kravets, "NSA Leaks Prompt Rethinking of U.S. Control Over the Internet's Infrastructure," *Wired*, October 14, 2013 <www.wired.com>.

[49] Rick Falkvinge, "In Mass Surveillance Fallout, European Parliament Votes to Suspend Financial Data Sharing With U.S.," *Falkvinge on Infopolicy*, October 25, 2013 <falkvinge.net>.

[50] Mike Masnick, "How NSA Spying On Angela Merkel May Scuttle TAFTA/TTIP Trade Agreement," *Techdirt*, October 28, 2013 <www.techdirt.com>.

[51] J.D. Tuccille, "NSA Revelations Monkeywrench Police Surveillance State Schemes," *Reason Hit&Run*, October 21, 2013 <blog.p2pfoundation.net>.

telecom and social media collaboration with "the authorities" has also made the latter more leery of cooperating with the security state.[52]

As if all this were not enough, Glenn Greenwald's magazine *The Intercept* has published new leaks suggesting there have been a *second* and *third* leaker. And since, as we saw above, the NSA seems to be really awful at detecting leakers internally or identifying what information has been compromised, we can probably expect a lot more.[53]

II. The Question of Repression

I've encountered plenty of people who are, on the whole, pessimistic about the likely use of hunter-killer drones and other control technologies to root out the counter-economy, when the corporate state sees itself as in a desperate enough position to throw off the pretense of democracy and resort to undisguised largescale repression. In its most dystopian form, the idea is a repressive onslaught of surveillance systems, hunter-killer drones, crowd-control technologies like microwaves/sonic blasts, and psychopharmacological engineering of the enforcement troops to stamp out the alternative economy and enforce a system of global corporate neo-serfdom under the rule of multibillionaires living inside militarized luxury enclaves.

John Robb describes the way assorted robotic technologies might be used for such purposes. Drones are already being used increasingly for internal surveillance functions by domestic law enforcement, with the actual arrests still being carried out by human boots on the ground.[54]

> … [H]ow do a very, very small group of neo-feudal plutocrats control a global population (of economic losers) in the modern context?…
>
> Long term? Bots. Software bots. Drones. My good friend Daniel Suarez did a great job of demonstrating how this works in his books Daemon and Freedom.
>
> In short, bots will increasingly allow a VERY small group of people (in our case, a small group of plutocrats that act as the world's economic central planners) to amplify their power/dominance in a the physical world to a degree never seen before.
>
> Software bots automate information dominance. They can do everything from checking purchasing habits to energy use (via smart meters) to social media use o look for "terrorist" signatures. They can dominate markets as we are seeing high frequency trading. These software bots can also automate interactions with human beings from the simple phone spam/customer service phone tree to interfaces like Siri.
>
> Hardware bots include everything from flying drones to crawling rats to kill, maim, or incapacitate individuals and/or groups… Expect to see them operating in swarms/clouds, conducting highly autonomous decision making (including the decision to kill), and serving in hunter killer roles.

[52] Bruce Schneier, "A Fraying of the Public/Private Surveillance Partnership," *Schneier on Security*, November 14, 2013 <www.schneier.com>.

[53] Schneier, "The US Intelligence Community has a Third Leaker," *Schneier on Security*, August 7, 2014 <www.schneier.com>.

[54] John Robb, "Drones in the US of A," *Global Guerrillas*, December 11, 2011 <globalguerrillas.typepad.com>.

> The combination of the two bot systems, software and hardware, provides the means to automate control of vast populations. A perfect, privatized solution for an extremely small group of plutocrats (many of whom are pathogenic).
>
> OUR job is to avoid this future. Build resilient communities that can provide independence and defend themselves. Provide an alternative for those unwilling to become economic losers.[55]

Vinay Gupta, in a recent exchange with me on Twitter, recently argued that the passage of the NDAA (with its provisions for indefinite detention without trial) and the shutdown of Megaupload without due process of law signaled the emergence of the U.S. as a full-blown fascist state. And he suggested the possibility that, as governments implode in the face of networked resistance movements in countries like Spain and Greece, free information havens emerge in places like Iceland, and one domino after another in the global South begins to secede from the neoliberal order, the United States will become embroiled in a desperate World War of counterinsurgency, using air strikes, blockades, cyberwar, black ops, hunterkiller drones, and crowd-control technologies to suppress the emerging free order. "Hacker labs in extradition-resistant areas being hit by special forces is where this goes… "[56] The street fighting between riot cops and Occupy protesters was just a dress rehearsal, as Spain was for WWII.

So are we headed for a likely future in which Skynet and the Terminator HK's are controlled, not by an artificial intelligence, but by Dick Cheney?

I don't think so.

We already saw in the last chapter that networked, stigmergic movements are more agile than authoritarian hierarchies, and able to get inside the state's OODA loop in developing technologies of circumvention faster than the state can develop technologies of control. We've seen that authoritarian hierarchies respond to attack by becoming more authoritarian and hierarchical, while networks respond by becoming more agile and resilient.

Unencrypted drones, to start with that technology, are extremely vulnerable to hacking of their guidance and communications systems. In addition, though, there's the old-fashioned "kinetic option" of shooting them down. Predator and Reaper drones—which carry out the majority of kills in Pakistan—fly at only about 100mph. This means they're highly vulnerable to most jet interceptors currently in service around the world, as well as surface-to-air missiles. And not even Sentinel drones, whose speed tops out at almost Mach 1, are entirely invulnerable.[57]

Finally, drones may be vulnerable to passive resistance, such as altering infrared profiles or creating ambient noise to disrupt their sensors.

Our earlier discussion of Assassin's Mace weapons is relevant here. The resistance's agility in technical development mean it is able to develop mashups of existing technology faster than the corporate state was able to develop the original technologies. It can develop means of circumvention faster than the state can deal with them.

And Al Qaeda seems at least to be working on a wide range of cheap countermeasures—of varying or unknown levels of effectiveness—to American drones.

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[55] John Robb, "Q: How Will Plutocrats Dominate a World? A: Bots," *Global Guerrillas*, November 16, 2011 <globalguerrillas.typepad.com>.

[56] Vinay Gupta (@leashless), 2:44 PM, March 6, 12 <twitter.com>.

[57] Brian Palmer, "Is It Hard to Kill a Drone?" *Slate*, June 6, 2012 <www.slate.com>.

1. It is possible to know the intention and the mission of the drone by using the Russian-made "sky grabber" device to infiltrate the drone's waves and the frequencies. The device is available in the market for $2,595 and the one who operates it should be a computer know-how.
2. Using devices that broadcast frequencies or pack of frequencies to disconnect the contacts and confuse the frequencies used to control the drone. The Mujahideen have had successful experiments using the Russian-made "Racal."
3. Spreading the reflective pieces of glass on a car or on the roof of the building.
4. Placing a group of skilled snipers to hunt the drone, especially the reconnaissance ones because they fly low, about six kilometers or less.
5. Jamming of and confusing of electronic communication using the ordinary water-lifting dynamo fitted with a 30-meter copper pole.
6. Jamming of and confusing of electronic communication using old equipment and keeping them 24-hour running because of their strong frequencies and it is possible using simple ideas of deception of equipment to attract the electronic waves devices similar to that used by the Yugoslav army when they used the microwave (oven) in attracting and confusing the NATO missiles fitted with electromagnetic searching devices.
7. Using general confusion methods and not to use permanent headquarters.
8. Discovering the presence of a drone through well-placed reconnaissance networks and to warn all the formations to halt any movement in the area.
9. To hide from being directly or indirectly spotted, especially at night.
10. To hide under thick trees because they are the best cover against the planes.
11. To stay in places unlit by the sun such as the shadows of the buildings or the trees.
12. Maintain complete silence of all wireless contacts.
13. Disembark of vehicles and keep away from them especially when being chased or during combat.
14. To deceive the drone by entering places of multiple entrances and exits.
15. Using underground shelters because the missiles fired by these planes are usually of the fragmented anti-personnel and not anti-buildings type.
16. To avoid gathering in open areas and in urgent cases, use building of multiple doors or exits.
17. Forming anti-spies groups to look for spies and agents.
18. Formation of fake gatherings such as using dolls and statutes to be placed outside false ditches to mislead the enemy.
19. When discovering that a drone is after a car, leave the car immediately and everyone should go in different direction because the planes are unable to get after everyone.

20. Using natural barricades like forests and caves when there is an urgent need for training or gathering.
21. In frequently targeted areas, use smoke as cover by burning tires.
22. As for the leaders or those sought after, they should not use communications equipment because the enemy usually keeps a voice tag through which they can identify the speaking person and then locate him.[58]

In the American domestic market an Oregon startup, Domestic Drones Countermeasures LLC, claims to be preparing to offer a package of countermeasures against law enforcement drones.

> Founded in February, DDC was created by the same people behind defense contractor Aplus Mobile, which makes ruggedized computers for other defense contractors. Using knowledge gained from its military contracting work, DDC says it has developed countermeasures that are "highly effective and undefeatable by most current domestic drone technologies."
>
> How does the technology work? The press release was maddeningly vague ("Multiple layer systems ensure success by impeding typical drone sensors, infrared and camera capability and their effectiveness") so we reached out to the company over email. Here's what DDC's Amy Ciesielka has to say: "We simply do not allow the [drone] cameras to observe with any clarity."
>
> More to the point, DDC's system has some sort of software that's programmed to conspire against camera- and infrared-equipped drones. One report described the products as "land-based boxes."…
>
> Not knowing more about what form these countermeasures will take, it is hard to speculate on the broader implications here. But when commercial drones start to crowd our skies, the market for consumers who want to win back some privacy will only grow. You can bet DDC won't be the only one selling anti-drone wares to the masses.

Any consideration of the repressive use of drones must also take into account the possible spread of such technology to the resistance. The development of technologies like drones seems to be governed by a sort of analogue to Moore's Law: drone tech developed today at an R&D cost of billions will likely be available off the shelf five years later at a tiny fraction of the cost, thanks to open-source hardware hackers.

As Robb writes, the cost of drone technology is plummeting:

> The cost and size of drones will shrink. Nearly everyone will have access to drone tech (autopilots already cost less than $30). Further, the software to enable drones to employ swarm behavior will improve. So, don't think in terms of a single drone. Think in terms of a single person controlling hundreds and thousands.[59]

[58] "The Al-Qaida Papers—Drones." This document is one of several found by The Associated Press in buildings recently occupied by al-Qaida fighters in Timbuktu, Mali <hosted.ap.org>.

[59] Kelsey D. Atherton, "Company to Make Antidrone Tech Available to the Masses," *Popsci.com*, March 20, 2013 <www.popsci.com>.

As evidence, he cites the DIY Drone community.[60] Most importantly, drone hobbyists have shown *armed* drones (a six-rotor helicopter drone with mounted paintball guns, shooting at fixed targets on the ground) to be entirely feasible.[61] One YouTube video shows a helicopter drone armed with a paintball gun, shooting up targets on the ground.[62] An open-source drone autopilot system, based on the Lisa/S chip, weights about a sixteenth as much as its predecessor, and is compatible with any type of drone.[63]

The dynamic of international state rivalry adds another twist to the proliferation of cheap drone technology, as comparatively high-tech economic and military powers like China export drones to countries threatened by the United States.

> Cheap drones made in China could end up arming potential U.S. foes such as North Korea, Iran and terrorist organizations.
>
> China already makes drones that don't quite match up to U.S. military drones, but for a fraction of the cost. The Chinese military envisions such unmanned autonomous vehicles (UAVs) scouting out battlefield targets, guiding missile and artillery strikes, and swarming potential adversaries, such as U.S. carrier battle groups.
>
> "In whatever future conflict scenario we're in five or 10 years from now, the proliferation of UAVs is going to complicate things for the U.S. military," said Ian Easton, a research fellow at the Project 2049 Institute.
>
> China has built a huge military-industrial complex to support its growing drone fleet, which consisted of about 280 military drones as of mid-2011, according to a report released by the Project 2049 Institute on March 11. Chinese manufacturers supplying the military and state agencies also have begun seeking foreign buyers in a global drone market that aerospace and defense market research firm Teal Group estimates to be worth $89 billion over the next 10 years.
>
> Retired Chinese generals have stated on Chinese state television station CCTV that Chinese drone technology lags American technology by about five years, Easton said. However, Chinese manufacturers are touting their plans to build drones five or even 10 times cheaper than comparable U.S. drones, whose hardware alone costs $5 million to $10 million.[64]

The greater speed of innovation by networks, in particular, is just one example of the broader phenomenon of an agile resistance movement staying inside its enemy's OODA loop. Consider Tor developers' creation of a same-day hack to the Iranian regime's attempt to block its routers. Consider the development of a Firefox workaround extension for SOPA before the bill even came up for a vote. Consider the FBI's seizure of the MegaUpload domain name after many months of preparation—to which Anonymous responded in a matter of hours with the largest DDOS

[60] John Robb, "The Future of Drone Warfare," *Global Guerrillas*, December 21, 2011 <globalguerrillas.typepad.com>.

[61] <diydrones.com>.

[62] J.D. Tuccille, "Forget DIY Drones, How About DIY Armed Drones?" *Reason Hit & Run Blog*, December 13, 2012 <reason.com>.

[63] Annalee Newitz, "This video of a drone with a gun will freak you the hell out," *io9*, June 14, 2013 <io9.com>.

[64] Michel Bauwens, "Project of the Day: the Lisa S Open Source Drone Autopilot System," *P2P Foundation Blog*, December 22, 2013 <blog.p2pfoundation.net>.

attack in history and a doxing of MPAA chief Chris Dodd. The flexibility and rapid innovations in Occupy Wall Street tactics, in response to police repression—for example the use of light infantry tactics to exploit superior mobility against the plodding riot cops, is yet another example. Generally speaking, the resistance is able to stay a step ahead of the corporate state and keep it permanently off-balance.

Technologies of imperial control like drones may wind up being more useful to the Resistance than to the Empire.

The asymmetry between the state and the Resistance results from the former's relative target density. It also results from the nature of its infrastructure systems and the proliferation of key nodes that can be struck randomly and produce damage at great distances. John Robb writes:

> Standoff attacks. Like many historical swarming attacks, global guerrillas will have significant standoff firepower potential—the ability to attack from a distance. However, this firepower isn't a traditional weapon, rather, its the global guerrilla's ability to use attacks on infrastructure to impact downstream systems miles (perhaps hundreds of miles) distant. Attacks will be rotated among infrastructures in a modern variant of horse archer tactics.[65]

The American state's insurgent enemies today, according to Bruce Schneier, have access to technologies the Soviets could never have dreamed of.

> Defending against these sorts of adversaries doesn't require military-grade encryption only where it counts; it requires commercial-grade encryption everywhere possible.
>
> This sort of solution would require the NSA to develop a whole new level of lightweight commercial-grade security systems for military applications—not just office-data "Sensitive but Unclassified" or "For Official Use Only" classifications. It would require the NSA to allow keys to be handed to uncleared UAV operators, and perhaps read over insecure phone lines and stored in people's back pockets. It would require the sort of ad hoc key management systems you find in internet protocols, or in DRM systems. It wouldn't be anywhere near perfect, but it would be more commensurate with the actual threats.[66]

In other words, it would require a very high and broad-based level of trust in the lowest-level functionaries of the intelligence apparatus—quite dangerous, given the possibility (discussed below) of demoralization and defection within the apparatus in the event of a full-scale war of terror by the American state against its domestic population.

Robb himself acknowledged the possibility that "small groups [might] put together systems like this [autonomous drones] on the cheap." Nevertheless, his primary fear is the ability of such drones " to automate repression, particularly if combined with software bots that sift/sort/monitor all of your data 24x7x365 (already going on)."[67] He described, in a subsequent post, the implications for both foreign and domestic counterinsurgency warfare:

[65] Jeremy Hsu, "Cheap Drones Made in China Could Arm U.S. Foes," *Mashable*, April 3, 2013 <mashable.com>.

[66] John Robb, "GLOBAL GUERRILLA SWARMING," *Global Guerrillas*, May 18, 2004 <globalguerrillas.typepad.com>.

[67] Bruce Schnerier, "Intercepting Predator Video," *Schmeier on Security*, December 24, 2009 <www.schneier.com>.

> Gunboat diplomacy was the essence of military power projection for centuries. Want to coerce a country? Sail a aircraft carrier battle group into their national waters.
>
> However, carrier battlegroups are hideously expensive, increasingly vulnerable to low cost attack, and less lethal than they appear (most of the weapons systems are used for self-defense).
>
> What are nation-states replacing them with? Drones. You can already see it in action across the world as drone staging areas are replacing traditional military bases/entanglements. Further, drones already account for the vast majority of people killed by US forces.
>
> Of course, the reason for this is clear. Drones are relatively cheap, don't require many people to deploy/operate, don't put personnel directly at risk, can be easily outsourced, can be micromanaged from Washington, and are very effective at blowing things up.
>
> The final benefit of Drone Diplomacy: drones make it possible to apply coercion at the individual or small group level in a way that a blunt instrument like a carrier battle group can't.
>
> What does this mean?
>
> It allows truly scalable global coercion: the automation of comply or die.
>
> Call up the target on his/her personal cell (it could even be automated as a robocall to get real scalability—wouldn't that suck, to get killed completely through bot based automation).
>
> Ask the person on the other end to do something or to stop doing something.
>
> If they don't do what you ask, they die soon thereafter due to drone strike (unless they go into deep hiding and disconnect from the global system)…
>
> All the money is on cyber intel (to generate targets based on "signatures") and drones to kill them. When domestic unrest occurs in the US due to economic decline, these systems will be ready for domestic application.[68]

Robb argues that the only real defenses against drones are to harden targets and thereby raise the average cost of attacks relative to target value, or to develop a counter-offensive drone capability. Drones, like nukes, shift the advantage almost entirely to the offensive. The only real response is to deter them by having "drones of your own."[69]

Given Robb's references to the availability of drone technologies on the cheap, combined with the usefulness of drones for targeting key individuals, it's dismaying that he failed to connect the dots. Some of his readers, however, were quick to do so in the comments below his article:

> Why only nation states?
>
> What is it in dronetech that cannot be open sourced and turned against the oppression?…

[68] John Robb, "The Future of Warfare," *Global Guerrillas*, January 27, 2012 <globalguerrillas.typepad.com>.
[69] Robb, "Drone Diplomacy: Comply or Die," *Global Guerrillas*, January 30, 2012 <globalguerrillas.typepad.com>.

> Most governments can already whack pretty much any subject they care to. But the reverse is not true. With widely available enough drones, some symmetry might again be restored… —Stuki
>
> What are the weaknesses of drone support crews, drone manufacturers and their employees? —Craig
>
> … you could characterize drones as elements in a network and attack/subvert/co-opt critical nodes in that network just the same as you could do when attacking anything else. (And who knows what those may be?) —Mercutio
>
> You defeat drones by killing its tail, the US has these things all over the world, but operating out in the open to a great extent, would not take much ground work to find out where they are flying from and the operational crew, find their base, and kill them on the ground, and kill there ground crews too… Kill the guys who send the drones, they are findable and hittable, equalize the kill zones, bullets and bombs travel both ways. —The Black
>
> It seems to me that one defense would be to "grab the belt," in various ways. I would go after the personnel involved, from leadership and their families to the operators. The air force, and their dependents, have escaped conflict for far too long. —EN
>
> Attacking the drones themselves is far far more difficult than neutralizing the C&C structure behind them.) As 'The Black' mentioned above find the guys with the joysticks and their chain of command. —Sam
>
> On the kinetic level, drones work both ways. When an insurgent can cheaply print a few dozen with small explosive warheads and swarm them at an enemy airfield, the playing field is a bit leveled. Paddy Moyne and the rest of the SAS were able to take out hundreds of Axis planes on their African airfields using very small charges. Do I need to expound? —B
>
> Look at the numbers of contractors that supported the war in Iraq/are supporting the war in Afghanistan. Contractors quit EASY. Pick a company, and I'm not dog piling, but for example Blackwater/XE. How long would their contractors have worked protecting Dept. of State if a family a month was being murdered stateside?
>
> Fill in the blank. Contractors are mission critical and can quit on a moments notice. —matt

Robb, writing later against the background of the mid-2013 conflict between the U.S. and Bashir Assad over Syria's alleged use of chemical weapons against civilians, speculated that using drones to target specific individuals responsible for such decisions—rather than conventional attacks—was the wave of the future.

> What can we expect to see? A more direct approach. The targeting of specific individuals in the hierarchy that made the decision to use the banned weapons. An extralegal process that doesn't look much like traditional warfare and much more like how nation states hunt "terrorists."
>
> In the case of Syria, the evidence would be presented and adjudicated in an extralegal process. The portion of the national hierarchy involved in the use of the

> banned weapon would be deemed a terrorist organization and specific people would be placed onto a target list, prioritized, and then hunted as individuals.
>
> I suspect, as this process matures, targets will be made public (listed on the Internet) and given 60 days to give themselves up). After that, it's a one way ticket. Drones away… crowdsourced manhunts… NSA big data… and an eventual explosive death (with the requisite collatoral damage that nobody seems to care about).[70]

The problem for nation-states like the US, and for other hierarchical institutions like corporations, is that this strategy can be reversed. When hunter-killer drones are a cheap, off-the-shelf technology that can be manufactured in garage factories by networked resistance movements, the US and major corporations will have to worry about their own key command personnel being targeted in the same way they target alleged terrorists today. A list of potential targets includes—but is by no means limited to—military chains of command all the way to the top, and the senior management of military industry. Drones might also carry out pinpoint destruction of physical support facilities like air traffic control at airbases Western drones are launched from, or the factories where the drones are produced. Robb discusses elsewhere, in a context other than drones, the increasing tendency of networked terror movements like ISIS to isolate and target individual leadership figures like corporate CEOs in order to demoralize organizations and remove them from the fight.

> once an attack on a senior tech executive happens, future threats will be instantly credible and highly coercive.
>
> If that occurs, we are going to find out very quickly that the corporation, and particularly tech companies, are particularly bad organizations for warfare. One reason is that they are too centralized. In particular, the institution of the CEO is a grave weakness (a systempunkt in global guerrilla lingo). The CEO's centrality to the corporate network makes him/her a single point of failure for the entire organization. Another is that executives in most of the western world are very soft targets. Easy to find (Google and Google maps), easy to isolate, and easy to kill…[71]

And the capability of drones is rising at the same time their cost falls:

> Low cost drones flying at very low levels combine extremely high accuracy and extremely difficult targets. They are, in effect, a poor man's cruise missile. In the 80's, the USSR found that the costs of an air defense system required to defend against US cruise missiles was completely beyond their means. While this is on a much smaller scale, it still radically expands the costs.[72]

The clear implication is that, if drones present a comparable threat to hard targets in the U.S. or American hard military targets abroad, then the USSR may well have not been the last superpower to bankrupt itself trying to build a viable defense against such weapons.

[70] Robb, "Is There a Defense Against Drones?" *Global Guerrillas*, January 31, 2012 <globalguerrillas.typepad.com>.

[71] Robb, "How to deal with Countries that Use Chemical Weapons? Make it Personal," *Global Guerrillas*, September 2, 2013 <globalguerrillas.typepad.com>.

[72] Robb, "It's Open Season on the Tech Elite," *Global Guerrillas*, March 2, 2015 <globalguerrillas.typepad.com>.

The concept of Assassin's Mace weapons, which we discussed in an earlier section, applies more broadly to the vulnerability of military technologies of imperial control to cheap countermeasures. And it casts serious doubt on the prospects for success of any effort at repression on a global scale. The leading powers in the emerging bloc coalescing against the Sole Remaining Superpower are providing sophisticated technologies to small states that come under fire from the Empire.

A good example is the Russian SS-N-22 Sunburn missile, which the Russians have sold to China and Iran. The missile is claimed by some to be potentially lethal to aircraft carriers. The Chinese are in process of introducing an even more lethal missile, the Dongfeng 21-D, designed explicitly for its carrier-killing capability. The purpose is to neutralize U.S. carrier groups in up to 3000k from the Chinese coast. At the estimated cost of production, about 10,000 of them could be produced for the price of a single aircraft carrier.[73]

> Considering the implications and significant threat of China's new generation of carrier-killing missiles, [U.S. Naval War College Professor Toshi] Yoshihara foresees the possibility that they "could have an enduring psychological effect on U.S. policymakers. It underscores more broadly that the U.S. Navy no longer rules the waves as it has since the end of World War II. The stark reality is that sea control cannot be taken for granted anymore."[74]
>
> In a conflict, the U.S. Aegis destroyers and cruisers that accompany aircraft carriers could be used to foil anti-ship missiles with SM-3 interceptor rockets, experts say.
>
> But [Naval strategy consultant Paul] Giarra noted that interceptor capacity on Aegis-equipped ships isn't enough to reliably defend against a volley of well-placed anti-ship ballistic missiles.[75]

Another tipping point on the geopolitical level is the increasing threat of defection from neoliberalism by "failed states" like Argentina in 2002, or the European periphery in the wake of post-2008 austerity.

Returning to our previous discussions of hierarchy becoming more brittle in response to attack in the war between networks and hierarchies, the vulnerability of the state to the human factor extends much more broadly than the narrow question of superiority in innovation. It extends to questions of internal dissension, loss of morale, and a high rate of defection (not to mention internal leaks, sabotage, etc.) among low-level functionaries demoralized by a perpetual war of terror against their own domestic populations. The danger, for the ruling class, is something like the defection of the Winter Palace guards in the Bolshevik Revolution.

Vinay Gupta argues that fighting a networked resistance movement, in the current technological environment, increasingly puts both repressive states and their general populations in a state of cognitive dissonance. This is an edited version of a Twitter chat I had with him, streamlined into blog post format:

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[73] Robb, "JOURNAL: Iron Dome and Magic Wand vs. the Parthian Shot," *Global Guerrillas*, March 13, 2012 <globalguerrillas.typepad.com>.

[74] David Cohen, "China Confirms Carrier-Killer," *The Diplomat*, July 15, 2011 <thediplomat.com>.

[75] Terrence Aym, "US Navy Stunned: Deadly new Chinese Missiles can Sink Every US Supercarrier," *OpEd News*, August 7, 2010 <www.opednews.com>.

GUPTA: 1> No national government is capable of planning clearly for the horror of resource wars between China, America and Europe/Russia.

2> Therefore, other narratives are being created to cover these inevitable economic and standard-of-living conflicts: drug war, terrorism.

3> This is why so much of the war seems to be huge amounts of money and manpower for totally ineffective results: immoral == blinding self.

The implication is that a moral side—even a smaller one—could out-compete the Great Powers because moral ground = intellectual clarity. The strategic advantage of a moral war is the ability to think clearly about the ends required to meet a genuinely justified end…

Now refactor that through national politics: the government is stupid *because* the government is evil. Clarity would reveal it as such. The implication is, frankly, that you cannot be smart unless you're going to be good, excepting the genuinely evil who know that they are…

This is important, even though it seems simple, because it's *a moral asymmetry in warfare*—it's a reason to believe the good guys do win. In a conflict, the side which can bear to define it's goals clearly can then plot a strategy to attain them. It can win. You can't win a war who's purpose you cannot bear to define: the Americans in Iraq defined fighting with their eyes closed: empire narrative.

Now, what this represents is an opportunity to develop new fundamental doctrine based on whole-of-society offensive/defensive engagement. There is room here for a new moral philosophy, a doctrine of war that cannot easily be used to empower evil regimes. Seriously…

Here's my question: can soldiers who do not understand their purpose outcompete those who do? Answer: probably not. Poor strategic thinking…

What I'm driving at is a moral limitation which command-and-control evolved to get around: wars for the goals of the ruling European classes. And that stuff is all baked into the military, right down to the bone. But we *know* from Deming that Understanding & Equality = Quality. If you look at a modern military through Deming's eyes, the entire thing is a machine for producing cockups…

In short,a transparent and cooperative battle space is only possible when soldiers individually understand their true purpose and objectives. Because if you feel you're in the wrong, you can't bear to look at the data, and you live in a fantasy world: SNAFU and hierarchy lies.

CARSON: … Your train of thought suggests fascist regimes can't afford to let their soldiers be smart; they will therefore be defeated by networks. Soldiers fighting for an authoritarian cause have morale trouble from cognitive dissonance, and can't be trusted with initiative. That's the same thing Julian Assange said about hierarchies becoming more brittle and opaque to themselves, in response to attack—wasn't it?

GUPTA: And the side which can bear to face its actions head-on can see the battlespace clearly right down to each individual fighter. The more monitoring and intelligence gear you have, the worse it gets: the intel analysts can't bear to think

about what they're seeing. Moral failure means your front lines get shit information: self-deception is a critical strategic failure which your enemies can exploit.

In short: hit them in their cognitive dissonance. Map it as a strategic asset, and whip ass on it as hard as possible.

What I am suggesting here is simple: TECHNOLOGY EMPOWERS MORAL WAR. I think we may find that it cripples immoral war: evidence is current…

Now, imagine the Iraqis and the Afghans had a a vast supply of shoulder-launched anti-aircraft weapons and good quality anti-tank gear. All that stuff is cheap, weapon cost less than 1% of target cost, say. They did this based on RPGs and landmines. Imagine if they'd had kit.

Why? To have effective swarm response, fast, fluid tactics, you need a general consensus on strategy, which comes from political clarity…

Now, let's take this and look at post-economic Greece, Spain and Italy. Italy is city states. Greece and Spain nearly went Anarchist nr WW2. With a moral case for war in those nations, they could be the first testbeds for first world populations fighting for new politics. Shit…

If you just dump the data into a bucket, in a transparent battle space, the moral clarity is what results in coordination at the macro scale. That efficient swarm coordination requires shared goals and common knowledge, and IMMORAL WAR has split goals in the force and secrecy…

CARSON [after the fact]: Same thing goes for the battlefields at Oakland, UC Davis, NYC. For the first time, the public is forced to confront what that "thin blue line" really does. Moral unity between the public and those sainted "first responders" is disrupted.

GUPTA: … [S]ide with lower cognitive dissonance wins…

Conclusion: a shared, rational moral reason for war is an essential part of winning in a transparent battlespace because it enables thinking. And particularly in urban environments, the pace of war requires decision-making to be done as far forwards as possible, and in teams…

Tech provides coordination, which makes Just Following Orders a less adaptive response than looking at the map and acting. Power shift.

… That's actually the key, right there: the military was constructed to magnify the will of a Sovereign, and when that breaks down, boom. Because a sufficiently transparent society, or battlespace, highlights the conflicts of interest between Sovereigns and Soldiers…

In short, for exactly the same reason Communism was out-competed by Capitalism, Networked societies will out-compete Capitalist ones. It's only the unified moral basis which allows for a networked fighting force to find effective unity: without that,transparency tears apart.

I keep saying it in different ways: when everybody can see everything, the goal of transparent battlespace, the good guys tend to win. Because what I'm saying here

> is very simple: the Americans are probably going to be the Bad Guys on the next outing. #NDAA
>
> And I think it's important to understand their failings in Iraq and Afghanistan as being optimistic signs for global Liberty. Learn & repeat.
>
> Conclusion of conclusion: there is a decent chance that Netwar will cripple American offensive capability in unjust wars due to moral loss…
>
> War, by the people, for the people, and of the people must be the inevitable consequence of transparency on the battle field. Because, to win, the left hand must know what the right hand is doing, and the right hand is stuffing money down Dick Cheney's pants.[76]

The effect on hierarchies' internal communications is much like John Boyd described in informational terms earlier in this chapter. In fact Boyd himself referred to a similar effect in moral warfare:

> *Physically* we can *isolate* our adversaries by severing their communications with outside world as well as by severing their internal communications to one another…
>
> *Morally* our adversaries *isolate* themselves when they visibly improve their wellbeing to the detriment of others… by violating codes of conduct or behavior patterns that they profess to uphold or others expect them to uphold.[77]
>
> Such contradictions within ourselves "destroy our internal harmony" and "paralyze us."[78]

Erica Chenoweth argues that the point of nonviolent civil resistance is not so much to persuade the rulers as 1) to "expose the lie" to the public and thereby undermine the ideological basis for compliance, and 2) demoralize officials within the regime so that they stop enforcing its directives.

> 2. Every oppressive regime has ambivalent insiders. All regimes are, in the end, totally dependent on the obedience of those who support it—economic, military, media, and civilian elites. When such insiders (Sinna, Plutarch, etc.) stop obeying the regime, and its pillars of support begin to crack, it's the beginning of the end. Insiders, too, are often intimately familiar with the regime's vulnerabilities and are therefore quite well-disposed to challenge it.
> 3. Power is essentially psychological. No regime can repress all of the people all of the time. So many regimes rely on terror to suppress dissent. And by and large, it works—until it doesn't.

[76] Erik Slavin, "New Chinese anti-ship missile may complicate relations with U.S.," *Stars and Stripes*, July 19, 2010 <www.stripes.com>.

[77] Kevin Carson, "Vinay Gupta: The Authoritarian Cause Will Be Defeated by Its Own Cognitive Dissonance," *P2P Foundation Blog*, January 17, 2012 <blog.p2pfoundation.net>.

[78] John Boyd, "The Strategic Game of/and/" (June 1987), p. 47

4. It's all about exposing the lie. The psychological power of terror ends when people simply decide to stop being afraid. Then it's all over. Like in the books when the Districts end up rebelling once they realize that 1) the Capitol is (and always has been) vulnerable to challenge; (2) all information coming out of the Capital is (and always was) lies; and (3) all they have to do (now and ever) is coordinate their uprisings. The people of the districts realized they had the power all the time. As soon as this "cognitive liberation" was achieved, it was all over for the Panem of the Hunger Games.[79]

Horizontal, networked communications technologies enable unprecedented speeds of phase transition in public consciousness. Doug McAdam coined the term "Cognitive Liberation" for "a process in which people suddenly and collectively decide that they are no longer afraid, that their recent fear or apathy was based on lies, and that there is no going back to the old ways of thinking."[80] Once a critical mass of the public decides that change is inevitable, it is. And with networked communications technology, that critical mass may coalesce suddenly and unexpectedly.

Although we've so far discussed the problem of cognitive dissonance largely in terms of cohesion between the rulers and domestic population, or between the rulers and rank-and-file security functionaries who enforce their will, it also applies to internal cohesion within the ruling elite itself. Things are complicated for the U.S. ruling elite (I make the assumption that the U.S., as global military hegemon and core state of the global corporate system, will be the center of any effort at repression), in a scenario of mass repression of the domestic population or aggressive foreign wars against peaceful secessionists from the corporate world order, by the problem of internal divisions.

The situation is further complicated, at the Empire's core, by the contaminating effects of the surrounding American society's culture. I hate to sound like an American exceptionalist. But while it's no doubt easy to find a sufficient number of specialized functionaries in uniform who are willing to waterboard or provide "technical advice" to Pinochet, I doubt there are a sufficient number to provide a stable and internally coherent pool of functionaries to serve the daily needs of such a system. When you look at the sheer numbers of grunts in uniform that are required—police or military—I suspect a majority of them would be so contaminated by the residual effects of Midwestern checkered tablecloths and apple pie, civics book rhetoric about "democracy," etc., as to be quite unreliable in a Winter Palace guards scenario. And that's not even counting the enormous number of cubicle drones required to carry out the administrative functions of the corporate state. So there would probably be a considerable rate of open defiance, and a much higher rate of quiet defection and internal sabotage.

This is all just further illustration of Assange's general observation, noted earlier, about bureaucracies closing in on themselves because they cannot trust their own lower-level functionaries. Hierarchies respond to outside attacks by becoming even more centralized, authoritarian and

[79] *Ibid*., p. 55.

[80] Erica Chenoweth, "Five Lessons from 'The Hunger Games'," *Rational Insurgent*, June 11, 2012 <rationalinsurgent.wordpress.com>. She writes elsewhere "Nonviolent resistance does—not necessarily succeed because the movement convinces or converts the opponent. It succeeds when the regime's major sources of power—such as civilian bureaucrats, economic elites, and above all the security forces—stop obeying regime orders." "Think Again: Nonviolent Resistance," *Foreign Policy*, August 24, 2011 <www.foreignpolicy.com>.

brittle. And they respond to internal defection, leaks and sabotage by becoming more opaque to themselves, adopting more cumbersome and slow-moving decision-making procedures, and cutting off increasing numbers of decisionmakers from the flow of information required to make intelligent decisions. It's quite likely the bureaucracy governing Skynet would end up looking a lot like that of Neal Stephenson's fictional Feds in *Snow Crash*. Or the fictional example we saw above from *Brazil*, of the Ministry of Works attempting to plug a hole created by the Ministry of Information: "Bloody typical—they went metric again without telling us!"

Another question concerns the possible emergence of new, authoritarian institutions in the power vacuuum left by the destruction of the previous ones.

In Murray Bookchin's typology of revolutions, revolutionary movements generate local organs of self-management and self-governance: soviets, workers' factory committees, neighborhood assemblies, and so forth. Orwell's description of Barcelona in the July days of 1936, in *Homage to Catalonia*, is a good illustration. Unfortunately, the next step is usually for a new revolutionary regime to consolidate its power, and either coopt or liquidate the organs of self-governance, and proclaim itself the only legitimate institutional representative of the revolution—now that the situation has been "normalized." It's a common pattern: the Thermidorean Reaction and the Directory in France, the Bolsheviks' liquidation of the Workers Opposition and parties of the libertarian Left and suppression of the Kronstadt Revolt, etc.

> These are not simple consequences of a revolution happening "unprepared", so to speak. Indeed; they happen chiefly when small but well-organised groups are able to gain enough traction to take over the violent enforcement apparatus from the old regime. Those small groups usually have a very well-defined agenda, and they tend to be extremely dogmatic about that agenda.[81]

But the networked revolution prefigured by the Zapatistas, and currently presenting itself in the form of the Arab Spring and Occupy Wall Street, is the first in history in which the technical means which made the revolution possible in the first place also help to make the successor society ungovernable by any would-be "revolutionary regime."

III. The Question of Collapse

The material in the previous section on distributed, modular architectures is relevant to traditional collapse scenarios.

Joseph Tainter argued that the greater the complexity, the more additional complexity is required to deal with it. Increasing complexity is the only way to solve problems—until you can no longer "afford it."[82]

John Michael Greer's collapse scenario is based largely on Tainter's analysis:

> The central idea of catabolic collapse is that human societies pretty consistently tend to produce more stuff than they can afford to maintain… As societies expand and

[81] Chenoweth, "'Cognitive Liberation' in Syria?" *Rational Insurgent*, June 18, 2012 <rationalinsurgent.wordpress.com>.

[82] "Revolutions Deserved," *anarchism.is*, November 16, 2011 <anarchism.is>.

> start to depend on complex infrastructure to support the daily activities of their inhabitants… , the maintenance needs of the infrastructure and the rest of the society's stuff gradually build up until they reach a level that can't be covered by the resources on hand.
>
> It's what happens next that's crucial to the theory. The only reliable way to solve a crisis that's caused by rising maintenance costs is to cut those costs, and the most effective way of cutting maintenance needs is to tip some fraction of the stuff that would otherwise have to be maintained into the nearest available dumpster. That's rarely popular, and many complex societies resist it as long as they possibly can, but once it happens the usual result is at least a temporary resolution of the crisis. Now of course the normal human response to the end of a crisis is the resumption of business as usual, which in the case of a complex society generally amounts to amassing more stuff. Thus the normal rhythm of history in complex societies cycles back and forth between building up, or anabolism, and breaking down, or catabolism. Societies that have been around a while—China comes to mind—have cycled up and down through this process dozens of times, with periods of prosperity and major infrastructure projects alternating with periods of impoverishment and infrastructure breakdown.
>
> A more dramatic version of the same process happens when a society is meeting its maintenance costs with nonrenewable resources… Sooner or later you run into the limits of growth; at that point the costs of keeping wealth flowing in from your empire or your oil fields begin a ragged but unstoppable increase, while the return on that investment begins an equally ragged and equally unstoppable decline; the gap between your maintenance needs and available resources spins out of control, until your society no longer has enough resources on hand even to provide for its own survival, and it goes under.
>
> That's catabolic collapse. It's not quite as straightforward as it sounds, because each burst of catabolism on the way down does lower maintenance costs significantly, and can also free up resources for other uses. The usual result is the stairstep sequence of decline that's traced by the history of so many declining civilizations—half a century of crisis and disintegration, say, followed by several decades of relative stability and partial recovery, and then a return to crisis; rinse and repeat, and you've got the process that turned the Forum of imperial Rome into an early medieval sheep pasture.[83]

Greer tacitly assumes that "progress" equates to "increased complexity and capital-intensiveness," and that resource constraints translate into a less advanced way of life. So he shares certain unexamined assumptions with thinkers like Joseph Schumpeter, John Kennneth Galbraith and Alfred Chandler—what might be called the Whig Theory of Industrial History.

> Could an electrical grid of the sort we have today, with its centralized power plants and its vast network of wires bringing power to sockets on every wall, remain a feature of life throughout the industrial world in an energy-constrained future? If attempts to make sense of that future assume that this will happen as a matter of

[83] "Interview with Joseph Tainter on the Collapse of Complex Societies," <p2pfoundation.net>.

> course, or start with the unexamined assumption that such a grid is the best (or only) possible way to handle scarce energy, and fixate on technical debates about whether and how that can be made to happen, the core issues that need to be examined slip out of sight. The question that has to be asked instead is whether a power grid of the sort we take for granted will be economically viable in such a future—that is, whether such a grid is as necessary as it seems to us today; whether the benefits of having it will cover the costs of maintaining and operating it; and whether the scarce resources it uses could produce a better return if put to work in some other way.[84]

It's not that Greer doesn't recognize the likelihood of shifting to a more distributed, less resource-intensive power system—perhaps a mix of centralized grids in concentrated urban areas and local generating facilities at the point of consumption in rural areas. He specifically refers to it in the same post. It's that he assumes such a system is incompatible with the Internet, and that a scalable Internet using such a power infrastructure is outside the realm of the possible.

Greer's scenario ignores a central reality: the rapid implosion, governed by something analogous to Moore's law, in the amount of "stuff" required to organize basic communication functions. When you break the linear relationship between the cost of "stuff" in an infrastructure and the functions it performs, all bets are off.

Greer and Pollard assume a remarkably static view of technology, in their projections of catabolic collapse of the Internet. Even their pessimistic scenarios assume the basic infrastructure won't start to collapse on a significant scale until the mid-21st century. So their collapse scenarios are only meaningful on the assumption that the Internet's physical infrastructure is organized, thirty or forty years from now, on the same centralized, expensive and capital-intensive model as at present.

This neglects a number of considerations. It neglects the possibility that the present level of capital-intensiveness in our basic infrastructures results not from some inherent technological imperative, but from the state tipping the balance towards one of the least efficient among a number of competing models. It neglects the possibility that the physical infrastructures of the Internet will plummet faster than the resources for maintaining it. It neglects the extent to which the opensource community is already actively developing the technologies of transition to a cheap, distributed infrastructure. And it underestimates the extent to which much lower cost, underutilized infrastructures like railroads and the Internet offer an alternative to the older, capital-intensive infrastructures undergoing catabolic collapse. One major difference between the present situation and the fall of Rome: Rome had no cheaper infrastructures as an obvious, low-hanging fruit alternative to the imperial highways and aqueducts.

Greer's catabolic collapse scenario—as illustrated by the example of the Easter Islanders—also assumes a relatively small amount of slack, at crisis points, in terms of available uncommitted resources that can be used to convert to less resourceintensive ways of doing things.

> On Easter Island, as I think most people know by now, the native culture built a thriving society that got most of its food from deepwater fishing, using dugout canoes made from the once-plentiful trees of the island. As the population expanded, however, the demand for food expanded as well, requiring more canoes, along with

[84] John Michael Greer, "The Onset of Catabolic Collapse," *The Archdruid Report*, January 19, 2011 <thearchdruidreport.blogspot.com>.

> many other things made of wood. Eventually the result was deforestation so extreme that all the tree species once found on the island went extinct. Without wood for canoes, deepwater food sources were out of reach, and Easter Island's society imploded in a terrible spiral of war, starvation, and cannibalism.
>
> It's easy to see that nothing would have offered as great an economic advantage to the people of Easter Island as a permanent source of trees for deepwater fishing canoes. It's just as easy to see that once deforestation had gone far enough, nothing on Earth could have provided them with that advantage. Well before the final crisis arrived, the people of Easter Island—even if they had grasped the nature of the trap that had closed around them—would have faced a terrible choice: leave the last few big trees standing and starve today, or cut them down to make canoes and starve later on. All the less horrific options had already been foreclosed.[85]

Greer's treatment of the Internet as an enormously costly infrastructure of energy-devouring server farms, doomed to be abandoned by most as an expensive toy for the rich and eventually left to collapse altogether, seems to be a gross exaggeration as well. It turns out that the energy-intensiveness of the Internet is mostly an urban legend, resulting mainly from the work of a couple of right-wing coal industry shills over a decade ago. The Internet, in fact, accounts for a quite modest share of total electricity consumption and has produced net savings from dematerializing many functions.[86]

And although the two have mostly coincided in the past, Tainter's model of society reaching a new equilibrium at a lower level of complexity does not necessarily mean less sophisticated technology. In fact the trend now is toward increased simplicity and resilience through modular architecture.

The old centralized corporate-state infrastructure is indeed undergoing a catabolic collapse scenario described quite well by Tainter's framework of "catabolic collapse." Consider John Robb's prediction of what will happen to the old electrical power distribution infrastructure:

> Back in 1999, a cleverly written article was published in *Forbes* magazine, claiming that the Internet used 8% of all US electricity, that all computers (including the Internet) used 13% of US electricity, and that this total would grow to half of all electricity use in ten to twenty years…
>
> Joe Romm, Amory Lovins, and I spent a few person years of effort between us demonstrating in the scientific literature that these assertions were all false… The Internet, as defined by the *Forbes* authors, used less than 1% of US electricity in 2000, all computers used about 3%…
>
> … [W]hile it's a good idea to make computers energy efficient, it's even more important to focus on the capabilities information technology (IT) enables for the broader society. Computers use a few percent of all electricity, but they can help us to use the other 95+% of electricity (not to mention natural gas and oil) a whole lot more efficiently.

[85] John Michael Greer, "The Logic of Abundance," *The Archdruid Report*, March 24, 2010 <thearchdruidreport.blogspot.com>.

[86] Greer, "The Economics of Decline," *The Archdruid Report*, May 20, 2009 <thearchdruidreport.blogspot.com>.

As an example of this latter point, consider downloading music versus buying it on a CD. A study that is now "in press" at the peer-reviewed *Journal of Industrial Ecology* showed that the worst case for downloads and the best case for physical CDs resulted in 40% lower emissions of greenhouse gases for downloads when you factor in all parts of the product lifecycle. When comparing the best case for downloads to the best case for physical CDs, the emissions reductions are 80%… In general, moving bits is environmentally preferable to moving atoms, and whether it's dematerialization (replacing materials with information) or reduced transportation (from not having to move materials or people, because of electronic data transfers or telepresence) IT is a game changer.

- Nothing new will be built. We are just realizing we are bankrupt. Our collective wealth has been squandered and stolen, never to be seen again. This means the investment dollars available for improvements and expansion of the electricity grid don't exist. What does get funded, gets stopped by a justified NIMBY (not-inmy-backyard) movement. So, even if there were a plentiful, sustainable, and inexpensive new supply of centralized electricity production available, it's very likely it would never reach the customers that would use it.
- The grid will fall into disrepair and become intermittently available. As we become poorer, funding for the maintenance of the national grid will evaporate. As a result, we will see more breakdowns. Further, we will see sources of centralized electricity supply become intermittent, as suppliers go offline due to sagging demand or government attempts to regulate prices in a fragile economy.
- The grid will be intentionally broken. As our economies fall deeper into depression, our political and social systems will follow them into the abyss. Attacks on the grid infrastructure will become more frequent as criminals strip lines of precious metals and domestic guerrillas attack the lines cause disruption.[87] The difference is that, unlike previous collapses (the classic example is the catabolic collapse of the Western Roman Empire) the old infrastructure this time isn't all there is.

For the first time there is an alternative. The old system, indeed, has responded to stresses with increased complexity (i. e., adding more and more parts which require more and more organization). But new network technologies have created unprecedented possibilities for responding to complexity through decentralizing and hardening, modularization, and degovernancing. And what amounts to a new, distributed infrastructure is emerging within the old, dying society.

Tainter's equilibrium at a lower level of simplification can be achieved, not only through a regressive decrease in connectedness, but by adopting more less capital-intensive and more resilient modular architectures.

[87] Joe Romm, "Debunking the myth of the internet as energy hog, again: How information technology is good for climate," *ThinkProgress.org*, June 21, 2013 <thinkprogress.org>. Romm quotes his friend Jonathan Koomey, who has done most of the work debunking the energy-hog myth:

Conclusion

The implosion of capital outlays associated with the desktop revolution, and the virtual disappearance of transaction costs of coordinating action associated with the network revolution, have (as Tom Coates said above) eliminated the gap between what can be produced in large hierarchical organizations and what can be produced at home in a wide range of industries: software, publishing, music, education, and journalism among them.

The practical significance of this, which we shall develop in the following chapters, is that many of the functions of government can be included in that list. The central theme of this book is the potential for networked organization to constrain the exercise of power by large, hierarchical institutions in a way that once required the countervailing power of other large, hierarchical institutions.

4. The Desktop Revolution in Regulation

I. The Regulatory State: Myth and Reality

Under the old industrial age paradigm, most forms of economic activity required enormous outlays of physical capital, so that only large organizations could afford the capital assets; massive, centralized bureaucracies were needed to govern those physical assets and direct the labor hired to work them. And monitoring these massive bureaucracies was another function that could only be performed by other large bureaucratic organizations.

That's the standard "interest group pluralism" model taught by most mainstream political scientists, and the model of "countervailing power" John Kenneth Galbraith described in *American Capitalism*: Big Business, Big Government, and Big Labor check each other's power.[1]

Unfortunately, the reality is generally better described by the "Power Elite" model of C. Wright Mills and G. William Domhoff: a fairly small interlocking directorate of government and corporate leadership, with the same few thousand people shuffling around between government agencies and Cabinet departments, corporate boards and c-suites, and the big foundations, universities and think tanks.

The state has become centralized under a concentrated executive regulatory apparatus, while the economy has become centralized under a few hundred giant corporations. "As each of these domains becomes enlarged and centralized, the consequences of its activities become greater, and its traffic with the others increases."[2]

So although the upper-middle class suits in the alphabet soup regulatory agencies act as ostensible "watchdogs" over the upper-middle class suits in the regulated industries, in reality they're largely interchangeable. The Vice President for This and That at Evil Global Megacorp LLC, five years from now, will most likely be a Deputy Assistant Secretary at Department of the Other Thing—and *vice versa*. And, Mills added, the corporate and state hierarchies are also united by a common culture through the services of an army of corporation lawyers and investment bankers in staff positions.[3]

As Paul Goodman described it, rather than checking each other, the regulatory bureaucracies and regulated bureaucracies more often than not cluster together in complexes of related institutions: "the industrial-military complex, the alliance of promoters, contractors, and government in Urban Renewal; the alliance of universities, corporations, and government in research and development."[4]

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[1] John Robb, "Is 8 Hours a Day of Electricity in Your Future?" *Resilient Communities*, March 20, 2012 <www.resilientcommunities.com>.

[2] John Kenneth Galbraith, *American Capitalism: The Concept of Countervailing Power* (Boston: Houghton Mifflin, 1962).

[3] C. Wright Mills, *The Power Elite*. New Edition (Oxford University Press, 1956, 2000), p. 7.

[4] Mills, *Power Elite*, p. 291. Consider, for example, the composition of FDR's "brain trust," and particularly the role of GE chief Gerald Swope in formulating the New Deal economic agenda.

> … [T]he genius of our centralized bureaucracies has been, as they interlock, to form a mutually accrediting establishment of decision-makers, with common interests and a common style that nullify the diversity of pluralism.[5]

Such clusters—or complexes—also include the USDA-agribusiness complex, the automobile-trucking-highway complex, the alliance between the proprietary content industries (RIAA/MPAA/Microsoft) and the Justice Department, the public education-human resources complex, the Drug War-border control-prison complex, and the post-9/11 security-industrial complex, among many others.

To quote Mills again, the theory of interest group pluralism, that interests of competing groups are "balanced" in a neutral venue,

> also assumes that the units in balance are independent of one another, for if business and labor or business and government, for example, are not independent of one another, they cannot be seen as elements of a free and open balance. But as we have seen, the major vested interests often compete less with one another in their effort to promote their several interests than they coincide on many points of interest and, indeed, come together under the umbrella of government. The units of economic and political power not only become larger and more centralized; they come to coincide in interest and to make explicit as well as tacit alliances.[6]

These coalitions between regulated and regulators sometimes enlist wellmeaning liberal idealists: the so-called "Baptists and Bootleggers" phenomenon. It was originally named for the tendency of teetotaling Baptist politicians to serve as useful idiots for bootleggers who didn't want to have to compete with legal liquor sales, and who preferred the black market profits they could obtain in dry counties.

The general phenomenon includes all cases where "progressive" regulators, or activists for more regulation, have unwittingly served the interests of the regulated. Gabriel Kolko presents considerable evidence that the regulated industries were a primary influence on the Progressive Era regulatory state. His thesis, in *The Triumph of Conservatism*, was this:

> Despite the large numbers of mergers, and the growth in the absolute size of many corporations, the dominant tendency in the American economy at the beginning of this century was toward growing competition. Competition was unacceptable to many key business and financial interests, and the merger movement was to a large extent a reflection of voluntary, unsuccessful business efforts to bring irresistible competitive trends under control. Although profit was always a consideration, rationalization of the market was frequently a necessary prerequisite for maintaining long-term profits. As new competitors sprang up, and as economic power was diffused throughout an expanding nation, it became apparent to many important businessmen that only the national government could rationalize the economy. Although specific conditions varied from industry to industry, internal problems that could be solved only by political means were the common denominator in those industries whose leaders advocated greater federal regulation. Ironically, contrary to

[5] Goodman, *People or Personnel*, p. 115.

[6] Goodman, *Like a Conquered Province*, p. 357.

> the consensus of historians, it was not the existence of monopoly that caused the federal government to intervene in the economy, but the lack of it.[7]

Economic rationalization—i.e., cartelization of the economy—was to be achieved through what Kolko called "political capitalism":

> *Political capitalism* is the utilization of political outlets to attain conditions of stability, predictability, and security—to attain rationalization—in the economy. *Stability* is the elimination of internecine competition and erratic fluctuations in the economy. *Predictability* is the ability, on the basis of politically stabilized and secured means, to plan future economic action on the basis of fairly calculable expectations. By *security* I mean protection from the political attacks latent in any formally democratic political structure. I do not give to *rationalization* its frequent definition as the improvement of efficiency, output, or internal organization of a company; I mean by the term, rather, the organization of the economy and the larger political and social spheres in a manner that will allow corporations to function in a predictable and secure environment permitting reasonable profits over the long run.[8]

For example, Kolko argued, the main political impetus behind Progressive Era regulations like the Meat Inspection Act was lobbying by the regulated industries—the large meat-packers in the latter case. Contrary to the high school American history version, the large meat-packers had actually been under an inspection regime since the late 19th century. After a public relations disaster involving tainted canned meat imported into Europe from Armour, the U.S. government had established an inspection system for all meat-packers producing for the export trade. This was actually done in the interest of the regulated industry, since the regime was of essentially the same sort that would have been established by an industry cartel. It served as a sort of official seal of approval that was useful for marketing purposes; but because it was imposed across the board on all the meat export firms—which included all the large packers—it wasn't an issue of cost competition between them. And because it was a government-enforced cartel, it avoided the destabilizing threat of defection. Its main shortcoming, from the perspective of the regulated meat-packers, was that it exempted the small meat-packing firms that produced solely for the domestic market. The Meat Inspection Act was actually passed to close this loophole, to avoid giving a competitive advantage to the small players.[9]

The idealistic novelist Upton Sinclair served as a useful idiot, by clothing this cynical government-industry collusion in the goo-goo raiment of "general welfare." And when we look at the man behind the curtain, we find that there's a similar story behind most "public interest" regulation. As Roy Childs put it, historically "liberal intellectuals" have been "the 'running dogs' of big businessmen."[10]

The liberal panacea for remedying regulatory capture is structural reform: campaign finance regulations, public financing of campaigns, restrictions on contact with lobbyists, and restriction on corporate employment of former regulators or legislators. But it's important to remember

[7] Mills, *Power Elite*, pp. 266–267.

[8] Gabriel Kolko, *The Triumph of Conservatism: A Reinterpretation of American History, 1900–1916* (New York: The Free Press, 1963), pp. 4–5.

[9] *Ibid*., p. 3.

[10] *Ibid*., pp. 98–112.

that this isn't a problem just because of political collusion or deliberate attempts to manipulate regulations. Much or most of the problem would remain even if all election campaigns were publicly financed, and there were real restrictions on the rotation of personnel between state and corporate hierarchies.

The perspective of the so-called "structural Marxists" is relevant here: The state does not have to serve as an instrument of capitalist interests in the crude sense of being influenced by subjective motivations like personal interconnections and bribery—the so-called "instrumentalist" theory of the state. Even with public financing and other procedural reforms, the policy-making apparatus would act based on the logic of the overall system within which it was embedded, in response to what it perceived as its objective imperatives. Such imperatives include avoiding a stock market crash that cleans out 401k accounts, mass unemployment or large-scale capital flight. The leadership of the state, given its functional role in the larger system, inevitably finds itself confronted with the need to stabilize and reproduce the corporate capitalist system as it finds it. To quote Nicos Poulantzas:

> The *direct* participation of members of the capitalist class in the state apparatus and in the government, even where it exists, is not the important side of the matter. The relation between the bourgeois class and the State is an *objective relation*. This means that if the *function* of the State in a determinate social formation and the *interests* of the dominant class in this formation *coincide*, it is by reason of the system itself: the direct participation of members of a ruling class in the State apparatus is not the *cause*, but the *effect*, and moreover a chance and contingent one, of this objective coincidence.[11]

The state doesn't just serve corporate interests because it's controlled by them in a crudely instrumental sense—although in many cases it is—but because the very structure of the corporate economy and thesituations it creates confront the state leadership with what is perceived as an objective reality. "But now, given political expectations and military commitments, can they [the state] allow key units of the private corporate economy to break down in slump?"[12] In essence, the crudely instrumentalist stuff is an epiphenomenon of the structural stuff.

As Matthew Yglesias wrote of "getting money out of politics":

> To me, this doesn't solve the problem that when Washington regulates the financial system, it's dependent for expertise on people with ties to the financial industry… It doesn't solve the problem that politicians need the "legislative subsidy" of lobbyists to do policy analysis. Nor does it solve the problem of monied interests exercising disproportionate influence over think tanks, advocacy groups, or even (through speaking fees and the like) journalists and pundits…
>
> I'd say that in general, the problems we have with money and politics aren't really that there's too much money "in" the politics and we need to get it "out."… [I]t's too

[11] Roy Childs, "Big Business and the Rise of American Statism," *Reason*, February 1971, pp. 12–18, and March 1971, pp. 9–12. Reproduced by Roderick Long at *Praxeology.net* <praxeology.net>.

[12] Nicos Poulantzas, "The Problem of the Capitalist State," *New Left Review* 58, p. 73; quoted in G. William Domhoff, *The Power Elite and the State: How Policy is Made in America* (New York: Aldine de Gruyter, 1990), p. 19.

> difficult for elected officials to get expert technical opinion on issues without relying on interested parties.[13]

Consider also what Mills had to say about divestiture of investments by corporate leaders appointed to political posts.

> The interesting point is how impossible it is for such men to divest themselves of their engagement with the corporate world in general and with their own corporations in particular. Not only their money, but their friends, their interests, their training—their lives in short—are deeply involved in this world. The disposal of stock is, of course, merely a purification ritual. The point is not so much financial or personal interest in a given corporation, but identification with the corporate world. To ask a man suddenly to divest himself of these interests and sensibilities is almost like asking a man to become a woman.[14]

Charlie Wilson really did believe what was good for GM was good for America.

As we've already seen in regard to the "Baptists and Bootleggers" phenomenon, a functionally instrumental view of the state does not require the assumption that all political actors are cynical operators out for the main chance. Many politicians—particularly the marginal ones on the fringes of their own party establishments—are sincere idealists. But by an invisible hand mechanism, such idealists get their ideas put into practice only when they coincide with the needs of the system.

Even those whose personal integrity and idealism are beyond reproach operate on an implicit set of views of what is possible and what is the obvious or natural response to a given problem. Regulators and regulated share not only similar educational and career backgrounds, but similar assumptions about what is possible.

> The members of the higher circles may also be conceived as members of a top social stratum, as a set of groups whose members know one another, see one another socially and at business, and so, in making decisions, take one another into account…[15]
>
> I… In so far as the power elite is composed of men of similar origin and education, in so far as their careers and their styles of life are similar, there are psychological and social bases for their unity, resting upon the fact that they are of similar social type and leading to the fact of their easy intermingling…
>
> II. Behind such psychological and social unity as we may find, are the structure and the mechanics of those institutional hierarchies over which the political directorate, the corporate rich, and the high military now preside.[16]

The ruling elites of the corporate-state nexus are what Thomas R. Dye called the "very serious people," and their mindset is characterized by what C. Wright Mills, in *The Causes of World War*

[13] Mills, *Power Elite*, p. 8.

[14] Matthew Yglesias, "What Problem is 'Getting Money Out of Politics' Supposed to Solve?" *Think Progress*, September 27, 2011<thinkprogress.org?>.

[15] Mills, *Power Elite*, p. 285.

[16] Mills, *Power Elite*, p. 11.

Three, called "crackpot realism." The "very serious people" used to be called "the best and the brightest"—or in Ward Churchill's terminology, "Little Eichmanns."

Crackpot realism amounts to the approach described by Einstein: attempting to solve a problem by the same level of thinking that created it. Crackpot realists, according to Mills, "do not set forth alternative policies; they do not politically oppose and politically debate the thrust toward war… These are men who are so rigidly focused on the next step that they become creatures of whatever the main drift the opportunist actions of innumerable men brings."[17] The crackpot realist's self-image is of the grownup who understands what needs to be done to keep things functioning smoothly in "the real world," and quietly does it behind the scenes, while the idealists and sloganizers occupy the public stage.

Libertarian Robert Higgs brilliantly summarized the crackpot realist mindset in his appreciation of Mills:

> Such people are to be distinguished from the glad-handing, back-slapping buffoons who seek and gain election to public office. The electoral office seekers are specialists: they know how to get votes, but as a rule they know nothing about how to "run a railroad," whether that railroad be a business, a government agency, or any other sort of large operating organization. So, after the election, the elected office holders always turn to the serious people to run the show—the Dick Cheneys and the Donald Rumsfelds, to pick not so randomly from the current corps.
>
> The serious people always pretend to be the grownups, as opposed to the starryeyed rest of us, who couldn't run Halliburton or G. D. Searle & Co. if our lives depended on it. These are the sorts of executives who are tempted to, and sometimes actually do, roll their eyes at the silly questions journalists ask them at press conferences. Visibly pained by the necessity of spelling out the facts of life, they explain that childish things, such as keeping the country at peace, simply won't get the job done. Sometimes, the public must recognize that as a no-nonsense response to the harsh situation we face, the serious people have to drop some bombs here and there in order to reestablish a proper arrangement of the world's currently disordered affairs. The serious people are frequently to be found "stabilizing" something or other.
>
> Trouble is, Mills explained, these serious people are fools. They seem to know what's going on, and how to right what's wrong with the world, only if one accepts their own view of how the world works. So "practical" are these serious people, however, that they understand nothing beyond their noses and outside the circle of their own constricted understanding and experience… Especially when these movers and shakers deal with matters of war and peace, they continue to make the same sorts of disastrous decisions over and over, constantly squandering opportunities to maintain the peace, almost invariably painting themselves into corners of their own making, and all too often deciding that the only option that makes sense in their predicament is to bomb their way out.[18]

[17] *Ibid*., p. 19.

[18] Quoted in Robert Higgs, "On Crackpot Realism: An Homage to C. Wright Mills," *The Independent Institute*, February 18, 2003 <www.independent.org>.

Reform within the system is governed by the Crackpot Realist approach, for obvious reasons. Such reforms are carried out by the people running the system, based on their institutional mindsets and basic assumptions about how the world works. Since the fundamental purpose of the system is good, and its basic operating assumptions are self-evident, any reform must obviously be limited to tinkering around the edges. Any reform coming out of the system will be designed to optimize the functioning of the existing system, and amenable to being carried out only by the managerial caste currently in charge of the system. What's more, since the unstated purpose of the present system is to serve the interests of those running it (or rather, since the stated purpose is tacitly interpreted so as to be identical with those interests), any attempt at "optimizing" the present system will translate in practice into further consolidating the power of the little Albert Speers and Bob McNamaras running things.

Hence the related concept of "extremism." That label is a way of evaluating ideas, not in terms of their truth or falsity, but in terms of how far they deviate from the median view of the world. And the median view of the world, otherwise known as the "moderate" position, is largely determined by a cultural apparatus that consists of centralized, hierarchical institutions, and whose main purpose is to secure a cultural environment which is favorable to the continued existence and power of those centralized, hierarchical institutions. By definition, whatever is classified as "mainstream" or "centrist" in any system of power falls within the range of positions that are compatible with preserving that system of power. In other words, the cultural reproduction apparatus—the media and schools—is designed to produce a public which accepts the organization of society around such institutions as the only possible way of doing things. Any proposal that involves changing the fundamental structure of power and disempowering the groups that run it will be called "extremist."

"Objectively collusive" relationships are inevitable—even without deliberate collusion—not only because of the shared culture of regulators and regulated, but because regulated industries are of necessity the primary source of data for the regulatory state. Short of creating a state-appointed shadow management of regulators who've been sent to b-school and constitute a parallel chain of command within the corporate bureaucracy (like the parallel shadow bureaucracy of Party officials serving as deputies to the state manager at every rung in the Soviet industrial bureaucracy), the regulatory state cannot avoid relying on largely unverifiable selfreporting by industry as the source of most of its statistics. And even if the state did create its own massive, parallel hierarchy of numbers-crunchers inside the corporate bureaucracies, in order to function effectively and understand the businesses they were regulating they'd have to have degrees in business administration and absorb a great deal of the culture of the regulated industries—which, presumably, would just take us back to the original problem.

Take, for example, the relationship between British Petroleum and the Naval command in charge of BP cleanup efforts in the Gulf last Spring. Mac McClelland, a reporter with *Mother Jones*, recounted her experience trying to clarify statistics:

> I wrote another piece last week when I got an email—you know, there's this guy from the Navy who sends out these official emails from the response center that says, here's what we've been doing, here's how the cleanup effort is going, here are, you know, all the stats that you need. And I called this lieutenant commander to ask him to check up on one of the stats which said that there are 24,000 responders working on the spill right now.

> And I was just—I mean, I was just curious, does that include, for example, Audubon volunteers who are, you know, cleaning up birds? Does that only mean people [who] are on the BP payroll? And so I called this guy from the Navy and asked him, do you have the breakdown for these numbers? And he said, I don't have them and they're not actually our numbers. Those are BP's numbers and so I'm going to have to get back to you on that.
>
> So not only is the government releasing BP numbers as official stats, they're not even fact-checking them. I mean, this guy didn't have a spreadsheet that could explain what the breakdown was. And it took several days for BP to get it back to him.[19]

Again, though, where would this lieutenant commander have obtained his own spreadsheet for fact-checking BP's numbers, short of the Navy's oversight operation maintaining an entire management bureaucracy parallel to BP's own for large-scale gathering and processing of raw data?

Whatever the reasons and motivation, the functional relationship between big business and big government will always be more cooperative than adversarial.

Thanks to desktop computers and the Internet, though, we don't have to rely on Tweedledum to monitor Tweedledee. For all the reasons we considered in the previous chapter, the entry barrier to being a watchdog has fallen to virtually zero.

According to Alex Carey, the 20th century model of representative "democracy" emerged, not as a way of putting the will of the majority into effect, but as a way of protecting ruling elites from the public. Three broad trends, roughly simultaneous, emerged around the turn of the twentieth century: the rise of formal democracy with universal suffrage, the rise of big business, and the need to protect big business from democracy.[20] The central problem for "actually existing representative democracy," in other words, has been to prevent the formal democracy from becoming actual—to preserve the rules of formal democracy while preventing the exercise of any real power by a popular majority. As Walter Lippmann put it, the public must remain "spectators of action" rather than "participants."[21]

The model of democracy promoted by ruling elites is a system "with regular elections but no serious challenge to business rule"—as opposed to "a system in which citizens may play some meaningful part in the management of public affairs."[22] Proudhon compared representative democracy to constitutional monarchy:

> The illusion of democracy springs from that of constitutional Monarchy's example—claiming to organize Government by representative means… What they always want is inequality of fortunes, delegation of sovereignty, and government by influential people. Instead of saying… the King reigns and does not govern, democracy says, the People reigns and does not govern…[23]

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[19] *Ibid*.

[20] "Op-Ed: Reporters Covering Oil Spill Stymied" (transcript) *NPR*, June 14, 2010 <www.npr.org>.

[21] Alex Carey, *Taking the Risk Out of Democracy: Corporate Propaganda versus Freedom and Liberty* (Champaign, Illinois: University of Illinois, 1996).

[22] Quoted in Noam Chomsky, "Force and Opinion," *Z Magazine*, July-August, 1991 <chomsky.info>.

[23] Chomsky, *Deterring Democracy*, Ch. 11.

The network revolution may mean the final realization of the very thing that Bernaise et al tried to thwart: the achievement of genuine democratic self-rule, not through the representative state, but through voluntary association.

II. Individual Superempowerment

According to Tom Coates, as quoted in the previous chapter, the desktop revolution has had an enormous effect in blurring the distinction in quality between work done within large organizations and that done by individuals at home. The individual has access to a wide array of infrastructures formerly available only through large organizations. As Felix Stalder writes:

> There is a vast amount of infrastructure—transportation, communication, financing, production—openly available that, until recently, was only accessible to very large organisations. It now takes relatively little—a few dedicated, knowledgeable people—to connect these pieces into a powerful platform from which to act.[24]

These free platforms can support an entire modular ecosystem of resistance movements.

The result is what John Robb calls "individual superempowerment": "the ability of one individual to do what it took a large company or government agency to do a couple of decades ago…"[25] Open-source warfare "enables individuals and groups to take on much larger foes," as

> the power of individuals and small groups is amplified via access to open networks (that grow in value according to Metcalfe's law = Internet growth + social networks running in parallel) and off the shelf technology (that grows rapidly in power due to the onslaught of Moore's law and the market's relentless productization).[26]

These primary technologies of individual superempowerment also have the secondary effect of lowering the transaction costs and overhead of swarming.

- Ubiquitous public transportation networks (roads to airlines) enable rapid, low-cost transportation for dispersed units.
- Logistics requirements can be met via open economic transactions and don't require population support. The requirements for operations are relatively limited (damage to infrastructure requires low-tech tools). Additionally, the small size of the cells (~5 people) requires little housing/food/etc and in most cases would fall well below the threshold of detection.
- Real-time, anonymous, wireless communications (both data and voice—VoIP, email, Web, cellphones, etc.) enable global guerrillas to coordinate dispersed operations on the operational level. Tactical operations will be of a conventional type, typically by a single unit or individual.[27] Compare this to Marina Gorbis's description of what she calls the "socialstructured society":

[24] Pierre-Joseph Proudhon, *The General Idea of the Revolution in the XIX Century*.

[25] Felix Stalder, "Leaks, Whistle-Blowers and the Networked News Ecology," n.n., November 6, 2010 <remix.openflows.com>.

[26] John Robb, "Julian Assange," *Global Guerrillas*, August 15, 2010 <globalguerrillas.typepad.com>.

[27] Robb, "Open Warfare and Replication," *Global Guerrillas*, September 20, 2010 <globalguerrillas.typepad.com>.

> Socialstructuring is in fact enabling not only a new kind of global economy but a new kind of society, in which amplified individuals—individuals empowered with technologies and the collective intelligence of others in their social network—can take on many functions that previously only large organizations could perform, often more efficiently, at lower cost or no cost at all, and with much greater ease… [A] world in which a large software firm can be displaced by weekend software hackers, and rapidly orchestrated social movements can bring down governments in a matter of weeks.[28]

Richard Telofski, a corporate consultant who writes on these issues from the standpoint (and that's an understatement) of the corporation, describes something that sounds quite similar to these ideas. After quoting Mark Twain on the folly of picking a fight with "a man who buys his ink by the barrel," Telofski updates the principle for the 21st century: "never get in a dispute with someone with access to a computer," or "who is mad enough and persistent enough to make your life 'hell.'" He illustrates the basic principle with a saying of Sonny Crockett on *Miami Vice*, who threatened to "clear my desk of all my other cases and make your life a living hell."[29]

Malcolm Gladwell dismisses networked activism, of the kind organized through social media, on the grounds that it's "built on weak ties." It doesn't elicit the same levels of personal commitment, or require the same levels of sacrifice from those buying into it, as did (say) the sit-ins of the Civil Rights era. It is, he says, a cheap substitute for commitment. "if you're taking on a powerful and organized establishment you have to be a hierarchy."[30] I think this misses the point.

Gladwell argues that the levels of effort and commitment involved in most networked participation are quite casual compared to the dedicated effort required for real change. But he's assuming that the amount of effort needed to combat hierarchies is itself fairly constant. The real change, which he ignores, is the shift in the relative balance of power between individuals and small groups, versus hierarchies: the rapidly declining amount of effort it takes for a motivated individual to put a serious hurt on a large institution. His reference to the level of commitment needed to "persevere in the face of danger" is begging the question. The amount of damage that one pissed-off individual can do to a hierarchy with little or no danger to herself is increasing exponentially.

The beauty of individual super-empowerment is that it lowers the levels of cost or sacrifice *required* to inflict major defeats on hierarchical targets. The reduced levels of risk made possible by new technologies of encryption, enabling networked movements to operate under the cover of darknets, are a plus. The whole point of networked organization is that it shifts the balance of power. Gladwell sounds a bit like an aging geek boasting that "in my day, we had to use a slide rule!"

Gladwell himself admits that an advantage of network structures is that they are "enormously resilient and adaptable in low-risk situations." But he neglects the possibility that the level of risk itself is not a constant—that warfare against state and corporate hierarchies is becoming a

[28] Robb, "Global Guerrilla Swarming," *Global Guerrillas*, May 18, 2004. Reproduced as "Developing WikiStrike as a Counter Swarm-Attack Strategy for the 99% | via Global Guerrillas," *Social Network Unionism*, December 28, 2011 <snuproject.wordpress.com>.

[29] Marina Gorbis, *The Nature of the Future: Dispatches From the Socialstructured World* (New York, London, Toronto, Sydney, New Delhi: Free Press, 2013), p. 4.

[30] Richard Telofski, *Insidious Competition: The Battle for Meaning and the Corporate Image* (New York and Bloomington: iUniverse, Inc., 2010), pp. 44–45.

progressively lower-risk situation *because* of advances in network technology. The whole *point* of super-empowerment is that it lowers the risk and cost entailed in organizing against the state.

And whether or not they require the same levels of effort and risk as your grandfather's activism "back in *my* day," the examples of Wikileaks and Anonymous make it clear that in *our* day networks *are* achieving significant real-world results at minimal cost. A good example is the minimal effort required to spark the Occupy Wall Street action, whose proximate cause—as we shall see in the appendix—was just a tweet from the *Adbusters* editorial staff.

Of course none of this means that networked movements will lack a core of activists with the same level of commitment as the civil rights activists of fifty years ago. As David de Ugarte has argued, even in networked activism a single node will generally be the source of new initiatives.

But networked organization drastically lowers the transaction costs entailed in a single node of committed activists leveraging support through the network, and drastically increases the size of the larger coalition which the committed activists can leverage from the less committed. The increased ease of drawing additional support from the less committed does not reduce the preexisting number of the more committed who would have participated anyway. It just increases the bang for the buck from that preexisting level of commitment. And on the other hand, even if Gladwell wants to dismiss the significance of "activism" that consists of clicking a PayPal widget to contribute a few bucks, it's not like that person would have attended meetings and participated in marches absent such alternatives. They just wouldn't have given the money, either. As Cory Doctorow argues:

> " there isn't a smooth gradient of activity that you can use to engage and disengage from activism. And particularly, where activism goes on, it tends to be either people who have nothing to lose… your life becomes politics, or people who can afford to lose something… [That's why] mothers in particular are underrepresented in activist circles… When people sneer at clicktivism, they are essentially saying that they have a theory of change that involves only those with nothing to lose or those who can afford to lose something, and it is a horrifically privileged point of view to come from… If you want people to take a step, the smaller that step is the greater the likelihood that they will take it… [I would much prefer that] than start with "you must take up a whole Saturday and risk becoming kettled to take any affirmative step at all… "[31]

Movements are better off by the amount of each additional contribution, whether the contributor is strongly or weakly motivated. Would Gladwell prefer the strongly committed act alone *without* the additional help? As Adam Thierer wrote in response to a similar argument from Evgeny Morozov:

> … Morozov belittles some of the online communities that have formed to support various charitable or civic causes by arguing that if you divide the number of members of such online groups by the aggregate amount of money they raise, it comes out to mere pennies on the dollar per community member. But so what? Do we know if those communities or causes would have come together at all or spent more

[31] Malcolm Gladwell, "Small Change: Why the Revolution Will Not Be Tweeted," *New Yorker*, October 4, 2010 <www.newyorker.com>.

> money without digital communications and networking technologies? It is certainly true that merely setting up a new cyber-cause and giving a few bucks to it isn't the same as going on a mission to Africa to build homes and water systems, but does Morozov really want to us to believe that more of that sort of thing would happen in the absence of the Net and digital technology?[32]

Doctorow suggests that Morozov's snide approach—and the same critique applies to Gladwell—reflects a serious ignorance of real-world activism.

> Morozov observes the hundreds of thousands—millions, even—of people who are motivated to take some small step in support of a cause, such as changing their Twitter avatar or signing an online petition and concludes that the ease of minimal participation has diffused their activist energy. I look at the same phenomenon and compare it to the activist world I knew before the internet, in which the people who could be coaxed into participating in political causes were more apt to number in the hundreds or thousands, and reflect on the fact that every committed, lifelong activist I know started out as someone who took some small casual step and went on to greater and deeper involvement, and I conclude that the net is helping millions of people wake up to the fact that they can do something about the causes they care about and that some fraction of those people will go on to do more, and more, and more.[33]

Not to mention, as he points out, the sheer increase in efficiency network organization via the Internet makes possible in performing the routine administrative tasks of traditional activist organizations, and enabling them to shift personnel from tail to tooth:

> As to the question of privation as being key to hardening activists' commitment, I'm confident that for every task that is automated by the internet, new, difficult-to-simplify tasks will well up to take their place. As a lifelong political activist, I remember the thousands of person-hours we used to devote to putting up flyposters, stuffing envelopes, and running telephone trees simply to mobilise people for a protest, petition or public meeting (Morozov minimises the difficulty of this, asserting, for example, that Iranians would just find out, by word of mouth, about demonstrations, regardless of their tools—which leads me to suspect that he never tried to organise a demonstration in the pre-internet era). I'm sure that if we'd been able to get the word out to thousands of people with the click of a mouse, we wouldn't have hung up our placards and called it a day; that drudge work absorbed the lion's share of our time and our capacity to think up new and exciting ways to make change.[34]

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[32] Panel discussion at Yoko Ono's Meltdown festival at Southbank in London, on Technology and Activism,"Technology and Government: Where Does the Internet Fit?" *Cory Doctorow's Craphound*, June 23, 2013 <craphound.com>.

[33] Adam Thierer, "Book Review: *The Net Delusion* by Evgeny Morozov," *The Technology Liberation Front*, January 4, 2011 <techliberation.com>.

[34] Cory Doctorow, "We need a serious critique of net activism," *The Guardian*, January 25, 2011 <www.guardian.co.uk>.

> When you give people who aren't in the establishment access to coordination technology, they go through a phase change… When I was an activist in Toronto in the 1980s, 98% of my job consisted of stuffing envelopes and putting addresses on them, and 2% consisted of figuring out what to put in the envelopes. We get that free now, and that is a massive game-changing thing that has arisen as a consequence of communications technology.[35]

In *The Coming Swarm*, Molly Sauter demolishes Gladwell's and Morozov's critique of Internet-based, "weak ties" activism as being somehow "too easy" compared to traditional activist movements. The real problem is that such critics lionize a model of civil disobedience—beloved of liberal memory—that centers on the drama of "willful violation of the law; deliberate arrest; and having one's day in court."[36]

> These critiques make a series of assumptions about the purpose and practice of activism and often ground themselves historically in the civil Rights Movement and the antiVietnam War protests. In this model, worthwhile activism is performed on the streets, where the activist puts himself in physical and legal peril to support his ideals. Activism is "hard," not *anyone* can do it. Activism has a strong, discernable effect on its target. If the activist is not placing herself in physical danger to express her views, then it is not valid criticism.
>
> … But [the "slacktivist" critique] fails to consider that activism can have many divergent goals beyond direct influence on power structures. It explicitly denies that impact on individuals and personal performative identification with communities of interest can be valid activist outcomes… It casts as a failure the fact that the simpler modes of digitally based activism allow more people to engage. As the cost of entrylevel engagement goes down, more people will engage. Some of those people will continue to stay involved with activist causes and scale the ladder of engagement to more advanced and involved forms of activism. Others won't. But there must be a bottom rung to step on…[37]

Sauter also challenges critics' nostalgia for civil disobedience "that seem[s] to originate from an ahistorical view of the development and implementation of civil disobedience in the United States… " Such popular understandings "stem from a narrativized view of iconic moments in political activism, such as the Civil Rights Movement, which do not take into account the realities faced by political movements as they develop or the particular challenges faced by activists attempting to operate in a novel environment such as the internet… " Criticisms based on this idealized version of history "ultimately chill innovation in political movements."[38]

> One aspect of civil disobedience that this nostalgia glosses over is its potential for disruption. The marches, sit-ins, and boycotts of the civil rights era were intensively disruptive and were intended to be so.[39]

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[35] *Ibid*.

[36] "Technology and Government: Where Does the Internet Fit?" op. cit.

[37] Molly Sauter, The Coming Swarm: DDoS Actions, Hacktivism, and Civil Disobedience on the Internet (New York, London, New Delhi, Sydney: Bloomsbury, 2014), p. 5.

[38] *Ibid*., p. 6.

[39] *Ibid*., p. 20.

> … this ahistorical myopia that encourages the exile of tactics such as occupations, blockades, monkey wrenching, defacements, culture jamming, strikes, sabotage, and many more from the popularly recognized repertoire of civil disobedience discourages activism and dissent… It should not be surprising that these disruptive, and in some cases destructive, tactics, often interpreted to fall outside the realm of "acceptable" political acts, are used primarily by groups that are historically underprivileged in the area of public politics. Students, blue-collar workers, inner-city youth, the homeless, those living below the poverty line, and other minorities are routinely pushed out of public political life because they are not engaging in what is popularly accepted as proper political conduct. These biases toward what "counts" as politically valid conduct and speech contributes to disfranchisement and narrows the public political discourse. By ignoring the potential legitimacy of these out-of-the-mainstream disruptive tactics, critics are contributing to this systemic disenfranchisement by artificially and harmfully restricting what political speech and conduct is acceptable and, by extension, whose.[40]

Seriously: do people like Gladwell and Morozov really believe the Seattle protests or Occupy Wall Street would ever have happened without the spontaneous swarming potential enabled by the Web? I'm surprised these good industrial age liberals haven't tried to prohibit unlicensed activism without the supervision of properly qualified professionals.

The beauty of the stigmergic form of organization we examined in the previous chapter is that the barriers to small contributions from independent actors are lowered. Individuals can make small contributions to a larger project, coordinating their own small efforts with the larger project through the common platform without any central coordinating authority. So stigmergic organization can leverage many, many small contributions that wouldn't have been worth the transaction costs of coordinating them in the old days. The larger project can incorporate efforts that would previously have been too small to bother with.

By the same token—as we saw earlier—new tactics developed at enormous cost by one node are now, thanks to stigmergic organization, immediately available at no cost to the entire network. So not only can small contributions be leveraged by large movements, large contributions can be leveraged by a large number of small movements. Either way, the contributions of each become a commonpool resource of all, and the transaction costs of aggregating all contributions— large and small—disappear.

Back in 2002, Javier Corrales noted that the hopes of "cyber-enthusiasts"— that "[t]he Internet would empower the political Davids… and restrain the Goliaths by making their actions easier to scrutinize"—never materialized.

> Few major transformations in politics seem to be occurring. The bursting of the dot-com bubble in 2002 further dampened the mood of cyber-enthusiasts. Those who once expected dot-coms to revolutionize democracy now feel embarrassed at their hyperbole.[41]

Looking back from my vantage point nine years later—I write the first draft of this passage in October 2011, nine months after the beginning of the Arab Spring and on the eve of Bloomberg's

[40] *Ibid*., pp. 22–23.
[41] *Ibid*., pp. 26–27.

threat to clear out Occupy Wall Street—it's easy to laugh at Corrales' dismissal. Sure, he really was to blame for missing the significance of stuff like Seattle and the campaigns against Nike and Shell. But a lot of it was natural, given the time he was writing in. His identification of the dotcoms with the hope for democracy is very telling. It was, in fact, the collapse of the dotcom bubble and with it the dead hand of Web 1.0 that made possible the revolution, organized through Web 2.0 technologies like social media, that *has* materialized.

Meanwhile, individual superempowerment has rendered the power of large organizations far less usable. In politics, the ability to garner a majority of votes no longer carries the power it did. "… [P]oliticians in government," Moises Naim writes, "are finding that their tenure is getting shorter and their power to shape policy is decaying." Increasingly easy for smaller players to impose gridlock.[42]

GOP obstructionism, especially by Tea Party representatives, enabled the opposition to paralyze Obama and veto much of the agenda that would traditionally have followed such an electoral victory. But Tea Party, in turn, is turning GOP into a regional minority party and paralyzing the leadership's ability to reach compromises even when it wants to. The old pattern was for the GOP to block Democratic legislation until they got all the concessions they could, then agree to a deal. Now when they're ready to make the deal the Tea Party threat keeps them from doing so.

III. The "Long Tail" in Regulation

The very same "long tail" phenomenon of incorporating small efforts at minimal transaction cost also applies to networked regulatory state functions. Before the network revolution, large-scale efforts were organized through hierarchies in order to reduce the transaction costs involved in coordinating actions between individuals. But hierarchies carried their own institutional costs, which meant that a regulatory bureaucracy could focus on only a few issues at a time—generally those most important to the people at the top of the hierarchy, or to the dominant groups in the ruling political coalition.

But if the old regulatory bureaucracy could do only a few big things—with apologies to Isaiah Berlin—the desktop regulatory state can do many things. That's a result of the lowered transaction costs of leveraging and aggregating small efforts, associated with stigmergic organization, which we saw in the previous chapter. To quote Clay Shirky:

> What happens to tasks that aren't worth the cost of managerial oversight? Until recently, the answer was "Those things don't happen." Because of transaction costs a long list of possible goods and services never became actual goods and services; things like aggregating amateur documentation of the London transit bombings were simply outside the realm of possibility. That collection now exists because people have always desired to share, and the obstacles that prevented sharing on a global scale are now gone. Think of these activities as lying under a Coasean floor; they are valuable to someone but too expensive to be taken on in any institutional way, be-

[42] Javier Corrales, "Lessons from Latin America," in Leslie David Simon, ed., *Democracy and the Internet: Allies or Adversaries?* Woodrow Wilson Center Press, Washington, D.C. (Baltimore and London: Johns Hopkins University Press, 2002), p. 30.

> cause the basic and unsheddable costs of being an institution in the first place make those activities not worth pursuing.[43]

Back when the only choices were doing stuff through institutions and not doing it at all, a lot of stuff just didn't get done at all. That's changed. Stuff that once was important to someone but not important enough to justify the cost just to satisfy the limited demand can now be done at little or no cost by small groups or individuals. "Loosely coordinated groups" not only perform functions once performed by large institutions, but "can now achieve things that were out of reach for any other organizational structure… "[44] This long tail is a natural outgrowth of the stigmergic principle we examined in the previous chapter. In the words of Scott Bradner, formerly a trustee of the Internet Society, "The internet means you don't have to convince anyone else that something is a good idea before trying it."[45]

The regulatory state, in particular, used to focus on a few, basic, minimal standards. Now the desktop regulatory state can tailor "regulations" to those who consume them. Now it is the regulated industries that use the old-line regulatory state to suppress the fine-tuned, long-tail regulatory state.

Networked reputational and rating systems can provide information on any aspect of corporate and other institutional performance that someone finds of interest. Information warriors and open-mouth saboteurs (see below), or whistleblowing sites, can expose any behavior they find objectionable.

IV. Networked Resistance as an Example of Distributed Infrastructure

Think back to our discussion in Chapter One of distributed infrastructure. Now let's consider networked resistance in light of the principles we discussed there. A conventional, old-style activist movement had to maintain an ongoing organizational apparatus with at least a minimal permanent infrastructure and staff, regardless of the actual level of activity. It was just another example of centralized infrastructure that had to be scaled to peak load, even though peak loads occurred only a tiny fraction of the time. It was an illustration of the 20/80 rule, with 80% of costs coming from the infrastructure required to handle the last 20% of the load. As we saw the authors of *Natural Capitalism* argue, by designing a central heating or cooling system to handle only the first 80% of the load, and addressing the other 20% through spot heating/cooling, one can reduce costs to an enormous degree.

A distributed infrastructure that's embedded mainly at end-points, likewise, is much more ephemeral and can operate on a much leaner basis.

Now read this passage from *Digitally Enabled Social Change*, by Jennifer Earl and Katrina Kimport:

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[43] Moises Naim, *The End of Power: From Boardrooms to Battlefields and Churches to States, Why Being in Charge Isn't What it Used to Be* (New York: Basic Books, 2013), p. 77.

[44] Shirky, *Here Comes Everybody*, p. 45.

[45] *Ibid*., p. 47.

> As we have shown, flash activism… is not about a steady and long stream of contention. Instead, it is about the effectiveness of overwhelming, rapid, but short-lived contention…
>
> On the participant's side, there has never before been an opportunity to be a fiveminute activist who navigates between participating in an e-tactic, checking Facebook, and doing job-related work on a computer. There have only been opportunities to spend hours or more coming together with people and put oneself in harm's way…
>
> We expect that the ease of participation, then, could produce quick rushes of participation when a call for participation is made. Further, these rushes of participation don't require high relative participation rates… Given that this is true, it is possible to have both flash-style activism and varying levels of activity by any given potential participant. If potential participants have time one day and not the next, mobilizations can go forward as long as some people have some time each day…
>
> … [S]ince the central tools needed to create e-tactics are usually software routines and databases, not the knowledge inside long-term activists' minds, e-tactic organizing is easy to shut off and restart later, unlike traditional organizing… Instead of SMOs [Social Movement Organizations], flash drives might hold the organizing blueprints (through archived Web pages and software) that allow online protest actions to be remounted in the future… [S]tarting a second petition is no harder years after a first one than it would be the next day… [W]hy not just shut off a movement and turn it back on later? Why not organize around something that is short term? Why not organize whenever the time seems right and not organize when it doesn't seem so? Without social movement activists to support, there can be real on and off switches that perhaps have fewer repercussions to a campaign's ability to mobilize.[46]

So just as a lean, distributed manufacturing system on the Emilia-Romagna model makes it possible to scale production to spot demand without the imperative to fully utilize capacity to amortize the high ongoing overhead from expensive mass production machinery, distributed/networked activism can scale particular actions to the needs of the moment without the need to maintain permanent, high-overhead infrastructure between actions and tailor the action to the needs of the movement infrastructure (which is exactly what the establishment Left is demanding from Occupy: to remake it in their image).

The reference to "organizing blueprints" being held on hard drives to "allow online protest actions to be remounted in the future" is relevant to our discussion in Chapter Two of the module—platform basis of network organization. The basic toolkit of techniques, software and templates of a networked movement—many of them developed through the experience of many local nodes—is available as a platform to the entire movement, or even to a meta-movement (like the complex of Arab Spring/M15/Syntagma/Occupy movements, Wikileaks, Anonymous), for individual nodes to use when and how they see fit.

In *The Homebrew Industrial Revolution: A Low-Overhead Manifesto*, I argued (or rather quoted Eric Hunting's argument) that open source, module/platform designs are a way of minimizing

[46] *Ibid*., p. 77.

R&D unit costs by spreading them out over an entire product ecology. A common, open-source library of techniques based on the past collective experiences of a wide body of local movements and nodes of movements enables the experience of any one node to become the common property of all—the same way an mp3 stripped of DRM by one geek and hosted on a torrent site becomes the freely-available property of every non-tech-savvy grandma who wants to hear the song. "In the modern repertoire, tactics are in fact thought to be modular so that multiple movements could benefit from the same tactical form."[47]

The "short tail" in conventional activism, as we saw in the previous section of this chapter, results from the high cost of doing anything. When the basic infrastructure of activism is distributed and available for any movement or node to piggyback on free of charge, it becomes possible to create new movements suited to "niche markets" at virtually zero marginal cost. As Earl and Kimport argue, social movements were traditionally about "weighty issues" because

> they have been expensive to create and grow, leading people to only attempt to create (and likely only succeed in creating) a movement when the stakes are high enough to justify the costs. But when the stakes are much lower, can the stakes be lower, too?[48]

This last—the lessening of stakes as overhead costs become lower—is the same principle I described for the economic and industrial realm in *Homebrew Industrial Revolution*: the lower the capital outlays and other sources of overhead or fixed costs, the lower the revenue stream required to service them; hence the greater the ability of an enterprise to weather slow periods without going in the hole, and the larger the portion of the revenue stream that's free and clear in good periods.

V. Informational Warfare (or Open Mouth Sabotage)

Perhaps the single most important way consumer and worker networks act as countervailing powers against corporate institutions is by exposing them to scrutiny. And the scrutiny to which government and corporate hierarchies are now liable to be subjected is far beyond their previous imagining.

As we saw in the previous chapter, the Mexican government was caught completely off guard by the amount of scrutiny its campaign against the Zapatistas received, and by the extent of global support for them. The subsequent appearance of networked activism as a standard feature of political life means that government and corporate actors are caught similarly off guard on a recurring basis. Like the Mexican government, global corporations get caught off guard when what once would have been isolated and easily managed local conflicts become global political causes. Even back in the 1990s, Naomi Klein wrote:

> Natural-resource companies had grown accustomed to dealing with activists who could not escape the confines of their nationhood: a pipeline or mine could spark a peasants' revolt in the Philippines or the Congo, but it would remain contained,

[47] Jennifer Earl and Katrina Kimport, *Digitally Enabled Social Change: Activism in the Internet Age* (Cambridge and London: MIT Press, 2011), pp. 184–186.

[48] *Ibid*., pp. 187–188.

> reported only by the local media and known only to people in the area. But today, every time Shell sneezes, a report goes out on the hyperactive "shell-nigeria-action" listserve, bouncing into the in-boxes of all the far-flung organizers involved in the campaign, from Nigerian leaders living in exile to student activists around the world. And when a group of activists occupied part of Shell's U.K. Headquarters in January 1999, they made sure to bring a digital camera with a cellular linkup, allowing them to broadcast their sit-in on the Web, even after Shell officials turned off the electricity and phones…
>
> The Internet played a similar role during the McLibel Trial, catapulting London's grassroots anti-McDonald's movement into an arena as global as the one in which its multinational opponent operates.[49]

Corporations are immensely vulnerable to informational warfare, both by consumers and by workers. The last section of Klein's *No Logo* discusses in depth the vulnerability of large corporations and brand name images to netwar campaigns.[50] She devoted special attention to "culture jamming," which involves riffing off of corporate logos and thereby "tapping into the vast resources spent to make

[a] logo meaningful."[51] A good example is the anti-sweatshop campaign by the National Labor Committee, headed by Charles Kernaghan.

> Kernaghan's formula is simple enough. First, select America's most cartoonish icons, from literal ones like Mickey Mouse to virtual ones like Kathie Lee Gifford. Next, create head-on collisions between image and reality. "They live by their image," Kernaghan says of his corporate adversaries. "That gives you a certain power over them… these companies are sitting ducks."[52]

At the time Klein wrote, technological developments were creating unprecedented potential for culture jamming. Digital design and photo editing technology made it possible to make incredibly sophisticated parodies of corporate logos and advertisements.[53] Interestingly, a lot of corporate targets shied away from taking culture jammers to court for fear the public might side with the jammers against the corporate plaintiffs—as they did against McDonald's in the McLibel case. The more savvy corporate bosses understand that "legal battles… will clearly be fought less on legal than on political grounds." In the words of one advertising executive, "No one wants to be in the limelight because they are the target of community protests or boycotts."[54]

And bear in mind that, back in the Mesozoic Era of Web 1.0 that Klein was writing about, informational warfare was limited largely to static websites, Usenet and email. Since then, Web 2.0 innovations like blogs, wikis, Facebook and Twitter have exploded the capabilities of informational warfare by *at least* an order of magnitude.

Klein borrowed Saul Alinsky's term "political jujitsu" to describe "using one part of the power structure against another part." Jujitsu, like most martial arts, uses an attacker's own force against

[49] *Ibid*., p. 187.
[50] Naomi Klein, *No Logo* (New York: Picador, 2000, 2002), pp. 393–395.
[51] *Ibid*., pp. 279–437.
[52] *Ibid*., p. 281.
[53] *Ibid*., p. 351.
[54] *Ibid*. p. 285.

her. Culture jamming is a form of political jujitsu that uses the power of corporate symbols—symbols deliberately developed to tap into subconscious drives and channel them in directions desired by the corporation—against their corporate owners.[55]

> Anticorporate activism enjoys the priceless benefits of borrowed hipness and celebrity— borrowed, ironically enough, from the brands themselves. Logos that have been burned into our brains by the finest image campaigns money can buy, … are bathed in a glow…
>
> … Like a good ad bust, anticorporate campaigns draw energy from the power and mass appeal of marketing, at the same time as they hurl that energy right back at the brands that have so successfully colonized our everyday lives.
>
> You can see this jujitsu strategy in action in what has become a staple of many anti-corporate campaigns: inviting a worker from a Third World country to come visit a First World superstore—with plenty of cameras rolling. Few newscasts can resist the made-for-TV moment when an Indonesian Nike worker gasps as she learns that the sneakers she churned out for $2 a day sell for $120 at San Francisco Nike Town.[56]

The effect of "sully[ing] some of the most polished logos on the brandscape," as Klein characterized Kernaghan's efforts,[57] is much like that of "Piss Christ." It relies on the power of the very symbol being sullied. Kernaghan played on the appeal of the dogs in *101 Dalmatians* by comparing the living conditions of the animals on the set to those of the human sweatshop workers who produce the tie-in products. He showed up for public appearances with "his signature shopping bag brimming with Disney clothes, Kathie Lee Gifford pants and other logo gear," along with pay slips and price tags used as props to illustrate the discrepancy between worker pay and retail price. After a similar demonstration of Disney products in Haiti, "workers screamed with shock, disbelief, anger, and a mixture of pain and sadness, as their eyes fixed on the Pocahontas shirt"—a reaction captured in the film *Mickey Mouse Goes to Haiti*.[58]

One of the most brilliant culture jamming campaigns ever was the joint Greenpeace/Yes Men "@ShellisPrepared" propaganda assault on Shell's arctic drilling plans.

> Two months ago, an "Arctic Ready" website appeared online. Festooned with Shell Oil's logo, it purported to be a site dedicated to educating the public about Shell's drilling for oil up North. It even included an interactive " social media" component—an "ad generator" allowing visitors to caption photos supposedly provided by Shell. It looked a lot like Shell's own Arctic-focused section of its site. But it is and was a fake, created by anti-Shell groups—Greenpeace and the Yes Men. And despite the fact that it has been reported as fake repeatedly, visitors continue to be duped by it and so it continues to generate controversy for Shell.
>
> Last month, Greenpeace, the Yes Men, and members of the Occupy movement used YouTube to make a supposed Shell event gone horribly wrong—that they had

[55] *Ibid*., p. 288.
[56] *Ibid*., p. 281.
[57] *Ibid*., pp. 349–350.
[58] *Ibid*., p. 351.

> staged—go viral. This week, they created a fake Shell "social media response team" Twitter account to make ads generated by their Arctic Ready website go viral. The account pretended to be frantically trying to contain the spread of ads created on the fake site. Those drawn to the site, thinking it was real, thought it was a case of social media going horribly wrong, with "Shell's" ad generator resulting in "embarrassing" ads like these …
>
> … and Shell's "social media team" being as inept in their attempts to control the spread as BP was in the Gulf of Mexico.
>
> "Our team is working overtime to remove inappropriate ads. Please stop sharing them," tweeted the fake @ShellIsPrepared account over and over again at multiple Twitter users. Multiple people started retweeting the account noting it as an example of corporate social media gone horribly wrong and "possibly the funniest PR disaster I've ever witnessed." (It is but not in the way the person thought.)…
>
> Greenpeace has apparently discovered that it's far more effective to ram Shell online than it is to send Greenpeace boats out to protest or to handcuff themselves to drilling equipment in the snow. Combining a fake corporate site with a fake corporate reaction seems to legitimize the content, and convince or at least confuse most people on Twitter who have limited attention spans.[59]

One of the posters had the caption "We'd drill a crippled orphan's spine if there was oil in it."[60]

Culture jamming is an illustration of the effects of network culture. Although corporate imagery is still created by people thinking in terms of one-way broadcast communication, the culture jammers have grown up in an age where audiences can talk back to the advertisement or mock it to one another. The content of advertising becomes just another bit of raw material for mashups, as products once transmitted on a one-way conveyor belt from giant factory to giant retailer to consumer have now become raw material for hacking and reverse-engineering.[61]

Corporate America, the authors of the *Cluetrain Manifesto* argue, still views the Web as "just an extension of preceding mass media, primarily television." Corporate websites are designed on the same model as the old broadcast media: a one-to-many, one-directional communications flow, in which the audience couldn't talk back. But now, the beauty of the Web is that the audience *can* talk back, and to each other, as easily as the corporation can talk to them.

> The audience is suddenly connected to itself.
>
> What was once The Show, the hypnotic focus and tee-vee advertising carrier wave, becomes… an excuse to get together… Think of Joel and the 'bots on Mystery Science Theater 3000. The point is not to watch the film, but to outdo each other making fun of it.
>
> And for such radically realigned purposes, some bloated corporate Web site can serve as a target every bit as well as Godzilla, King of the Monsters…

[59] *Ibid*., p. 353.

[60] Kashmir Hill, "Shell Oil's Social Media Nightmare Continues, Thanks To Skilled Pranksters Behind @ShellisPrepared," *Forbes*, July 18, 2012 <www.forbes.com>.

[61] <arcticready.com>.

> The Internet is inherently seditious. It undermines unthinking respect for centralized authority, whether that "authority" is the neatly homogenized voice of broadcast advertising or the smarmy rhetoric of the corporate annual report.[62]

As we already noted, the informational warfare campaigns Naomi Klein recounted, which were so discomfiting to McDonald's, Nike, Shell and Kathie Lee Gifford, all took place within the confines of Web 1.0. Since then, we've seen a quantum leap in the possibilities of networked organization. Richard Telofski, a corporate consultant who advises companies on protecting their public image against open-mouth saboteurs, writes at a time when anticorporate activists have the full resources of social media for propagating so-called "cybersmear."

Telofski points out that employees have been beefing about the company as long as there have been employees and companies. But now rather than being at the water cooler it's "painfully public."

> Comments about employers spread very quickly. They spread from sites like JobVent.com if only just by readers passing it along to their Facebook, Digg, or MySpace accounts. They spread even further outside the primary venue, the job bitching site, and the secondary venues, such as Facebook, Digg, and MySpace, because that trash talk gets indexed by search engines…
>
> … [T]his means that any web surfer seeking information about a particular company may also pick up, for example, the JobVent.com comments about that company, in their search results…
>
> Your Employees compete with your company's efforts to improve and maintain its image.[63]

Telofski is morally outraged that a company's image is not determined primarily by the company itself. Just imagine if all large institutions had the same control over their images that Telofski seems to think companies are entitled to.

Part of the reason for the effectiveness of informational warfare is cultural. The disjuncture between the legitimizing rhetoric used by hierarchical institutions, and the brutal and authoritarian reality of their actual behavior, is probably greater than ever before in history. And directly observing the latter—seeing how one's sausage is made—is also easier than ever before.

The cultural reproduction apparatus has always, by its nature, generated a fairly high number of factory rejects. Throughout history, there have probably been many such people who saw the fnords: whose perception of the conflict between practice and preaching brought on a failure of ideological conditioning. But the Internet era for the first time reduces to almost nothing the transaction costs of bringing such people together and forming a critical mass. The political and media culture we live in today seems almost deliberately designed for generating glitches in the Matrix and inculcating cognitive dissonance.

According to Felix Stalder, we're experiencing a "crisis of institutions, particularly in western democracies, where moralistic rhetoric and the ugliness of daily practice are diverging ever

[62] Klein, *No Logo*, p. 294.

[63] "Chapter One. Internet Apocalypso," in Rick Levine, Christopher Locke, Doc Searls and David Weinberger, *The Cluetrain Manifesto: The End of Business as Usual* (Perseus Books Group, 2001) <www.cluetrain.com>.

more at the very moment when institutional personnel are being encouraged to think more for themselves."

> Is it a coincidence that so far the vast majority of WikiLeaks' material has originated from within institutions in democratic systems? I think not. In its rhetoric, Western politics is becoming ever more moralising…
>
> However, if a superficial morality is all that is left, then the encounter with the brutal day-to-day operations of the battle field is unmediated and corrosive. The moral rationale for going to war quickly dissolves under the actual experience of war and what's left is a cynical machinery run amok. It can no longer generate any lasting and positive identification from its protagonists. In some way, a similar lack of identification can be seen within corporations, as evidenced in the leaks from Swiss banks. With neoliberal ideology dominant, employees are told over and over not to expect anything from the company, that their job is continually in danger and that if they do not perform according to targets they can be replaced at a moment's notice…
>
> … People are asked to identify personally with organisations who can either no longer carry historical projects worthy of major sacrifices or expressly regard their employees as nothing but expendable, short-term resources. This, I think, creates the cognitive dissonance that justifies, perhaps even demands, the leaker to violate procedure and actively damage the organisation of which he, or she, has been at some point a well-acculturated member… This dissonance creates the motivational energy to move from the potential to the actual.[64]

John Robb describes the technical potential for information warfare against a corporation, swarming customers, employees, and management with propaganda and disinformation (or the most potent weapon of all, I might add—the truth), and in the process demoralizing management.

> … given many early examples… of hacking attacks and conflicts, we are likely to see global guerrillas come to routinely use information warfare against corporations. These information offensives will use network leverage to isolate corporations morally, mentally, and physically… Network leverage comes in three forms:
>
> Highly accurate lists of targets from hacking "black" marketplaces. These lists include all corporate employee e-mail addresses and phone numbers—both at work and at home…
>
> Low cost e-mail spam. Messages can be range from informational to phishing attacks…
>
> Low cost phone spam. Use the same voice-text messaging systems and call centers that can blanket target lists with perpetual calls…
>
> In short, the same mechanisms that make spamming/direct marketing so easy and inexpensive to accomplish, can be used to bring the conflict directly to the employees of a target corporation or its partner companies (in the supply chain). Executives

[64] Telofski, *Insidious Competition*, pp. 225–227.

> and employees that are typically divorced/removed from the full range of their corporation's activities would find themselves immediately enmeshed in the conflict. The objective of this infowar would be to increase… :
>
> Uncertainty. An inability to be certain about future outcomes. If they can do this, what's next? For example: a false/troll e-mail or phone campaign from the CEO that informs employees at work and at home that it will divest from the target area or admits to heinous crimes.
>
> Menace. An increased personal/familial risk. The very act of connecting to directly to employees generates menace. The questions it should evoke: should I stay employed here given the potential threat?
>
> Mistrust. A mistrust of the corporations moral and legal status. For example: The dissemination of information on a corporation's actions, particularly if they are morally egregious or criminal in nature, through a NGO charity fund raising drive.
>
> With an increase in uncertainty, menace, and mistrust within the target corporation's ranks and across the supply chain partner companies, the target's connectivity (moral, physical, and mental) is likely to suffer a precipitous fall. This reduction in connectivity has the potential to create non-cooperative centers of gravity within the targets as cohesion fails. Some of these centers of gravity would opt to leave the problem (quit or annul contractual relationships) and some would fight internally to divest themselves of this problem.[65]

Obviously, we can't conclude this discussion without a mention of Wikileaks. Although it figured in the press in 2010 primarily insofar as it exposed the secrets of the American national security state, Wikileaks started out as a whistleblowing site oriented at least as much toward corporate leaks. In a late 2010 interview with *Forbes* magazine, Wikileaks founder Julian Assange estimated around 50% of all documents uploaded to the site came from private sector institutions, and announced the site in early 2011 would publish a major cache of documents related to the malfeasance of a major bank. In his words, "it could bring down a bank or two."

> It's like the Enron emails. Why were these so valuable? When Enron collapsed, through court processes, thousands and thousands of emails came out that were internal, and it provided a window into how the whole company was managed. It was all the little decisions that supported the flagrant violations.
>
> This will be like that. Yes, there will be some flagrant violations, unethical practices that will be revealed, but it will also be all the supporting decision-making structures and the internal executive ethos that comes out, and that's tremendously valuable…
>
> You could call it the ecosystem of corruption.

Assange clearly sees the function of online whistleblowing as analogous to that of a regulatory state:

[65] Felix Stalder, "Leaks, Whistle-Blowers and the Networked News Ecology," n.n., November 6, 2010 <remix.openflows.com>.

> It just means that it's easier for honest CEOs to run an honest business, if the dishonest businesses are more effected [sic] negatively by leaks than honest businesses. That's the whole idea. In the struggle between open and honest companies and dishonest and closed companies, we're creating a tremendous reputational tax on the unethical companies.
>
> No one wants to have their own things leaked. It pains us when we have internal leaks. But across any given industry, it is both good for the whole industry to have those leaks and it's especially good for the good players.
>
> But aside from the market as a whole, how should companies change their behavior understanding that leaks will increase?
>
> Do things to encourage leaks from dishonest competitors. Be as open and honest as possible. Treat your employees well.
>
> I think it's extremely positive. You end up with a situation where honest companies producing quality products are more competitive than dishonest companies producing bad products. And companies that treat their employees well do better than those that treat them badly…
>
> By making it easier to see where the problems are inside of companies, we identify the lemons. That means there's a better market for good companies. For a market to be free, people have to know who they're dealing with.[66]

As interviewer Andy Greenberg put it, Wikileaks is just the beginning of a growing trend:

> Modern whistleblowers, or employees with a grudge, can zip up their troves of incriminating documents on a laptop, USB stick or portable hard drive, spirit them out through personal e-mail accounts or online drop sites—or simply submit them directly to WikiLeaks.
>
> What do large companies think of the threat? If they're terrified, they're not saying. None would talk to us. Nor would the U.S. Chamber of Commerce. WikiLeaks "is high profile, legally insulated and transnational," says former Commerce Department official James Lewis, who follows cybersecurity for the Center for Strategic & International Studies. "That adds up to a reputational risk that companies didn't have to think about a year ago."
>
> … WikiLeaks adds another, new form of corporate data breach: It offers the conscience-stricken and vindictive alike a chance to publish documents largely unfiltered, without censors or personal repercussions, thanks to privacy and encryption technologies that make anonymity easier than ever before. WikiLeaks' technical and ideological example has inspired copycats from Africa to China and rallied transparency advocates to push for a new, legal promised land in the unlikely haven of Iceland.[67]

[66] John Robb, "INFOWAR vs. CORPORATIONS," *Global Guerrillas*, October 1, 2009 <globalguerrillas.typepad.com>.

[67] Andy Greenberg, "An Interview with Wikileaks' Julian Assange," *Forbes*, November 29, 2010 <blogs.forbes.com>.

The new era of culture-jamming and digitally-enabled open-mouth sabotage has had a profound cumulative impact. Corporations are much more vulnerable to "'brand disasters' that hit their reputations, revenues, and valuations.'" Over the past twenty years the five-year risk of such a disaster has risen, for companies with the most prestigious brands, from 20% to 82%.[68]

VI. A Narrowcast Model of Open Mouth Sabotage

Under a blog post of mine on open-mouth sabotage, one commenter raised this question: "perhaps as the more prevalent this practice (hopefully) becomes, the more it will become just another source of general 'white-noise' to be filtered and ignored not only by the media, but by consumers as well—i.e., at what point does 'open mouth sabotage' become a 'fully saturated market'?"[69]

This point would be a valid criticism in regard to the general broadcast media and traditional newspapers. The good thing about network society, though, is that we're not forced to work through broadcast media. So each message that's relevant to some people doesn't have to be directed to everyone, thereby submerging the particular messages that are relevant to each person in a sea of white noise. It's possible to "narrow-cast" each message of open mouth sabotage to the specific audience who will be most interested in it: the major stakeholders of a corporation, its vendors and outlets, the community where it's a major institution, and all the other recipients that would cause maximum embarrassment to the target.

We already saw Telofski's account of how complaints about an employer might get circulated via social networking or bookmarking sites, and then show up in Google searches for the employer's name. But this is merely what Telofski calls a "chaotic," rather than a "cosmic," attack—the more or less spontaneous sideeffect of people bitching to each other rather than a deliberate campaign to hurt the employer.[70] What happens when one disgruntled employee sets up an anonymous blog dedicated to exposing the dirt on her employer's greed and mismanagement, publishing (and relentlessly mocking and fisking) company Official Happy Talk memos, and systematically posts links to it at blog comment threads, message boards, email lists, and Facebook groups dedicated to customers or employees of the industry it serves?

The "white noise" objection fails to consider that campaigns of open mouth sabotage generally aren't broadcast to an undifferentiated public. They're narrowcast—i.e., aimed at the specific stakeholders of the target.

Other possible targets include "search engine pessimization" and the creative use of tags at bookmarking sites to direct web searches on a company toward critical commentary, and the use of social media hashtags to target criticism of firms toward their primary niche markets.[71] The use of social media as a marketing tool is now virtually obligatory—which leaves corporations quite vulnerable to the use of their own social media tools against them.

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[68] Greenberg, "Wikileaks' Assange Wants to Spill Your Corporate Secrets," *Forbes*, November 29, 2010 <blogs.forbes.com>.

[69] Naim, *The End of Power*, p. 7.

[70] Kevin Carson, "Open-Mouth Sabotage, Networked Resistance, and Asymmetric Warfare on the Job," *P2P Foundation Blog*, March 15, 2008 <blog.p2pfoundation.net>.

[71] Telofski, *Insidious Competition*, p. 230.

> Social networks as a viral marketing tool are thus a double-edged sword: they allow for an unprecedented dissemination of marketing messages at minimal cost, but they remain largely out of control, and can quickly turn into negative publicity. They effectively "level the ground" between marketers and consumer activists, who can now run worldwide campaigns virtually free of charge with the help of SNSs [social networking sites].[72]

VII. Attempts to Suppress or Counter Open Mouth Sabotage

Informational warfare against the corporate image is just starting to come to the attention of those who manage that image. In the past few years there's been an upsurge of interest in "cybersmear," and a proliferation of services aimed at tracking down disgruntled employees allegedly "libeling" their former or current employers.

But attempts at suppression are generally ineffectual. Governments and corporations, hierarchies of all kinds, are learning to their dismay that, in a networked age, it's impossible to suppress negative publicity. As Cory Doctorow put it, "Paris Hilton, the Church of Scientology, and the King of Thailand have discovered… [that] taking a piece of information off the Internet is like getting food coloring out of a swimming pool. Good luck with that."[73]

It's sometimes called the Streisand effect, in honor of Barbra Streisand (whose role in its discovery—about which more below—was analogous to Sir Isaac Newton's getting hit on the head by an apple).

One of the earliest examples of the phenomenon in the Internet age was the above-mentioned McLibel case in Britain, in which McDonald's attempt to suppress a couple of embarrassing pamphleteers with a SLAPP lawsuit wound up, as a direct result, bringing them worse publicity than they could have imagined. The pamphleteers were indigent and represented themselves in court much of the time, and repeatedly lost appeals in the British court system throughout the nineties (eventually they won an appeal in the European Court of Human Rights). But widespread coverage of the case on the Web, coupled with the defendants' deliberate use of the courtroom as a bully pulpit to examine the factual issues, caused McDonald's one of the worst embarrassments in its history.[74] (Naomi Klein called it "the corporate equivalent of a colonoscopy.")[75]

Two important examples in 2004, the Sinclair Media boycott and the Internet publication of the Diebold corporate emails, both decisively demonstrated the impossibility of suppressing online information when information could be replicated and websites mirrored with a few mouseclicks. An attempt to suppress information on the Wikileaks hosting site, in 2007—an encounter which, though Wikileaks was still virtually unknown to the general public, brought it under the radar of the national security community—resulted in a similar disaster.

> Associated Press (via the first amendment center) reports that "an effort at (online) damage control has snowballed into a public relations disaster for a Swiss bank seeking to crack down on Wikileaks for posting classified information about some of its

[72] *Ibid*., pp. 160–162.

[73] Marc Langheinrich and Gunter Karjoth, "Social networking and the risk to companies and institutions," *Information Security Technical Report* xxx (2010), p. 2.

[74] Doctorow, "It's the Information Economy, Stupid," p. 60.

[75] "McDonald's Restaurants v Morris & Steele," *Wikipedia* <en.wikipedia.org> (accessed December 26, 2009).

> wealthy clients. While Bank Julius Baer claimed it just wanted stolen and forged documents removed from the site (rather than close it down), instead of the information disappearing, it rocketed through cyberspace, landing on other Web sites and Wikileaks' own "mirror" sites outside the U.S...[76]

The DeCSS uprising, in which corporate attempts to suppress publication of a code for cracking the DRM on DVDs failed in the face of widespread defiance, is one of the most inspiring episodes in the history of the free culture movement.

> Journalist Eric Corley—better known as Emmanuel Goldstein, a nom de plume borrowed from Orwell's *1984*—posted the code for DeCSS (so called because it decrypts the Content Scrambling System that encrypts DVDs) as a part of a story he wrote in November for the well-known hacker journal 2600. The Motion Picture Association of America (MPAA) claims that Corley defied anticircumvention provisions of the Digital Millennium Copyright Act (DMCA) by posting the offending code...
>
> The whole affair began when teenager Jon Johansen wrote DeCSS in order to view DVDs on a Linux machine... Johansen testified on Thursday that he announced the successful reverse engineering of a DVD on the mailing list of the Linux Video and DVD Project (LiViD)...
>
> The judge in the case... issued a preliminary injunction against posting DeCSS. Corley duly took down the code...
>
> True to their hacker beliefs, Corley supporters came to the trial wearing the DeCSS code on t-shirts. There are also over 300 Websites that still link to the decryption code, many beyond the reach of the MPAA.[77]

In the Usmanov case of the same year, attempts to suppress embarrassing information led to similar Internet-wide resistance.

> The Register, UK: Political websites have lined up in defence of a former diplomat whose blog was deleted by hosting firm Fasthosts after threats from lawyers acting for billionaire Arsenal investor Alisher Usmanov.
>
> Four days after Fasthosts pulled the plug on the website run by former UK ambassador to Uzbekistan Craig Murray it remains offline. Several other political and freedom of speech blogs in the UK and abroad have picked up the gauntlet however, and reposted the article that originally drew the takedown demand.
>
> The complaints against Murray's site arose after a series of allegations he made against Usmanov...
>
> After being released from prison, and pardoned, Usmanov became one of a small group of oligarchs to make hay in the former USSR's post-communist asset carveup...
>
> On his behalf, libel law firm Schillings has moved against a number of Arsenal fan sites and political bloggers repeating the allegations...[78]

[76] Klein, No Logo, p. 330.

[77] "PR disaster, Wikileaks and the Streisand Effect" *PRdisasters.com*, March 3, 2007 <prdisasters.com>.

[78] Deborah Durham-Vichr. "Focus on the DeCSS trial," *CNN.Com*, July 27, 2000 <archives.cnn.com>.

That reference to "[s]everal other political and freedom of speech blogs," by the way, is like saying the ocean is "a bit wet." An article at *Chicken Yoghurt* blog provides a list of all the venues that have republished Murray's original allegations, recovered from Google's caches of the sites or from the Internet Archive. It is a very, very long list[79]—so long, in fact, that *Chicken Yoghurt* helpfully provides the html code with URLs already embedded in the text, so it can be easily cut and pasted into a blog post. In addition, *Chicken Yoghurt* provided the IP addresses of Usmanov's lawyers as a heads-up to all bloggers who might have been visited by those august personages.

The Trafigura case probably represents a new speed record, in terms of the duration between initial attempts to silence criticism and company lawyers' final decision to cave. The Trafigura corporation actually secured a court "superinjunction" against *The Guardian*, prohibiting it from reporting a question by an MP on the floor of Parliament about the company's alleged dumping of toxic waste in Africa. Without specifically naming either Trafigura or the MP, reporter Alan Rusbridger was able to comply with the terms of the injunction and still include enough hints in his cryptic story for readers to scour the Parliamentary reports and figure it out for themselves. By the time he finished work that day, "Trafigura" was already the most-searched-for term on Twitter; by the next morning Trafigura's criminal acts—plus their attempt at suppressing the story—had become front-page news, and by noon the lawyers had thrown in the towel.[80]

The re-emergence of Wikileaks as a focus of attention in 2010, after earlier U.S. government concerns in 2007, presents another case study in the Streisand Effect. According to K. Vaidya Nathan, U.S. government attempts to suppress the site illustrated the Streisand Effect in spades:

> Though, the action of the US government was intended to suppress the leaks, the 'Streisand effect' made sure that the outcome was exactly the opposite. People all over the world, who hadn't even heard of the Website, were typing WikiLeaks.org on their keyboards only to find a site-unavailable message, which increased their curiosity. People sympathetic to WikiLeaks, in the meantime, had voluntarily mirrored the website in order to keep it online. The entire content, with its million plus documents is now available on multiple servers, with different domain names and its fan-base has increased exponentially. The State Department tried to suppress one source. The upshot—not only has the source multiplied itself but its fan base has grown radically. Even though WikiLeaks doesn't advertise, the State Department has become its biggest advertiser.[81]

Robin Bloor describes the combination of mirror sites, torrent downloads and darknets which have been used to circumvent censorship of Wikileaks and its documents as a form of "Super Streisand Effect."[82]

I witnessed a textbook example of the Streisand Effect for myself last year, among my personal circle of acquaintances. *Escher Girls*[83] is a popular feminist blog run by Ami Angelwings

[79] Chris Williams, "Blogosphere shouts 'I'm Spartacus' in Usmanov-Murray case: Uzbek billionaire prompts Blog solidarity," *The Register*, September 24, 2007 <www.theregister.co.uk>.

[80] "Public Service Announcement—Craig Murray, Tim Ireland, Boris Johnson, Bob Piper and Alisher Usmanov … ," *Chicken Yoghurt*, September 20, 2007 <www.chickyog.net>.

[81] Alan Rusbridge, "First Read: The Mutualized Future is Bright," *Columbia Journalism Review*, October 19, 2009 <www.cjr.org>.

[82] K. Vaidya Nathan, "Beware the Streisand effect," *Financial Express*, December 17, 2010 <financialexpress.com>.

[83] Robin Bloor, "The Internet, Wikileaks and the Super Streisand Effect," *The Virtual Circle*, December 6, 2010 <www.thevirtualcircle.com>.

that covers anatomically impossible female poses, apparently intended to be "sexy" by the illustrators in comics and games (some notable recurring ones have been dubbed boobs-n-butt, centaur, swivel-butt and flounderboob). The blog relies heavily on fair use of images from popular media, including some fairly caustic mockery. Most of the artists whose work has been featured accept it, if not in good humor, at least in the knowledge that it's being used for perfectly legitimate purposes under copyright law. Not Randy Queen, though. Queen not only served DMCA notices on Tumblr to take down the posts that criticized his illustrations,[84] but went on to threaten Ami with a defamation action[85] for even posting a notice informing her readers of the takedown. Her original notice on Techdirt was quite non-confrontational, simply noting what happened for the information of readers who might wonder where the posts had gone, and even included this statement:

> (Don't harass him on his Facebook or Tumblr by the way. I'm not interested in having a feud with him, just letting people know what's going on.)[86]

Free speech/Internet censorship activist sites like *Popehat* and *Chilling Effects* quickly took up her cause, along with Mike Masnick at *Techdirt* (cited in the footnotes for this section) and the Electronic Frontier Foundation. The deleted images were quickly recovered from Internet Archive and posted around the Web, where they remained even after Queen deleted them from Wayback with robots.txt. In the end, in the face of the unwanted wave of negative publicity, Queen predictably rescinded his takedown notices and threats and apologized.[87]

Despite all this, the leaders of hierarchical institutions by and large have not yet internalized the new rules of the game. Time again, they find themselves blindsided by the Streisand Effect when they unexpectely fail, once again, to suppress embarrassing information. For example, a French intelligence organization was caught by surprise when its attempt to suppress a page on the French language Wikipedia for "national security" reasons quickly made it the most widely read article in the French Wikipedia.[88]

More generally, institutions are finding that traditional means of suppression that worked just a few years ago are useless. Take something as simple as suppressing a school newspaper whose content violates the administrators' sensibilities. An increasingly common response is to set up an informal student newspaper online, and if necessary tweak the hosting arrangements to thwart attempts at further suppression.[89]

The above-mentioned Richard Telofski, as we shall see in greater detail below, devotes most of his book *Insidious Competition* to advice on how to counter NGOs, activists, labor unions, etc., in the public battle for meaning, and how to fight for control of the corporate image. But in the case of what he calls "the Nasties," which are mostly either foreign governments or foreign

[84] The blog is <eschergirls.tumblr.com>; the owner tweets as @Ami_Angelwings.

[85] Mike Masnick, "Copyright As Censorship: Comic Artist Uses DMCA To Censor Critical Blogs," *Techdirt*, August 4, 2014 <www.techdirt.com>.

[86] Mike Masnick, "Comic Artist Randy Queen Now Claims Post About His Abuse Of Copyright To Stifle Criticism Is Defamatory," *Techdirt*, August 4, 2014 <www.techdirt.com>.

[87] <eschergirls.tumblr.com>

[88] Ami Angelwings' account of the complete timeline of events can be found at her personal blog: "What's been happening in the Randy Queen situation, and what the timeline was," *Ami Angelwings' Super Cute Rants of DOOM XD*, August 6, 2014 <ami-rants.blogspot.com>.

[89] Glyn Moody, "French Intelligence Agency Forces Wikipedia Volunteer to Delete Article; Re-Instated, It Becomes Most-Read Page On French Wikipedia," *Techdirt*, April 8, 2013 <www.techdirt.com>.

companies, he says, this is impossible. The reason is that the attacker is anonymous and their attack is covert. It's impossible to suppress them because they can't be identified.[90] But he ignores a central question: What stops an individual, in the fact of attempts at suppression, from taking advantage of the tools of individual super-empowerment, going underground, and *becoming* a Nasty?

Besides attempts at suppression, there is a growing interest in waging information warfare from the other side. Telofski's book is perhaps the most notable example of Corporate America's new focus on networked informational warfare, with a view toward fighting back in the marketplace of ideas. "… [S]*ocial media*," he writes, "*has the power to compete with you for the meaning of your corporate image…* "[91]

> As I write, marketers are experimenting with, and discovering, how social media can be used successfully within their marketing promotions mix. But what business people are not considering nearly as much is that if social media can be used to promote products and services… , then alternatively it can be used to demote or damage the image of products and services—and yes, even your corporate image…
>
> And that power is going to be used both in unexpected ways and by unexpected persons or entities… These *new competitors* don't want to sell your customers, clients, or consumers a comparable product or service. These new competitors want to sell your customers, clients, or consumers a competing *image* of your product, service, or your very company. An image of your company that is not as flattering as that which you work hard to maintain every business day…[92]

Telofski advises his clients to develop their own largely autonomous social media squads to engage the corporation's opponents in the "battle for meaning"— to contest attempts by workers and consumer activists to subvert the company's carefully constructed image, and regain control of that image.

The one strategy he recommends that actually seems plausible is one that "reputation management" firms already engage in: search engine optimization.[93] That means, essentially, gaming search engines to make sure positive results about your company come up on the first page of search results, and negative stuff is buried several pages in. The rest amounts to polishing a turd.

> Tactic: Anticipate negative memes that attackers might create. Provide information nullifying the claims made by the attackers. Address the "issue" before it becomes an issue…
>
> Tactic: Run public service announcements (PSAs) stating that the "facts" shared in social media are not always true and are usually unvetted, and that the false and misleading information in social media is a disservice to the public…
>
> Tactic: Have company social media staff enter into problematic discussions with links back to the third-party sources [of information]…

[90] Mike Masnick, "Yet Another High School Newspaper Goes Online to Avoid District Censorship," *Techdirt*, January 15, 200 <www.techdirt.com>.

[91] Telofski, *Insidious Competition*, pp. 317–318.

[92] *Ibid*., p. 15.

[93] *Ibid*., p. 16.

> Tactic: Identify the attacker as mistaken. Present information within social media discussions encountering image-damaging claims. Link back to the third-party sources created in the proactive strategies.
>
> Tactic: Make alliances with other organizations to have them help present your case.
>
> Tactic: Radicalize the attacker. Through social graphing software, look for connections to the attacker which will weaken their case or associate them with questionable sourcing…
>
> Tactic: Hold the attacker to liability laws. Frame your argument in "the truth" stating that the attacker is disseminating misleading information.[94]

Regarding the first four tactics, which center on contesting the facts of corporate critics and providing alternative information to the public, Telofski later elaborates that the company should appeal to independent authority by linking to "third-party, objective sites providing information which counters the claims being made," information which is "sound" and based on "good science, economics, etc."[95]

> Your job, as a reputable company, is to call attention to the truth while discrediting reporting that is not grounded in the facts. Don't let the falsehoods of NGOs and Activists stand "uncorrected," particularly if their false assertions have already broadly mutated. Challenge their assertions in the social web. By framing their assertions as being misleading and by declaring the importance of responsible reporting, readers will, by extension, question the responsibility of the NGO/Activist reporting.
>
> … [C]ounter-attacking or preempting NGOs and Activists in social media is about the truth. It's about operating on a higher level than the opponent. The truth sets everyone free.[96]

In this regard, I suspect Telofski's standards of "sound information" and "good science" are somewhat lower than mine. For example, he repeatedly counters activist critiques of corporate environmental policy with the withering rejoinder that they "obey all environmental laws and regulations."

Telofski issues repeated caveats that his strategic advice isn't meant for corporate malefactors, or those who want to mislead the public. Those people should clean up their act before worrying about image management. But he makes it clear, throughout his book, that he regards such "bad apples" as a small minority in the corporate world. The great majority of large corporations are "honest and lawabiding,"[97] and all about "solving the problems of individuals."[98] You know, as opposed to the corporations in the Bearded Spock universe where they have cowboy CEOs like Bob Nardelli, Rick Scott and "Chainsaw Al" Dunlap, who follow the "downsize everybody, give yourself a bonus, cash in your stock options and split before the chickens come home to roost" school of management.

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[94] *Ibid*., p. 275.
[95] *Ibid*., pp. 274–277.
[96] *Ibid*., p. 289.
[97] *Ibid*., p. 305.
[98] *Ibid*., p. 10.

Seriously, anyone who's ever made a first-hand comparison between the Official Happy Talk in the mission statement about "customer service," and a company's actual practice of gutting customer service staff, will know that corporations act like classic monopolists—seeing how much rent they can extract by rationing out and spoonfeeding a minimum of "solving the problems of individuals" in return for maximum returns. Anyone who's ever talked to an automated customer service line or sought information from a blue-smocked Wal-mart "associate" will know just how much of a flying fuck they give about "solving the problems of individuals." The main "individuals" whose "problems" they're interested in "solving" are CEOs trying to afford a third vacation home or a private jet.

In Telofski's Bizarro world, while large corporations are overwhelmingly a bunch of Dudley Dorights, NGOs and activist organizations are a different story altogether. In his references to anti-corporate activists' claims to serve the "public interest" and promote "benefits for society"—as opposed to his straight-faced reiteration of such claims in corporate happy-talk—Telofski's sarcasm fairly drips off the page. He criticizes NGOs for their lack of democratic accountability and for harming the interests of consumers allegedly served by corporations. But he takes the corporate image pretty much uncritically and at face value.

For Telofski, a world dominated by large corporations is entirely natural and normal, and the only rational way to organize the world. Attacks on corporations are attacks on the job security and prosperity of their employees, on wages and job benefits, and on the development of the new forms of technology the corporations might otherwise have produced. Management's agenda, by definition, is "best business practices," and in the social interest. And outside interference with "best business practices," by definition, "causes inefficiencies."

So the interests of the corporation are the interests of society. The corporation must be safeguarded as a bulwark protecting everything we hold dear. The real is rational.

For Telofski, the safety and environmental regulatory standards most corporations meet represent the latest, best and soundest science. The very idea that a revolving door of personnel between the senior management of the regulated industries and political appointees at regulatory agencies might have rigged a set of dumbed-down, least-common-denominator standards designed preempt civil liability and provide a safe harbor against liability for all firms that meet this minimal standard, or that an awful lot of his "sound science" bears the imprint of the industry-funded research that produced it, is "conspiracy theory" on the level of Ickes' lizard people.

In practice, most of the sites which I see defending corporate virtue with their allegedly "sound science" turn out to be efforts like CornSugar.org and EnergyTomorrow.org ("Log on to learn more"). They're basically the kinds of industry shills mocked in *Toxic Sludge is Good For You.* That means it's probably at least as easy for us as for them to pursue a "radicalization" strategy of tarring them by association with the sites they link to.

Telofski repeatedly recommends the use of "fact checking software." But most of the "factual" issues between the two sides in any public relations dispute between corporations and consumer activists are not things that can be resolved by a simple visit to Snopes.com. Most of them involve the partial presentation of facts, the lack of context, or a disingenuous interpretation of them—mainly on the corporate side. In most contests of "scientific fact" between the corporate world and consumer and environmental activists, the disingenuous oversimplifications and half-truths turn out to be on the corporate side.

A good example is the television PSA from EnergyTomorrow.org, in which the actress ("fact is, a growing world will demand more") states how many years of automobile use American

fossil fuel reserves are sufficient to provide. That's just fine, except it totally ignores the centrally important question of EROEI (Energy Return on Energy Investment): how many years' demand the reserves amount to doesn't matter nearly so much as the maximum feasible rate of extracting it, or the cost—in both money and energy terms—of extraction per unit of usable energy.

Another good example is the ex cathedra pronouncements of the late Norman Borlaug on organic farming, which form the basis of so many appeals to authority by assorted agribusiness industry shills. Borlaug blithely asserted that organic farming would result in massive deforestation—despite the fact that intensive horticulture actually requires *less* land than conventional mechanized/chemical agriculture for a given unit of output. Conventional commercial farming techniques maximize, not output per acre, but output per labor-hour. To do so, agribusiness must actually use the land in a *less* intensive way. Borlaug also claimed organic farming would require deforestation for more pasturage to provide manure for fertilizer; apparently he never heard of composting or green manuring with leguminous cover crops. John Jeavons, who developed the Biointensive method of raised-bed cultivation, has disproved both of the Borlaug canards by growing enough food to feed a single human being on only 4,000 square feet—using no fertilizer besides green manuring and closed-loop waste recycling. The anti-organic party line also claims "an atom of nitrogen is an atom of nitrogen" (i.e., a plant can't tell the nitrogen in organic fertilizer from that in syntheti)—ignoring the ways factors like soil friability, symbiotic interaction between root hairs and soil bacteria, etc. affect the absorption of nitrogen. In any contest of facts and logic between Borlaug and thinkers on the other side like Frances Moore Lappé, I'll put my money on the latter.

Telofski advises prospective social media squads not only to provide "high quality, information-based" responses, with links to "supportive," independent, backing information," but to stay in the debate venues "for the long haul."[99]

Oh, yes, please do. Because if there's one thing we've seen repeatedly demonstrated, it's that "high-quality information" of the sort provided by Norman Borlaug's regurgitators and Energy-Tommorow.org can't stand up to much in the way of follow-up questions. Giant corporations, of necessity, rely on Official Happy Talk and superficial half-truths that are designed to *deflect* scrutiny. Corporate "debunking" can be countered with still more unflattering facts and critical analysis of the "debunking" itself. The corporation finds itself fighting an ongoing public battle in which it is forced to engage its critics on the grounds of truth—and the critics can keep talking back. Their worst nightmare, in other words. There's a reason PR flacks and politicians don't like follow-up questions.

A great deal of corporate propaganda is superficially attractive appeals to "free enterprise" and "free markets" that can be cut off at the knees by showing just what a bunch of corporate welfare queens and hypocritical protectionists those piggies at the trough really are, and how dependent they are on IP laws and other forms of protectionism. (Take, for example Monsanto's use of food libel laws to suppress commercial free speech. Take attempts to suppress competition from those with more stringent quality standards, like meat-packers that test for mad cow disease more frequently than required by law, on the grounds that it constitutes "disparagement" of those who meet only the minimal regulatory standard.)

[99] *Ibid*., p. 295.

A battle based on facts and truth? Don't even go there. The only hope for corporate power is that people stay ignorant—in a "hegemonically constructed reality" created by big business—as long as possible.

Telofski also elaborates on his suggestion to "radicalize the attacker." That means to expose the NGO's agenda as "leaning heavily left," with connections that "can be considered 'radical,' extremist, outside the mainstream of society, or highly politically-motivated." The corporate counter-attack should use social graphing software to uncover the groups and individuals that link to the NGO, and the associations of its members. For American NGOs, the company should check the organization's Form 990 which identifies where they get their funding.

Ever hear the saying about glass houses? Telofski's sword cuts both ways. You may show that anti-corporate activists are friends with some Dirty Fucking Hippies, but we can show that most of your "factual" propaganda and most of the messages coming from your "allied organizations" are Industry-Funded Junk Science. We can show that the boys in the C-Suite are so many Little Eichmanns, who would bulldoze Guatemalan peasants into mass graves just to lower the price of sugar a penny a pound.

What's more, even if some of us may look like Tommy Chong, we can get our facts—facts which overwhelmingly disprove the corporate pretend reality— from genuinely independent scholarly and respected public interest sources so straight they make Wally Cox look like Jerry Garcia. What it comes down to in the end is facts—can your glossy bullet points and "Did you knows … " stand up to relentless cross-examination in a world where we can finally talk back? Bring it on!

The very fact Telofski finds it necessary to pursue such an agenda of contesting with activists for the factual sphere means the war is lost. Corporate power depends on one-way control of discourse. If they have to wage a contest of facts and reason against those who can talk back, they're already beaten.

As for his recommendation that companies "hold the attacker to liability laws," it's a good way to wind up being systematically taken apart in front of a much, much, *much* larger audience.

If corporations slow down and try to avoid decisive engagements, appeal to image and market their products mainly to stupid people with brand loyalties, they might just spin out the process of being nibbled to death by networked piranha for a few more decades. If they try to fight a pitched battle against us on his model, we'll just kill them faster.

VIII. Who Regulates the Regulators?

It's sometimes asked how a stateless society would prevent private malfeasors from doing this or that bad thing, like the criminal negligence that resulted in the Deepwater Horizons oil spill in the Spring of 2010. Anarchists can respond to such questions by saying "I don't know. How did the state prevent it?"

But less facetiously, as we've already noted, the state's supposed oversight agencies are quite prone to developing common interests with the industries they are ostensibly regulating. Given the average level of performance of regulatory and oversight agencies in the real world, networked advocacy organizations can frequently take more active and effective measures against private wrong-doers than the regulators are willing to. And what's more, they can expose the

regulatory state's collusive behavior in ways that were once impossible without first sending a query letter to Ralph Nader or Barry Commoner.

The regulatory state is there, supposedly, to sanction abuses by private business. So what are you supposed to do when the CEO calls the regulator "Uncle Billy Bob"? Again, who regulates the regulators? Answer: We do.

A case in point is an incident in Louisiana, where local law enforcement acted as private security for British Petroleum. During much of the oil spill aftermath, BP was notorious for—illegally—blocking press access to the cleanup efforts. And according to the same Mac McClelland mentioned at the outset of this chapter, the line between the Jefferson Parish sheriff's department and BP in enforcing such blockage was—to put it mildly—rather blurry:

> The blockade to Elmer's [Island] is now four cop cars strong. As we pull up, deputies start bawling us out; all media need to go to the Grand Isle community center, where a "BP Information Center" sign now hangs out front… Inside, a couple of *TimesPicayune* reporters circle BP representative Barbara Martin… We tell her that deputies were just yelling at us, and she seems truly upset. For one, she's married to a Jefferson Parish sheriff's deputy. For another, "We don't need more of a black eye than we already have."
>
> "But it wasn't BP that was yelling at us, it was the sheriff's office," we say.
>
> "Yeah, I know, but we have … a *very* strong relationship."
>
> "What do you mean? You have a lot of sway over the sheriff's office?"
>
> "Oh yeah."
>
> "How much?"
>
> "A *lot*."
>
> When I tell Barbara I am a reporter, she stalks off and says she's not talking to me, then comes back and hugs me and says she was just playing. I tell her I don't understand why I can't see Elmer's Island unless I'm escorted by BP. She tells me BP's in charge because "it's BP's oil."
>
> "But it's not BP's land."
>
> "But BP's liable if anything happens."
>
> "So you're saying it's a safety precaution."
>
> "Yeah! Y ou don't want that oil gettin' into your pores."
>
> "But there are tourists and residents walking around in it across the street."
>
> "The mayor decides which beaches are closed." So I call the Grand Isle police requesting a press liason, only to get routed to voicemail for Melanie with BP. I call the police back and ask why they gave me a number for BP; they blame the fire chief.
>
> I reach the fire chief. " Why did the police give me a number for BP?" I ask.
>
> "That's the number they gave us."
>
> "Who?"

"BP."[100]

The "liability" and "safety" concerns struck McClelland as rather flimsy, considering not only that tourists were let through to areas from which the press was barred, but that she observed BP cleanup workers in jeans and T-shirts.[101] Not to mention BP specifically forbade cleanup crews to wear protective gear in order to avoid any—ahem—unfortunate images on the evening news.

In a follow-up, McClelland described an encounter in which local law enforcement officials—in uniform and using official vehicles while on BP's payroll— were hassling reporters for filming BP operations:

> Here's the key exchange:
>
> Wheelan: "Am I violating any laws or anything like that?"
>
> Officer: "Um… not particularly. BP doesn't want people filming."
>
> Wheelan: "Well, I'm not on their property so BP doesn't have anything to say about what I do right now."
>
> Officer: "Let me explain: BP doesn't want any filming. So all I can really do is strongly suggest that you not film anything right now. If that makes any sense." [Mr. Corleone don't like it when people don't pay their protection money. So all Knuckles and I can do is strongly suggest you pay up right now. If that makes any sense.]
>
> Not really! Shortly thereafter, Wheelan got in his car and drove away but was soon pulled over.
>
> It was the same cop, but this time he had company: Kenneth Thomas, whose badge… read "Chief BP Security." The cop stood by as Thomas interrogated Wheelan for 20 minutes, asking him who he worked with, who he answered to, what he was doing, why he was down here in Louisiana. He phoned Wheelan's information in to someone. Wheelan says Thomas confiscated his Audubon volunteer badge… and then wouldn't give it back… Eventually, Thomas let Wheelan go…
>
> … The deputy was off official duty at the time, and working in the private employ of BP. Though the deputy failed to include the traffic stop in his incident report, Major Malcolm Wolfe of the sheriff's office says the deputy's pulling someone over in his official vehicle while working for a private company is standard and acceptable practice, because Wheelan was acting suspicious and could have been a terrorist.[102]

So apparently BP's security personnel were exercising law enforcement functions on land not occupied by BP, and law enforcement officials were acting as hired help. Sounds like something straight out of a Billy Jack movie, doesn't it? When the state itself is lawless, or in bed with those it ostensibly regulates, legal protections are meaningless. As Assange said in a late 2010 interview cited above, "our primary defense isn't law, but technology."[103]

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[100] *Ibid*., p. 311.

[101] Mac McClelland, "It's BP's Oil," *Mother Jones*, May 23, 2010 <motherjones.com>.

[102] "Op-Ed: Reporters Covering Oil Spill Stymied."

[103] McClelland, "La Police Doing BP's Dirty Work," *Mother Jones*, June 22, 2010 <motherjones.com>.

IX. Networked, Distributed Successors to the State: Saint-Simon, Proudhon and "the Administration of Things"

In recent years it's been "steam engine time" for theories of the evolution of the state into a stigmergic governance mechanism or support platform. But the basic idea has venerable roots. It goes back to Saint-Simon's idea of "militant" giving way to "industrial" society, and the "government of persons" to the "administration of things."

In his earlier period, as quoted by Shawn Wilbur from the 1849 debates with Louis Blanc and Pierre Leroux, Proudhon treated "the State" as something to be superseded entirely by the abolition of the antagonistic social relations that made power necessary:

> The State is the external constitution of the social power…
>
> The constitution of the State supposes… as to its object, that antagonism or a state of war is the essential and irrevocable condition of humanity, a condition which necessitates, between the weak and the strong, the intervention of a coercive power to put an end to their struggles by universal oppression. We maintain that, in this respect, the mission of the State is ended; that, by the division of labor, industrial solidarity, the desire for well-being, and the equal distribution of capital and taxation, liberty and justice obtain surer guarantees than any that ever were afforded them by religion and the State…
>
> As a result, either no social revolution, or no more government; such is our solution of the political problem.[104]

As stated in his 1851 work *General Idea of the Revolution in the XIX Century*, he stated this in fairly straightforward terms as "dissolving the state in the social body" (or "in the economy").

But as Proudhon's thought matured, Wilbur argues, this took a more nuanced form of "uncoupling of an institution and the despotic elements which seem to dominate it"—in particular decoupling the concept of the state from that of government.[105]

> … [T]his new clarity about the nature of social evolution was accompanied by a more sophisticated notion of how "collective force," which was so important in his analysis of "property," manifests itself in the form of collective *beings*—or rather how all beings worthy of the title are always already collectivities, organized according to a law of unity and development. That notion led him to reconsider the status of "the state," apart from its connection to the principle of government, and to rank some sort of non-governmental state alongside families, workshops, and other collective beings which must somehow be accounted for in his sociology.
>
> [It involved positing] this "organized collectivity"… as a being, with its own organization, interests and reason, operating alongside human beings and other collective beings (when not itself subordinated to other interests by governmentalism)…[106]

[104] Greenberg, "An Interview with Wikileaks' Julian Assange."

[105] Pierre-Joseph Proudhon, "Resistance to the Revolution," quoted in Shawn Wilbur, "Notes on Proudhon's changing notion of the state (1 of 3)," *Two-Gun Mutualism & the Golden Rule*, January 18, 2013 <libertarian-labyrinth.blogspot.com>.

[106] Wilbur, "Notes on Proudhon's changing notion of the state (3 of 3)," January 20, 2013 <libertarian-labyrinth.blogspot.com>.

These assorted organized collectivities would coexist through the principle of federation.

> "this federation, where the city is equal to the province, the province equal to the empire, the empire equal to the continent, where all groups are politically equal … " The leveling of the playing field is the consequence of denying the governmental principle, which, unlike the manifestation of collective force in the state, seems to be primarily an artefact of our inability to recognize our own strength when it confronts us in collective form.

The result was a conception of "the non-governmental state as an individual actor," coexisting with other collective bodies "in relations of mutuality."[107]

> 1. We have a level "field of play" where the beings we are accustomed to consider "individual" and a range of organized collectivities can actually only claim "individual" status by the same title, their status as groups organized according to an internal law which gives them unity. People, families, workshops, cities, nations and "humanity"… occupy non-hierarchical relationship with one another, despite differences in scale and complexity, and despite the participation of individuals at one scale in collective-individualities at another… Without a governmental principle to elevate any of these individuals "above the fray" in any way, mutuality becomes absolutely vital…
> 2. We have "rights" manifested by nothing more than the manifestation of capacities—which means we have rights that are going to conflict and clash, and which are to be balanced by some sort of (broadly defined) commutative justice.
> 3. We also have a theory of freedom… which is not primarily concerned with permissions and prohibitions, but with the strength and activity (the *play*) of the elements that make up the individual, and the complexity of their relations.[108]

The state of Proudhon's day had preempted its horizontal relationship to other, rightfully equal, individuals:

> Proudhon presented the existing State as a usurpation of the power of a real collectivity, under the pretext that the social collectivity could not *realize* itself. The assumption of governmental authority by a part of society over the rest amounts to an imposture… , with the usurpers pretending to be an organ society, but somehow outside and above society as well. Now, Proudhon went on to assert that there is indeed a State, which is in some sense an organ of that society, so it does not follow from that assertion that this State could perform the role of government. This State is simply one of the various non-human "individuals," collective absolutes, which exists on the social terrain, and which, according to the bare-bones "social system" we're exploring, encounters other individuals as equals.[109]

[107] Wilbur, "Notes on Proudhon's changing notion of the state (1 of 3)."

[108] Wilbur, "Notes on Proudhon's changing notion of the state (2 of 3)," *Two-Gun Mutualism & the Golden Rule*, January 19, 2013 <libertarian-labyrinth.blogspot.com>.

[109] Wilbur, "Notes on Proudhon's changing notion of the state (3 of 3)."

Proudhon argues for moving the state from a position of superiority to one of equality to the individual:

> The State is the power of collectivity which results, in every agglomeration of human beings, from their mutual relations, from the solidarity of their interests, from their community of action, from the practice of their opinions and passions. The State does not exist without the citizens, doubtless; it is not prior nor superior to them; but it exists for the very reason that they exist, distinguishing itself from each and all by special faculties and attributes…
>
> The State has preserved its power, its strength, which alone renders it respectable, constitutes its credit, creates awards and prerogatives for it, but it has lost its *authority*. It no longer has anything but Rights, guaranteed by the rights and interests of the citizens themselves. It is itself, if we can put it this way, a species of citizen; it is a civil person, like families, commercial societies, corporations, and communes. Just as there is no sovereign, there is no longer a servant, as it has been said, that would be to remake the tyrant: he is the first among his peers.[110]

Kropotkin later distinguished between "government"—or governance—and the State as such, although he reversed the significance Proudhon attached to them:

> On the other hand the *State* has also been confused with *Government*. Since there can be no State without government, it has sometimes been said that what one must aim at is the absence of government and not the abolition of the State.
>
> However, it seems to me that State and government are two concepts of a different order. The State idea means something quite different from the idea of government. It not only includes the existence of a power situated above society, but also of a *territorial concentration* as well as the concentration *in the hands of a few of many functions in the life of societies*. It implies some new relationships between members of society which did not exist before the formation of the State. A whole mechanism of legislation and of policing has to be developed in order to subject some classes to the domination of others.[111]

X. Monitory Democracy

John Keane's idea of "monitory democracy" overlaps to a large extent, albeit imperfectly, with the things we've been discussing here:

> Monitory democracy is a new historical form of democracy, a variety of 'postparliamentary' politics defined by the rapid growth of many different kinds of extra-parliamentary, power-scrutinising mechanisms. These monitory bodies take root within the 'domestic' fields of government and civil society, as well as in 'cross-border' settings once controlled by empires, states and business organisations. In

[110] Wilbur, "Encounters and Transactions," *Contr'un*, September 9, 2013 <libertarianlabyrinth.blogspot.com>.

[111] Proudhon, *Theory of Taxation* (1861), in Wilbur, "Proudhon on the State in 1861," *Two-Gun Mutualism and the Golden Rule*, February 17, 2013 <libertarian-labyrinth.blogspot.com>.

> consequence… the whole architecture of self-government is changing. The central grip of elections, political parties and parliaments on citizens' lives is weakening. Democracy is coming to mean more than elections, although nothing less. Within and outside states, independent monitors of power begin to have tangible effects. By putting politicians, parties and elected governments permanently on their toes, they complicate their lives, question their authority and force them to change their agendas—and sometimes smother them in disgrace.
>
> … In the name of 'people', 'the public', 'public accountability', 'the people' or 'citizens'… power-scrutinizing institutions spring up all over the place. Elections, political parties and legislatures neither disappear, nor necessarily decline in importance; but they most definitely lose their pivotal position in politics… The bullheaded belief that democracy is nothing more than the periodic election of governments by majority rule is crumbling… [P]eople and organisations that exercise power are now routinely subject to public monitoring and public contestation by an assortment of extraparliamentary bodies.[112]

Monitory democracy is a restraint not only on the power of government, but on that of institutions once considered to be outside the political realm like the workplace and family.[113]

Keane associates the rise of monitory democracy with the new media. If assembly-based democracy used the spoken word as a medium, and the ascendancy of representative democracy coincided with print and the early mass electronic media, "monitory democracy is tied closely to the growth of multi-mediasaturated societies—societies whose structures of power are continuously 'bitten' by monitory institutions operating within a new galaxy of media defined by the ethos of communicative abundance." The new media include new, more adversarial styles of journalism in place of the old model of so-called "objective" journalism.[114] The new, pervasive media atmosphere means that "the realms of 'private life' and 'privacy' and wheeling and dealing of power 'in private' have been put on the defensive… Every nook and cranny of power becomes the potential target of 'publicity' and 'public exposure'; monitory democracy threatens to expose the quiet discriminations and injustices that happen behind closed doors and in the world of everyday life."[115] Assorted monitory democracy bodies

> specialise in directing questions at governments on a wide range of matters, extending from their human rights records, their energy production plans to the quality of the drinking water of their cities. Private companies are grilled about their services or products, their investment plans, how they treat their employees, and the size of their impact upon the biosphere…
>
> In the age of monitory democracy, bossy power can no longer hide comfortably behind private masks; power relations everywhere are subjected to organised efforts by some, with the help of media, to tell others—publics of various sizes—about matters that had been previously hidden away, 'in private'.[116]

[112] Pyotr Kropotkin, *The State: Its Historic Role* (1897), Chapter One <www.panarchy.org/kropotkin/1897.state.html>.

[113] John Keane, *The Life and Death of Democracy* (New York and London: W.W. Norton & Co., 2009), pp. 688–690.

[114] *Ibid*., pp. 708–710.

[115] *Ibid*., pp. 737–739,

[116] *Ibid*., p. 740.

The ways in which Keane's monitory democracy differs from our desktop regulatory state are suggested by his quip that democracy is coming to mean more than elections, but nothing less. Bodies associated with monitory democracy in Keane's schema include not only non-governmental public interest organizations and movements, but also internal bodies like citizen review boards, omsbudsmen and the like attached to the state apparatus. Keane sees monitory democracy, and the rise of NGOs and civil society, as perfecting state democracy rather than supplanting it.

In one sense the institutions of monitory democracy can be interpreted, as by Keane, as a way of making the political apparatus more democratic and accountable to the citizenry. Keane treats monitory democracy as something that presupposes representative democracy and makes it work better.[117] But they can also be interpreted as ways to shift the balance of power from the state to civil society, and to constrain abuses of both state power and private power in ways that once required the state. Not only do institutions of monitory democracy in the non-state public realm constrain the state and make it less statelike, but insofar as they undermine the power of private entities like large corporations or constrain the acts of racial and other majorities against minorities, they supersede functions once performed—or nominally performed, in an actual atmosphere of collusion—by government regulatory and civil rights agencies. If monitory democracy reins in abuses of state power, it also performs—better than the state—many surveillance and protective functions traditionally associated with the regulatory state.

Regardless of Keene's view of the state as a viable component of monitory democracy, the latter is a useful tool for those of us whose goal is not only to rein in the state's discretionary power and level the playing ground between state and citizens, but also piecemeal supplanting of the state by voluntary self-organization wherever possible, and pressuring the state to become to take on more of a transparent, networked and p2p nature where it continues to exist and retain its formally statelike character.

XI. "Open Everything"

The "Open Everything" agenda "starts with connectivity, moves toward virtual networks and regional decision-support centres, and culminates in all humans connected to all information—especially "true cost" information—so as to achieve Panarchy—informed self-governance at all levels on all issues."[118]

As stated in Robert Steele's phasing schema, it entails the creation of an open, autonomous Internet which, through assorted meshwork and other alternative architectures, "cannot be shut down by governments, corporations, or predatory non-government organizations." This autonomous Internet will be the basis of "universal connectivity," in order to "harness the distributed intelligence of all humans," and to "create the aggregate people power to overcome secular corruption that is the source of all scarcity and conflict… " This people power will also require other autonomous platforms and infrastructure: "the establishment of 'true cost' information for every product and service, and the coincident establishment of local water,

[117] *Ibid*., pp. 744–745.
[118] *Ibid*., pp. 698–699.

power, and currency options that begin to dismantle the dysfunctional grid that wastes half of what it moves in the movement."[119]

By way of explanation, "true cost" is an attempt to achieve, through the distributed collection and indexing of information, an easily accessible, product-byproduct and service-by-service database of information on the real component costs (including costs externalized on the taxpayer) of all the things we consume.

> Someday we may be able to access the following through a mobile handset about any product while pointing to superior alternatives:
>
> Water-use
>
> Energy-use
>
> Known toxins
>
> Chemicals corporations use without disclosing research about the chemicals (secrecy)
>
> Use of child and 'slave' labor throughout production
>
> Tax avoidance & amount of tax subsidies
>
> Travel/migration of product's life cycle[120]

In other words, "point the phone and read the bar code, and see if this product will kill you or if someone else was killed or abused as part of the product's development."[121]

As for Panarchy, we will discuss it in detail below.

According to Venessa Miemis, the growing number of people in the Third World—hundreds of millions and growing exponentially—who have affordable Internet access via mobile device, added to near-universal connectivity in the developed world, means that the goal of universal connectivity is near. The explosion of social media as a network tool also furthers the "Open Everything" goal of ubiquitous aggregation of "people power" to challenge state and corporation.[122]

And the emerging possibility of "bankless" Third World people participating in long-change via complementary currencies like LETS, mutual credit and Bitcoin means the "Open Everything" project of distributed currency options is also within reach.

> When the tools are in place to allow individuals or groups within a local area to easily exchange value without using traditional/centralized currency, it's reasonable to expect a serious challenge to the ingrained public perception of money.[123]

The list of Open Everything on P2P Foundation's "Autonomous Internet Road Map" page includes Open "Borders, Business, Carry, Communications, Culture, Government, Hardware, Intelligence, Library, Money, Networks, Schools, Search, Skies, Society, Software, Space, Spectrum."[124]

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[119] "Autonomous Internet Road Map," *Foundation for P2P Alternatives Wiki*. Accessed October 2, 2011 <p2pfoundation.net>.

[120] "Strategic Phasing," *Foundation for P2P Altertnatives Wiki*. Accessed October 2, 2011 <p2pfoundation.net>.

[121] Main Page, *True Cost Wiki*. Accessed October 2, 2011 <wiki.re-configure.org.php?title=Main_Page>.

[122] "Review: *Revolutionary Wealth* (Hardcover)," *Public Intelligence Blog*, April 28, 2006 <www.phibetaiota.net>.

[123] Venessa Miemis, "4 trends shaping the emerging 'superfluid' economy," *Global Public Square*, April 29, 2011 <globalpublicsquare.blogs.cnn.com>.

[124] Miemis, "4 trends."

Consider how the Open Everything movement's legal strategy, despite a significant difference in emphasis, dovetails with the positive side of Keane's Monitory Democracy:

> The emergence of the Autonomous Internet will transform the global to local legal system. Legal "rights" rooted in corruption and privilege, and especially legal "rights" affording secrecy and monopoly privileges as well as "personality" protections to corporations, will be over-turned by public consensus, first at local and state levels, then nationally, and finally globally.
>
> In the interim, and rooted firmly in the concepts of public sovereignty, localities and states or provinces will combine both local implementation of the Autonomous Internet, with nullification of federal or international attempts to impose restrictions on spectrum use, to take one example, that are from a more corrupt and less technically evolved Industrial Era.
>
> In extreme cases, secession will be the solution chosen by a sovereign public group, with Vermont and Hawaii being the two most obvious candidates for full independence from the United STATES of America…[125]

XI. Panarchy

The concept of panarchy was originally put forward by Paul Emile de Puydt. Different forms of government, as an extension of the general principle of "laissezfaire," were to compete with one another. Monarchists, republicans, etc., were to choose a government to their liking just as they would shop among competing providers of goods. These governments would not cover an entire contiguous geographical area, but would be distributed, with citizens voluntarily declaring allegiance to them wherever they lived.[126] Each citizen would register with a "Bureau of Political Membership," and fill in a form:

> In each community a new office is opened, a "Bureau of Political Membership". This office would send every responsible citizen a declaration form to fill in, just as for income tax or dog registration.
>
> Question: What form of government would you desire?
>
> Quite freely you would answer, monarchy, or democracy, or any other.
>
> Question: If monarchy, would you have it absolute or moderate … , if moderated, how?"
>
> You would answer constitutional, I suppose.
>
> Anyway, whatever your reply, your answer would be entered in a register arranged for this purpose; and once registered, unless you withdrew your declaration, observing due legal form and process, you would thereby become either a royal subject or citizen of the republic. Thereafter you would in no way be involved with anyone else's government—no more than a Prussian subject is with Belgian authorities. You

[125] "Autonomous Internet Road Map."
[126] "Autonomous Internet Road Map."

> would obey your own leaders, your own laws, and your own regulations. You would pay neither more nor less, but morally it would be a completely different situation.
>
> Ultimately, everyone would live in his own individual political community, quite as if there were not another, nay, ten other, political communities nearby, each having its own contributors too.
>
> If a disagreement came about between subjects of different governments, or between one government and a subject of another, it would simply be a matter of observing the principles hitherto observed between neighbouring peaceful States; and if a gap were found, it could be filled without difficulties by human rights and all other possible rights. Anything else would be the business of ordinary courts of justice…
>
> There might and should be also common interests affecting all inhabitants of a certain district, no matter what their political allegiance is. Each government, in this case, would stand in relation to the whole nation roughly as each of the Swiss cantons, or better, the States of the American Union, stand in relation to their federal government. Thus, all these fundamental and seemingly frightening questions are met with readymade solutions; jurisdiction is established over most issues and would present no difficulties whatsoever…
>
> My panacea, if you will allow this term, is simply free competition in the business of government. Everyone has the right to look after his own welfare as he sees it and to obtain security under his own conditions. On the other hand, this means progress through contest between governments forced to compete for followers…
>
> What is most admirable about this innovation is that it does away, for ever, with revolutions, mutinies, and street fighting, down to the last tensions in the political tissue. Are you dissatisfied with your government? Change over to another! These four words, always associated with horror and bloodshed, words which all courts, high and low, military and special, without exception, unanimously find guilty of inciting to rebellion, these four words become innocent, as if in the mouths of seminarists…
>
> "Change over to another" means: Go to the Bureau for Political Membership, cap in hand, and ask politely for your name to be transferred to any list you please.[127]

Paul Herzog, a contemporary advocate of Panarchy, defines it as "a system of overlapping networks of cooperation and legitimacy, or authority, and therefore resembles recent literature on a 'new medievalism.'"[128]

> Lipschutz,[129] too, claims "governance replaces government; informal networks of coordination replace formal structures of command… There is reason to think that a governance system composed of collective actors at multiple levels, with overlapping authority, linked thorough various kind of networks, might be as functionally-efficient as a highly-centralized one." Governance occurs through both "function and

[127] Paul Emile de Puydt, *Panarchy* (1860) <www.panarchy.org>.
[128] *Ibid*.
[129] Paul Herzog, *Panarchy: Governance in the Networked Age* (2009), p. 3.

social meanings, anchored to particular places but linked globally through networks of knowledgebased relations. Coordination will occur not only because each unit fulfills a functional role where it is located but also because the stakeholders in functional units share goals with their counterparts in other functional units." As a result, actors "will have to become participants or stakeholders in a complex network of resource regimes and institutions, helping to coordinate among them, and foster the creation of large numbers of 'mediating organizations' whose purpose is to act as a buffer and filter between local contests and these bureaucracies."[130]

XII. Collective Contract

The Direct Action Network's "Collective Contract" proposes taking advantage of the low transaction costs of aggregating collective action outside of traditional hierarchies, as a source of leverage against powerful institutions. The idea, specifically, is to aggregate individual purchasing power into associations for the coordinated imposition of "terms of service" on corporations as a condition of doing business with the members. Individuals are thereby enabled to deal with corporations as equals.

> Today we can evolve another new mechanism of democratic accountability. The development of the internet means that we can form a different kind of union—one which stops the misuse of political power derived from the money given to corporations. This is a union of the end-users of corporations. It can break out of the corporation's unilateral contract by withholding custom.
>
> The Direct Action Network is a platform designed to allow such a union to form. As such, it is democracy's missing link. It provides a means by which we can all fulfill that duty we owe.[131]
>
> The first thing that you to do is to register on the Network as an end-user of a corporation (or many corporations). It could be your electricity company, it could be Paypal, or a credit card corporation, it could be Walmart, your cell phone company or your mortgage company. It could even be a corporation that you do not receive goods or services from.
>
> You are now part of the User-Base of that corporation on the Network…
>
> If you are not an activist or a corporation, you have two interfaces on the Network. Broadly speaking the first is for catching corporations. The second is for taming them.
>
> The first goes by the name "uTOU Interface". U stands for union, TOU stands for terms of use. uTou enables you to do something more amazing than lassoing a stampeding rhino with a thread of spider's silk. But having caught this wild rhino, you are going to need some help in taming it. This is what the second interface is for, and this is called rather enticingly the "Campaign Interface."

[130] Lipschutz and Mayer, *Global Civil Society and Global Environmental Governance: The Politics of Nature from Place to Planet.*

[131] Herzog, *Panarchy*, pp. 30–31.

The first interface enables you to serve terms of use on a corporation. These TOU are part of the contract between you and the corporation. They are legally binding on the corporation…

A collective contract is an agreement given by a union of individuals. It can be a union of any kind. The 1689 and the 1791 Bill off Rights are examples of collective contracts, so is Magna Carta. So are wage settlement agreements of a trade union.

For our purposes, a collective contract is one given by the 99% to the corporations….

What you are doing by sending terms of use to a corporation is asserting a right to control how the corporation uses the money that it receives from you for its goods or services….

The terms of use do this by imposing on the corporation five duties

1. Transparency to the User-base
2. Consultation with the User-base in decisions affecting the User-base.
3. Privacy of the data of the User-base.
4. Coherence (Not trading with a corporation which does not abide by the terms of use)
5. Due Process…[132]

A primary function of the Network is to enable the user-base of a corporation to organise themselves effectively and quickly so that the target corporation cannot generate profits from it products. The Network makes it possible for end-user's to employ a variety of tactics to achieve a 'corporate arrest'…

… The Network allows a total boycott by all the end-users of the corporation.

By allowing a union of the whole user-base, the Network makes the traditional boycott a much more effective tool than it has been previously.

This effectiveness comes from four other new factors.

Firstly, the Network enables the user-base to attack the corporation's economic activity both directly through its products and indirectly, through the supply chain of the corporation. This prevents the corporation from getting the raw materials and finance needed to function within its profit margins. These are "smart boycotts". The network allows pin-point strikes against particular assets or functions of the corporation. It allows the user-base, for example to attack the private shareholdings of the chief executives of the target corporation, that he or she holds in another corporation, as means of leveraging compliance from the target corporation.

The second new factor is enforcing the boycott through other corporations in the target corporation's supply chain. A corporation signed to the collective contract cannot engage in any kind of commercial relationship with a corporation which is not signed or is in breach of its obligations under the TOU.

[132] "Part I: Democracy's Missing Link," *The Direct Action Network* <wikiterms7.pen.io>.

> The third factor is that non-cooperation of the user-base becomes a constant factor for the corporations. Boycotts were traditionally ineffective because they were temporary or one off actions. There was nothing to stop a corporation returning to its harmful activities once the boycott was over. There was no effective way of consolidating the gains made by the boycott. The collective contract makes the gains a permanent feature.
>
> Lastly, the motivation of end-user's to act against harmful corporations has always been lessened by image make-overs and the all-pervasive corporate propaganda. The Network, to borrow a phrase from Anonymous "does not forgive and does not forget". It provides end-users with a way of remembering—a corporate criminal record which remains forever attached to its products. End-users can always see this whenever they go to buy a product from a corporation with such a history.
>
> The combination of these factors makes it possible to totally arrest the economic activity of a rogue corporation.
>
> Tactics would not be limited to a boycott, for example the end-user's of a noncompliant corporation could threaten to switch to a rival corporation or in fact switch. The possibility of this move creates a competitive advantage for corporations that sign to the Collective Contract.
>
> The Network is designed as a platform for the mobilisation of end-users. It provides a connection between all the end-users who are affected by the actions of a corporation and all the end users of that corporation's supply chain network. This enables the entire user-base to coordinate itself. Overall the Network provides a lightning rod which connects the entire user-base of the whole global corporate network…
>
> The user-base of a corporation has two ways to make sure that a corporation abides by the terms of the Collective Contract. The main one simply arises from the fact that a corporation cannot afford to be in conflict with its main source of finance. But breach of the Collective Contract is also legally enforceable against the corporation. This would result in the corporation having to pay damages to the end-users. The level of those damages might reach is an untested area of law. In any event, a corporation would be very reluctant to defend a breach of the TOU in court because it would a create an embarrassing publicity nightmare for it to be seen fighting the very people it needs to woo to sell its product…
>
> Campaigns are conducted by end-users through the Campaign Interface of the Network. So let us have a look at how this operates.

Because the Campaign interface provides users with a comprehensive list of firms in a corporate supply chain, even a minority of consumers participating in a boycott campaign pursuant to a Collective Contract, by systematically attacking key nodes in the chain, could impose significant costs from attrition on the target firm.[133]

[133] "Part II: The Architecture of the Network," *The Direct Action Network*.

XIII. Heather Marsh's "Proposal for Governance"

There are numerous proposals that fall loosely within Comte's conception of replacing domination over men with the administration of things. For example, Heather Marsh's "Proposal for Governance":

> Governments up till now have been run by hierarchical groups, which act as the final authority on all topics for an entire region for an arbitrarily specified length of time or until they are overthrown by another group. What these authorities govern is a series of systems, controlled by the state or corporations, and run as dictatorships where workers' individual rights are exchanged for the basic necessities of life. These systems have profit for the top of the hierarchy as their objective; they are not set up to provide an efficient or superior service or product to the users.
>
> If these systems were organized as autonomous, transparent, porous, peer to peer user groups, they would be far better governed by themselves. The current political structure does not recognize that every system is not of concern or interest to everyone in the region, or that some users have far greater knowledge and expertise in specific areas than others. We need a system where responsibility and control rests with the entire user group and expertise is acknowledged and put to best use.
>
> Autonomous: each user group should consist of all people affected by the system and no people not affected by the system.
>
> Transparent: all information related to the system must be fully transparent in order for users to participate in tasks or auditing.
>
> Porous: contribution at all levels of each user group must be open to all users with acceptance by peer review.
>
> Peer to peer: each user group should consist of users: audit and provide feedback, contributors: interested users who periodically present work for acceptance by the members, members: have acquired expertise and been accepted as full contributing members by the user group, and a core group: recognized by the group as having the necessary level of expertise to provide direction for the system.
>
> Meritocracy: A side effect of these user groups is that they provide workers with the three motivators which provide the greatest job satisfaction, autonomy, mastery and purpose. People can work on anything they like, they are not required to submit resumes, acquire accreditation, seniority, or approval from an individual authority. If their work is good enough it will be accepted by the user group. Everyone can work on the system that interests them, doing the jobs at the level they are capable of, with as much or as little involvement as they choose.
>
> Systems should be organized by user groups, not by nations or treaties. International systems would include things such as the internet, telecommunications and knowledge, local systems would include things such as transit, food production and social services, and in any situation where only one family or an individual is affected, the responsibility would lie with only them. Each local user group or individual would

have access to outside user groups for trade, shared knowledge, disaster relief, etc., autonomous but networked.[134]

XIV. Michel Bauwens's Partner State

The idea of the Partner State originated with Cosma Orsi. Michel Bauwens, building on Orsi's work, sees the Partner State as a sort of "peer-to-peer state," organized on stigmergic rather than democratic principles.

> First of all, these communities are not democracies. Why is that so? Because democracy, the market and hierarchies are all modes of allocation of scarce resources. In hierarchy, our superiors decide; in the market, prices decide; in a democracy, "we" decide.
>
> But where resources are abundant, as they are with knowledge, code and design—which can be copied and shared at a marginal cost—they are truly unnecessary. These types of communities are truly poly-archies and the type of power that is held in them is meritocratic, distributed and ad hoc. Everyone can contribute without permission, but those with recognised expertise who are accepted by the community—the socalled "maintainers" and the "editors"—decide which software or design patches are acceptable.
>
> These decisions require expertise, not communal consensus. The tension between inclusive participation and selection for excellence is one that every social system faces, and that peer production has solved in a rather elegant way. The genius of the solution is not that it avoids conflict, but that it designs away unnecessary conflict by allowing for the maximum human freedom compatible with the goal of co-operation. Indeed, peer production is always an "object-oriented" co-operation, and it is the particular object that will drive the particular form chosen for its peer governance mechanisms.
>
> The main allocation mechanism in such projects is a "distribution of tasks". Unlike in the industrial model, there is no longer a division of labour between jobs and mutual coordination. Because the work environment is designed to be totally open and transparent, every participating individual can see what is needed, and decide accordingly whether to contribute. Remarkably, this new model allows for both global coordination and for small-group dynamics. And it does this without "command and control"![135]

Bauwens distinguishes the Partner State from the idea of the state under the 20th century model of state socialism:

> Socialism has traditionally been focused on the state, and while the state has historically proven to be necessary to balance unbalanced market forces, it has not proven

[134] "Part III: Campaigns," *The Direct Action Network*.

[135] Heather Marsh, "A proposal for governance in the post 2011 world," *WL Central*, December 24, 2011 <wlcentral.org>.

> to be very successful as an autonomous mode of production. So any socialism that harks back to the failed statism of 20th century socialism, will also be a disaster in the waiting. P2P Theory offers a new expanded role for the state, not just as the arbiter of the market, or as paternalistic 'welfare' state, but as a Partner State, that directly empowers and enables civil society to be autonomously productive. This is indeed the strong claim of P2P Theory, i.e. that we now have a superior mode of commons-oriented peer production which surpasses both the statist and market modes. But peer production needs an infrastructure and support which needs to come from enlightened and democratic public authorities.[136]

So the Partner State, arguably, is not so much a "government" as a system of *governance*. It need not be a state at all, as libertarians normally use that term (i.e. an institution which claims the sole right to initiate force in a given territory). It is, essentially, is a nonstate social association—or support platform—for managing the commons, extended to an entire geographical region.

> Peer production also rests on a sometimes costly infrastructure of cooperation. There would be no Wikipedia without the funding for its servers, no free software or open hardware without similar support mechanisms. This is why open source communities have created a new social institution: the for-benefit association… [T]he new forbenefit associations have only an active role in enabling and empowering the community to cooperate, by provisioning its infrastructure, not by commanding its production processes. These associations exist for the sole purpose of 'benefitting' the community of which they are the expression…
>
> Now, here is the kicker, how would you call an institution that is responsible for the common good of all the participants, in this case, not the people involved in a similar project, but the inhabitants of a territory? I would argue that this type of for-benefit institution has a very similar function to what we commonly assign to the state…
>
> Can we then, imagine, a new type of state? Enter the concept of a Partner State! The Partner State… is a state form that enables and empowers the social creation of value by its citizens. It protects the infrastructure of cooperation that is the whole of society. The Partner State can exist at any teritorial level, as a set of institutions that protect the common good, and enable the citizens to create value. It does, on a territorial scale, what the for-benefit institutions do on a project-scale. While the for-benefit associations work for the commoners as to particular projects, the Partner State works for the citizens.[137]

Elsewhere Bauwens describes it as a sort of arbiter or venue for dialogue between stakeholders in a geographical area:

> Rather than seeing itself as sovereign master, the state must be seen as embedded in relationships, and as in need of respecting these multiple relationships. This is probably best translated by the concept of multistakeholdership. We can probably

[136] Michel Bauwens, "The 'welfare state' is dead—long live the 'partner state'?" *Al Jazeera English*, March 15, 2012 <www.aljazeera.com>.

[137] Bauwens, "The Argentinian Interview," *P2P Foundation Blog*, September 18, 2009 <blog.p2pfoundation.net>.

> expect that the nation-state, along with the newly emerging sub- and supraregional structures will continue to exist, but that their policies will be set through a dialogue with stakeholders. The key will be to disembed the state from its primary reliance of the private sector, and to make it beholden to civil society, i.e. the commons, so that it can act as a center of arbitrage…[138]

Bauwens cites Ezio Manzini and Eduardo Staszowski as a vision of how public services would be organized under the Partner State:

> citizens become active and collaborative and can be considered partners in the design and delivery of public services (service co-design and co-production).
>
> This vision, in turn, raises two main questions: how do public services change if they are conceived as platforms to trigger, enable and support active and collaborative citizens? How can we promote the necessary mutual support between public and social innovations?[139]

Tommaso Fattori, an activist in the Italian Water Commons movement, discussed the Partner State in the context of commonification of public services:

> The field of Commons can be for the most part identified with a public but not-state arena, in which the actions of the individuals who collectively take care of, produce and share the Commons are decisive and fundamental.
>
> In this sense, Commons and commoning can become a means for transforming public sector and public services (often bureaucracy-bound and used to pursue the private interests of lobby groups): a means for their commonification (or commonalization). Indeed, there are many possible virtuous crossovers between the traditional public realm and the realm of Commons.
>
> Commonification goes beyond the simple de-privatization of the public realm: Commonification basically consists of its democratization, bringing back elements of direct self-government and self-managing, by the residents themselves, of goods and services of general interest (or participatory management within revitalized public bodies). Commonification is a process in which the inhabitants of a territory regain capability and power to make decisions, to orientate choices, rules and priorities, reappropriating themselves of the very possibility of governing and managing goods and services in a participatory manner: it is this first-person activity which changes citizens into commoners…
>
> But there are also other overlaps possible between the idea of public and that of Commons, apart from the necessary creation of legislative tools which can protect and encourage Commons and commoning.

[138] Michel Bauwens, "Evolving Towards a Partner State in an Ethical Economy," in Andrea Botero, Andrew Gryf Paterson and Joanna Saad-Sulonen, eds., *Towards Peer Production in Public Services: Cases from Finland* (Helsinki: Aalto University School of Arts, Design and Architecture, Department of Media, 2012), pp. 57–58.

[139] Michel Bauwens, "Peer Governance as a third mode of governance," *P2P Foundation Blog*, June 9, 2010 <blog.p2pfoundation.net>.

Several forms of Public-Commons partnership can be developed, where the role of state is realigned, from its current support and subsidising of private for-profit companies, towards supporting commoning and the creation of common value. This can be achieved through tax exemptions, subsidies and empowerment of sharing and commoning activities, but also, for example, by allocating public and state-owned goods to common and shared usage thanks to projects which see public institutions and commoners working together. This is a road which could be the beginning of a general transformation of the role of the state and of local authorities into partner state, "namely public authorities which create the right environment and support infrastructure so that citizens can peer produce value from which the whole of society benefits"…

These primary commons must not allow discrimination in access to them according to individual wealth, reintroducing the element of equality and fairness, as well as a relationship of care—rather than one of domination or subjection—between humanity and the rest of nature of which it is a part. These are resources which do not belong to and which are not at the disposal of governments or the State-as-person, because they belong to the collectivity and above all, to future generations, who cannot be expropriated of their rights. Distributed participatory management and self-government, inclusion and collective enjoyment, no individual exclusive rights, prevalence of use value over exchange value, meeting of primary and diffuse needs: commons, in this understanding, means all these things.[140]

[140] Michel Bauwens, "Public Innovation is needed to jumpstart Partner State approaches," *P2P Foundation Blog*, July 12, 2012 <blog.p2pfoundation.net>.

5. Basic Infrastructures: Networked Economies and Platform

When it comes to networked economies, it seems to be "steam engine time." Of course it shouldn't be surprising that a wide range of thinkers came up with similar ideas for social organization—as is the case with any other innovation—as soon as the building blocks became available and there was a perceived need for it. The building blocks were the digital revolution and the open Web of the 1990s.

A common feature of all the networked infrastructures discussed in this chapter is that they follow a module-platform architecture. As a result they are scalable without limit, with any number of local communities or organizations being able to connect to them on a stigmergic basis. And one of the advantages of the module-platform architecture is that it makes adoption feasible on a granular basis without any need for society as a whole to reach some "tipping point." It also achieves economies of scope—and minimizes unit costs of infrastructure—by maximizing shared use of the same infrastructure. If a support platform is digital, the number of replicating modules that can share it at zero marginal cost is infinite.[1]

The module-platform architecture has a venerable history. The Rule of St. Benedict, for example, amounted to a protocol.

> - Benedict protocolized. While at Monte Cassino, he writes the Rule as a guide to people wishing to live together in a monastery… Most importantly, the Rule does not specify a set of goals and activities to reach them: it never says "build a library and a scriptorium and start copying manuscripts to preserve knowledge as the Roman Empire goes down in flames", or "build extra space to lodge travelers, since the Early Middle Ages are low on inns". Yet, benedictine monasteries did end up doing those things and others: following the Rule can result in many outcomes, all beneficial from the point of view of Benedict and his crew. Most of them could not possibly have been foreseen by Benedict himself. Since it is a document of instructions, the Rule is software; since it does not carry out a specific task but enables a variety of mutually consistent outcomes, it is not an app. The Rule is a protocol. And what a protocol! It spread all over the world; arguably transformed (mostly for the better) Middle Ages Europe; is still in use after a millennium and a half…
> - Benedict decentralized. Consistently with the protocol nature of the Rule (and, one suspects, with his own mindset as a protocol hacker), Benedict never ac-

[1] Excerpts from a text prepared by Tommaso Fattori as part of the book-project "Protecting Future Generations Through Commons," organized by Directorate General of Social Cohesion of the Council of Europe in collaboration with the International University College of Turin. Quoted in "Research Plan," *FLOK Society Wiki* <en.wiki.floksociety.org> Accessed August 9, 2014.

tually founded an order. Benedictines are not an order in a strict sense; each monastery is a sovereign institution, with no hierarchy among them. The Rule acts as a communication protocol across monasteries. As a result, many flavors of benedictine abbeys were "forked" over the centuries… by mutation and natural selection— this was explicitely enabled by the Rule, which declares itself as "only a beginning" in its final chapter, much in the fashion of TCP/IP being "only a beginning" for, say, video streaming… Most benedictine houses federated loosely into national or supra-national congregations starting in the early 14th century…

- Benedict avoided sterile conflict—and so went viral… Instead of going for Vatican politics, Benedict appears to have focused on running things at home in Monte Cassino and distributing copies of the Rule to whoever wanted one. As a result, more and more people adopted the Rule for their own monastery projects. This way, no one had to waste time negotiating who would be in whose order, who would be the Abbot General and who a second-echelon abbott and stuff like that. The Rule was (still is) good, solid, open source software. People obtained a copy and went about their way. People who used it were more likely to run a successful monastery than people who did not; and so, by the time of Charlemagne, all Europe was infrastructured with successful monasteries running on the Rule.[2]

I. Bruce Sterling: ISLANDS IN THE NET

"The Net" in *Islands* is much closer to an extrapolation from older visions of the "Information Superhighway" than to the post-Tim Berners-Lee World Wide Web. Sterling's Net, written as his story was before the emergence of the Web, was largely divided between a Superhighway of Cable TV and proprietary streaming content, and corporate intranets. It's of a type with most pre-Berners-Lee visions of the Net, like the "cyberspace" in *Neuromancer* and the "metaverse" *Snow Crash*: monolithic, institutional, closed.

Sterling's transnationals did, however, to some extent foreshadow the kinds of platforms later envisioned by David de Ugarte (phyles), Daniel Suarez (the Darknet/D-space), and John Robb (Economies as a Software Service)—see below. The platforms, apparently, almost all belong to transnationals of one sort or another. But the transnationals include a wide variety of enterprise forms.

The protagonists' transnational, for instance—Rhizome—is a worker cooperative with an official philosophy of self-management. Its "bottom line is ludic joy rather than profit," and it has "replaced 'labour,' the humiliating specter of 'forced production,' with a series of varied, playlike pastimes. And replaced the greed motive with a web of social ties, reinforced by an elective power structure." A "large number" of its associates do no paid work at all, but participate in the internal non-money economy of Rhizome or are taken care of as dependents.[3] And it's a worldwide

[2] Michel Bauwens, "Scope, Not Scale," *Al Jazeera English*, March 22, 2012 <www.aljazeera.com>.

[3] Alberto Cottica, "What modern-day social innovators can learn from the life and times of St. Benedict," *Contrordine compagni*, October 18, 2013 <www.cottica.net>.

distributed network of local facilities using the Net—or rather the corporate platform hosted by it—as a base of support.

II. Phyles: Neal Stephenson

The term "phyles," as far as I know, itself comes from Neal Stephenson's novel *The Diamond Age*. The book is set in a fictional world where encrypted Internet commerce destroyed most of the tax base of conventional territorial states,[4] most states became hollowed out or collapsed altogether and the world shifted instead (after a chaotic Interregnum) to organization based on localized city-states, and on transnational distributed networks (the phyles). A phyle, in the novel, was a non-territorial global network. Most phyles were national or ethnic—the neoVictorians and Nipponese were the two most important, but there were many dozens more including Zulu, Boers, Israelis, Mormons, Ashanti, Sendero (Shining Path, a Colombian Maoist-Gonzaloist phyle)—and others were "synthetic" (of which the largest and most important was the First Distributed Republic, a hacker phyle that created and maintained nodes for the global CryptNet). The larger phyles commonly maintained territorial enclaves in major cities around the world, much as Venetian merchant gilds rented enclaves for the habitation of their merchants in major cities on the Mediterranean coast. The neo-Victorian ("Vickies") enclaves tended to predominate in former countries of the Anglosphere; the Nipponese demographic base for recruitment was the territory of the former state of Japan, and Nipponese enclaves tended to cluster in areas of former Japanese economic influence on the Pacific Rim. But there were Vicky and Nipponese "quarters" in most of the major cities of the world. Although the novel is vague on the nature of the support platforms provided by the phyles, it's clear from the specific case of the neo-Victorian phyle that it supports an ecosystem of member business enterprises.

III. Phyles: Las Indias and David de Ugarte

In his series of books culminating in *Phyles*, David de Ugarte developed the phyle concept as a model for real-world organization, in an era of declining states and corporations and rising networks. His primary model for the concept is the Las Indias Cooperative Group to which he belongs (about which much more below). He also devoted an extensive portion of the book to real-world historical precedents for such organizations, including a number of networked merchant organizations and guilds in the Middle Ages (he characterizes his phyle model as "neoVenetian").

De Ugarte's model replicates the features of the Venetians while incorporating the benefits of digital technology and network organization as force multipliers. As he describes the process of their development, first the network replaces centralized systems and then communities arise on the backbone of the network. Finally, some communities evolve into phyles.

> The phyle is a real community (then transnational and virtually born) who collectively have firms or [a] group of firms with the declared objective of feeding economically the autonomy of the community. Community precedes and has always priority over business, so economic decision making processes never can impose its results over the scope of community plurarchy.

[4] Bruce Sterling, *Islands in the Net* (Ace, 1989), p. 195.

> For phyle members there are two "simple truths": the preeminence of the transnational community['s] needs and freedoms over its own economy and the necessity of producing and trading in a plain, non hierarchical environment. When both principles are linked by the economic democracy principle (usually through cooperativist forms) we are talking about neovenetianism…
>
> … [The] phyle itself could be consensually defined as a networked, distributed, small sized, hacker ethic empowered, Internet born organism with high productivity and great resilience [which] has its own universe of myths, narratives and tools…[5]

Las Indias, as described by the members of that phyle, is a case in point.[6] De Ugarte describes how his theory is manifested in their concrete vision for Las Indias:

> We think cooperatives and economic democracy (a rent-free market society), hand in hand with a liberated commons as the alternative to capitalism, can be made possible through distributed networks.[7]

According to de Ugarte, the rise of phyles was a natural outgrowth of the Internet and World Wide Web, and the emergence of transnational linguistic cultures built on the Internet:

> The Internet is the great steroid jar of this century. Take the ethics of the lonesome Ivy League hackers of the 80's and set them loose on the web: in 15 years you will get Linux, Firefox, free music, the Public Domain movement and the end of the old culture industry. Take the old BBS, fanzines and fan conventions, move them to the Internet, and you will get the greatest conversational community boom since the Babel Tower.
>
> When conversations take place in languages such as French, Spanish, or Arabic, they become transnational with great ease. Only 2 out of every 5 people who write in French on the Internet live in France. More than half the readers of any Madrid website with more than 1000 visitors per day are in Latin America. Arabic in the Western Islamic world has gone, in ten years, from being a religious language superimposed onto regional, almost mutually unintelligible varieties (Moroccan, Algerian, etc.), to having a standard that is gradually reunifying the local dialects: Al Jazeera Arabic.
>
> Virtual communities arise in new spaces, the spaces of the various globalisations associated with the great transnational languages. The main players in these communities belong to two generations that have grown up with Himanen's hacker ethic: the network logic of abundance and the work ethic of free software are the glue that binds the blogosphere. The result: conversational communities, identitarian, transnational nonhierarchical tribes, based on the powerful incentive that is recognition.

[5] Neal Stephenson, *The Diamond Age: or, a Young Lady's Illustrated Primer* (Bantam, 1995), p. 247.

[6] David de Ugarte, "Neovenetianism in a nutshell: from networks to phyles," *El Arte de las Cosas*, September 18, 2010 <elarte.coop>.

[7] The following account of the origins of Las Indias is based on statements of several members of the phyle. They include: "Syntectics: Las Indias Cooperative Group," *myninjaplease.com*, November 15, 2010 <www.myninjaplease.com>; De Ugarte, "Phyles," *El Correo de las Indias*. Accessed October 19, 2011 <deugarte.com>; Maria Rodriguez Munos'

> Let us place these communities in the midst of the whirlwind that is a world where national states are sinking and the globalisation of the economy is eroding all the good old institutions that used to make people feel secure. Many of these communities will wish to have their own economy, community companies and common funds (de Ugarte, "Phyles").

The Las Indias cooperative arose from the cyberpunk milieu in Europe, centered in Berlin, and more particularly Spanish circles affiliated with it:

> With the years it developed into an ezine and a civil rights' cyberactivist group (de Ugarte, from *My Ninja Please* interview).
>
> … Originally a civil rights group, during the late 90s it became strongly influenced by Juan Urrutia's "Economics of Abundance" theory. Very soon, we linked "abundance" with the idea of empowerment in distributed networks. We are very clear on this point: it is not the Internet by itself, it is the distributed P2P architecture that allows the new commons (de Ugarte, from *Shareable* interview).

Spanish cyberpunks went from cyberactivism and literature to constituting a group of cooperative enterprises straddling South America and Madrid.

> In 2001, Juan Urrutia had published his well-known essay "Networks of people, the Internet, and the Logic of Abundance" in the theoretical magazine *Ekonomiaz*. Distributed networks appeared as the basis of new P2P relationships and an ever-growing diversity. We cyberpunks recognized in this essay the basics of of the new economic theory we needed to be able to "export" the new freedoms we were experiencing on the network to new parts of life. That was when we started calling the Internet "the Electronic Indies."
>
> But in 2002 three of us [David de Ugarte, Natalia Fernandez, Juan Urrutia[8]] founded Las Indias Society, a consultancy firm focused on innovation and networks

personal email of November 13, 2011; Neal Gorenflo, "The Future Now: An Interview With David de Ugarte," *Shareable*, February 20, 2012 <www.shareable.net>; "Spanish Cyberpunks as Multinational Worker Cooperatives," *Wired*, March 13, 2014 <www.wired.com>. Because I fused so many bits and pieces from these different documents into a single narrative, my only attributions to individual sources are for material in quotes.

> dedicated to empowering people and organizations. Our experience soon became very important in understanding the opposition between "real" and "imagined" communities, and the organizational bases for an economic democracy. After the cyberpunk dissolution in 2007, the "Montevideo Declaration" openly stated that our objective will be to construct a "phyle," a transnational economic democracy, in order to ensure the autonomy of our community and it members (de Ugarte, from *Shareable* interview).

[8] "Spanish Cyberpunks as Multinational Worker Cooperatives."

Their new banners: economic democracy, resilience, and transnationality. They changed names: now they are known as "Indianos," the Spanish word for the emigrant who would return to his home village after making his fortune in the Americas. Only that the Indianos' America has been the Internet, and their business has spread from consultancy to sustainable production or local development (de Ugarte, "Phyles").

> But even though the dream was abundance, the new beginning wasn't easy. Our three thousand and seven euros in capital weren't even enough to pay our incorporation costs and the first month's rent on a micro-office. The solutions we choose then were important, and gave shape to the nature of the project itself, changing our life right up to today.
>
> The most urgent short term objective was to find clients. But we didn't have money to buy ads, or social relationships in the corporate world. We needed new tools to talk about our experience, to show, in the darkest days of the dot-com crash, that our small business was viable, and that we had real contributions to make to traditional businesses. We looked online for business blogs all over the world … and we didn't find a single one. There was no model to follow. We began to write, and on the seventh of October, 2002, el Correo de las Indias [the Indies Mail] was born, with Bitácora de las Indias [Log of the Indies] in the masthead. It was the first business blog in the world, and later would also be the first whose posts, thanks to a well-known publisher, would be published as a book. The blog was the way we found our clients, but, more importantly over time, the current indianos.
>
> On the other hand, during the time when we had no clients or we had few sales, the two worker-members, Nat and I, received no salary. We didn't have enough money for that. I slept in the office, Nat worked some hours outside of the Indies, and we had just enough to eat each day and pay the rent on the office and a room in a shared apartment where Nat lived. Later, when clients started coming in, we decided to take the minimum amount of money necessary to support a normal level of consumption and comfort.
>
> The business would be the economic structure of the community we were creating, and as such, would have all of the the sources of wealth and income; we would not have—and still don't have—savings, properties, or personal clients. The cooperative is our community savings and the only owner of all that we enjoy. With the passage of time and the growth of the Indies' community and economy, the first Indies headquarters appeared with the same spirit: wide-open common facilities, with accommodations and offices, personal and common spaces all as property shared among everyone. In short: economically, we're closer to a kibbutz than to the big cooperatives at Mondragon.[9]

Problems like different nationalities, legal regimes and passports caused—to say the least—serious inconvenience for a virtual community that transcended national boundaries. Some members of the Spanish cyberpunk movement participating in this loose virtual community "realized

[9] David de Ugarte, "The Indies and the Indianos, Ten Years Later," *Las Indias in English*, August 16, 2012 <english.lasindias.com>.

that a virtual community couldn't remain strong and independent without an economic structure" (Maria Rodriguez email).

> It meant a lot more of discussions, ideas and study, but finally we arrived to the idea of building our own economical structure in order to give safety to our way of living and to the liberty we always loved but we only lived in the Internet. As we had seen at this moment, wars, some states to fall and some democratic revolutions to fail, we thought from the very first moment in non-national terms. The only possible security—we thought—is to have a distributed environment and distributed income sources in the same way Internet's safety is based in it's distributed architecture.
>
> Las Indias Cooperative Group is the materialization of this project (de Ugarte, *My Ninja Please* interview).

Jose Alcantara elaborated on this in the *My Ninja Please* interview. Based on their realization of the need for a common economic structure, and on their ideological affinity for the principle of economic democracy, they first built a Las Indias electronics cooperative in 2002 and then set up over it, as an umbrella structure, the Las Indias Cooperative Group as a transnational cooperative. The Las Indias phyle is "a transnational community of people that guarantee their autonomy and freedom through companies organized by the principle of the economic democracy around Las Indias Cooperative Group" (Rodriguez email). The Group started out with "a small community of only three persons" in 2002, and has since grown to include not only two cooperative firms, but "two comfortable 'bases' (Madrid and Montevideo) and… is seeding our environment, promoting new business— four only during the past year" (Rodriguez, *My Ninja Please* interview).

According to Natalia Fernandez, the electronics cooperative, the first cooperative of the Las Indias group, "has also been our engine over the years."

> Born with a capital of only 3000 euros, we developed, and have developed projects in the past, with a number of companies in the IBEX35 (Madrid Stock Exchange) and public institutions such as the Ministry of Foreign Affairs of the Government of Spain. The activity of La Sociedad Cooperativa de las Indias Electronicas covers a wide geographical area that includes Spain and Latin America (*My Ninja Please* interview).

Manuel Ortega added, in the same interview, that the electronics cooperative was "the head of the Cooperative Group. It centralizes the commercialization of our products and services." It was also, he said, "the embryo of the economic democracy in the Indiana phyle."

Las Indias is a phyle based largely in the Spanish-speaking world, with its two primary physical bases in Madrid and Montevideo. As the members of the phyle explained in the *My Ninja Please* interview:

> David de Ugarte: They are the first two dots of a distributed network of places, offices, business and social infrastructures we are dedicated to build…
>
> Maria Rodriguez: There is not much relation between the two cities, but there is a strong emotional relation between las Indias and Montevideo. Madrid is the easiest place for making business in the Spanish-Portuguese-speaking-world… So we make

> business mainly in Madrid, but we enjoy mainly Montevideo. Anyway, we hope to open new "bases" in other [Latin] cities soon …
>
> Jose F. Alcantara: Madrid is where it all began, even though most of us are not from Madrid. Montevideo symbolizes our will of living transnationally, our commitment to achieve that and the very first touchable fact that we are on the right way. Montevideo is where we decided to set our first stable location. We chose that for many reasons including practical ones (Montevideo is really well connected with every important city in the region as Sao Paulo, Buenos Aires or many others, so that it enables us to really operate in the whole Ibero-american region from a single city) and personal ones (Uruguay is a quiet country with a profound democratic culture. Add the nice restaurants and the fact that Montevideo is placed near the sea and you'll have it made).

This community is central to understanding the phyle. Alcantara says the phyle is a community of people who know each other, and subsequently "decides to give birth to some enterprises… [I]t's also important to understand that the community goes before, and will always go before, the companies. Our community owns the companies, not the other way." And de Ugarte adds that the community, the Las Indias phyle, is "the owner of our coops."

> If you add to it transnationalization you will have an egalitarian community which organizes its own economy as a democracy and which is defined over state and national borders. We call it a "phyle" (*My Ninja Please* interview).

The term "platform" probably gives too weak an idea of the relation between the phyle and its enterprises. As de Ugarte's reference to the phyle as "owner" of the cooperatives suggests, it is not just a secondary network built on member cooperatives as primary units; the cooperative enterprises bear the same intimate relationship to the phyle that their counterparts do in the Mondragon system or *Kibbutzim*.

> Indianos are communities that are similar to kibbutzim (no individual savings, collective and democratic control of their own coops, etc.)…
>
> Phyle is a community that develops an economic structure based in economic democracy in order to ensure its own autonomy. The order of the terms is important: phyle is a community with firms, not a community of firms, nor a community of people who own some firms. The firms are tools for the autonomy of the community… , and are always less important than the needs of community members. (de Urgarte, from *Shareable* interview).

De Ugarte described the relationship between the phyle as a whole and its individual members, and the projects of working groups within the phyle, in a November 2012 article:

> The structure of the Indiano phyle is made up of
>
> - The Assembly of the Indianos. Made up of all the Indianos, it decides in common what part of the available surplus from the Indianos' work will be dedicated to the common funds, and gives direction about its management to the specific

working groups or projects charged with its use, evaluating their results and tutoring their performance. When it is time to make decisions about the common structure and its resources, the Indianos act as freely associated people, each one speaks, contributes, and participates in decisionmaking for him/herself. The demos of the Indiano economic structure is made up exclusively of Indianos, and not groups, projects, or structures.

- The working groups. The Indianos develop their economic activity in different productive projects born of their initiative, but which can be shared with other people, projects, and organizations. Each one will have its own forms and balances, born of free agreement among the parties, and each one is sovereign to dictate its own course through its guiding bodies, which are made up, to a greater or lesser extent, by Indianos who work on that project or on others. The Indianos can't be a brake on that sovereignty or subordinate support for it to interests other than those of the project itself and the people who develop it. So, considering the general organization of our social structure, it's not the projects themselves that sustain the common structure, but rather their working groups, when they are formed by Indianos.
- The structural projects. In spite of the above, we Indianos have created projects with different forms—cooperatives, associations, societies—formed exclusively by us and oriented towards the development of specific functions to bring about a common system of entrepreneurship, training, well-being, and support for the cohesion of our surroundings.[10]

The individual working groups and their projects—cooperatives, etc.—do have some obligations to the phyle. They share a portion of their surplus with the phyle, which uses the revenue to support its own functions and allocate capital to new projects.

> Each working group, both in projects made up exclusively of Indianos and in projects formed in association with others, administers a fairly large part of the surplus of each project. That available surplus—and not the general results of the project—is the starting point from which each group can contribute to the common structure.
>
> In the worker co-ops made up exclusively of Indiano worker-members, they are completely sovereign over the surplus, so, the total surplus of the project will be counted as the available surplus, after discounting the obligatory reserves and the contributions to the wider networks the group is part of.
>
> In cooperative projects developed with other partners, available surpluses will be calculated after deducting reserves, contributions to common networks, and the portion dedicated to paying financial partners, provided they are not workers in the cooperative.
>
> In the anonymous and limited societies [corporations], what will be counted as available surplus is participation in results, as well as the funds that respective manage-

[10] *Ibid.*

ment bodies may dedicate to training, well-being, etc., in cases where they leave the administration of their destiny in the hands of the members of the working group.[11]

In the *My Ninja Please* interview, de Ugarte mentioned Sterling's *Islands in the Net* as prefiguring the phyle organization. "[I]n a time where national states are day by day more clearly the problem," he said, virtual communities "empowered by coops as economic democracies" are a possible alternative.

The internal cultural milieu of the phyle is propagated by a variety of online platforms, like aggregated member blogs:

> David de Ugarte: I think it is a good representation of what we are. Posts are written in individual, personal blogs. If one day you decide to go, you take what you gave with you (as it happens with cooperatives capital). But the interesting thing its that when you read lasindias.info… you will find that the result is far away from the mere addition of individual sources. It's not just an aggretator, even [though] technically it is just an aggregator of our blogs and wikis. There is interaction, truly interaction of everyone, from personal independence, reflecting the permanent discussion, the social digestion of information, personal and collective experience.
>
> Maria Rodriguez: El Correo de las Indias is the newspaper of our world, the world of las Indias. As any newspaper it has its own hierarchy: latoc [Latin] world strategic news (energy, globalization, etc.) and environmental news make the headers, the second line of news is made by the two cooperative's blogs; one is focused on social effects of Internet, the other on economic democracy and cooperativism, then you have our personal blogs headlines and finally our most "cultural" part …
>
> … We write everything in our personal blogs and according the way a post will be tagged it will appear in a section or another. Because of it, it is the public representation of our community: it is not over the personal stuff, it is just that if you order what we write and you aggregate all in a single place you will get a map of las Indias common thoughts and deliberations. That is El Correo's magic…
>
> Natalia Fernandez: El Correo de las Indias is a small sample of we are and we do. In El Correo we share our interests, theoretical reflections and deliberations. El Correo represents our dimensions and we have all a community, personal and business dimension. A new user will find articles on sociotechnology, economy, environment and business intelligence. But that new user will also get to read a theoretical framework, personal blog posts and even the recipes develop and/or adapt in our daily cooking here in Las Indias. [*My Ninja Please* interview].

As for the specifics, the basic ideological principles, of the Las Indias phyle's culture: the Group's principles of identity and action, Maria Rodriguez explained in private email, are "distributed networks and abundance logic, transnationality, economic democracy, the hacker ethic and *devolutionismo* (devolutionism)."

[11] David de Ugarte, "Foundation of the Indianos Phyle," *Las Indias*, November 26, 2012 <english.lasindias.com> Translated by Steve Herrick.

The distributed network architecture is intended to achieve maximum freedom and autonomy for the participating communities, by avoiding dependence on some single node (which would generate "control and dependence"). Abundance logic reflects a desire to overcome the "artificial creation of shortage" which is central to the business models of so many conventional capitalist ventures. The principle of transnationality derives from the phyle's origins.

> As a result of the evolution from a virtual community (cyberpunk movement), we never had a unique location or a national identity. That's why the members in our community have different passports but the same rights and responsibilities, participate in the same deliberation and work in the same network. We don't feel as part of any nation or any imagined community… , our center is our real community (the people we know and we love, and people that make up our environment and the environment of our environment). For the same reason, our work and our deliberation run at the same time in several cities in different parts of the world, and that's because we move between them.

The internal governance of the economic structure is based on economic democracy. Because the phyle collectively confronts genuine shortage situations, members must decide between options. The best way to deal with such scarcity is, externally, in an open market ("without dependence on donors or subsidies"), and internally making decisions democratically as to the most efficient way to allocate limited resources. As described by de Ugarte, economic democracy is strongly reminiscent of the "free market anticapitalism" I've advocated in much of my writing:

> We think cooperatives and economic democracy (a rent-free market society), hand in hand with a liberated commons as the alternative to capitalism can be made possible through distributed networks.
>
> But we are economic democrats, so we don't want the state to provide the alternative to crony-capitalism and accumulation. Indeed, we think it can't. We have to build it by ourselves, and demand the state to remove the obstacles (as IP, contracts for big politically connected corporations, etc.) that protects privileged groups' rents from competition in the market.
>
> The alternative will not be build through government regulations, but inside our own networks. It will not defeat the corporate organization through courts or elections, but through competition…
>
> I hope we will know a society where capitalism will be marginal but with a market that will not allow rents nor privileges, where the mix of small and ubiquitous tools of production will be furthered by big global repositories of public domain designs as innovative and popular as free software is now (*Shareable* interview).

The phyle is both a safety net and a safe haven, giving members a base—a "Digital Zion"—from which to operate:

> Natalia Fernandez: The Cooperative Group is the legal form that orders our economic activity. In our organization, people are above companies, this means we organize ourselves according to our needs. The happiness and welfare of each of us is above

> the economic benefit. This allows us to decline those well-paid jobs that do not satisfy us and this also allows us to build together a free and full life.
>
> Manuel Ortega: The Grupo Cooperativo de las Indias is the materialization of the economic structure of the indiana phyle. It's comes from years of constructing and it looks a way to administrate scarcity, a need which appear when we want to put our lives like a Digital Zionism into reality. And a need that take us to Economic Democracy [*My Ninja Please* interview]

The lifestyle combines a much lower material footprint and cost of living with a high quality of life, largely through ephemeralization and informalization and the sharing of capital goods. That means, in particular, a shift toward low-rent housing and a quality of life based mainly on immaterial goods. A large share of the things they consider indispensible for a high quality of life are free, abundant, nonrival goods.

> So, some years later our incomes increased, we earned autonomy, but for us a good living still means good broadband, access to cultural works, good museums, and good meals in comfortable but not very expensive flats downtown. None of us has a car or has bought a house.
>
> But please don't get confused. We don't make of austerity a cult. We simply have a different culture, we enjoy different things. None of us has a TV neither, but many of us have projectors for watching videos off the Internet (de Ugarte, *Shareable* interview).

The hacker ethic, as described by Rodriguez, sounds much like the ludic ethos attributed to Bruce Sterling's fictional Rizome network in *Islands in the Net*.

> The hacker ethic represents the values of a distributed network world and forms our way to understand cooperativism. We would sum it up as: 1) The affirmation of a new work ethic with the knowledge as driving force and main motive in the productive activity and in the community life. 2) There is no division between joy time and work time in the social production of knowledge, which involve the vindication and practice of multi-specialization. 3) The freedom of doing as fundamental value: against the existing institutions we don't demand things to be done, we do it by ourselves and if there is a claim, it would be to eliminate the obstacles of any kind that stop us from building the necessary skills to develop freedom and well-being in our environment.

Las Indias proves it is possible "to develop knowledge, cultural goods and free skills liberating all our works" through open licenses. (Rodriguez email, November 13, 2011).

The internal democracy of the phyle is based on principles of distributed intelligence and deliberation.

> David de Ugarte: I believe in deliberation as the way to develop a common open source intelligence by a community.

> Deliberation means long term discussion without the urgency of taking a decision. A permanent and opened deliberation—what you can see in our chat rooms, blogs and newsgroups—leads, in time, to consensus, but also to a great diversity of personal positions and points of view.
>
> We try to build from these consensus a guide for decisions on scarcity (economy) but we also know that our most precious treasure is diversity. The wider our diversity is, more freedom will be enjoyed by any of us, more fertile will be our ideas and intellectual creations and more valuable will be our proposals to the market…
>
> Jose F. Alcantara: If there's a way of improving the intelligence we all own as single persons, it is not to aggregate them as they used to tell us on *the wisdom of crowds*. No, if there's something that really makes a difference is the intelligence you give birth when different people put their efforts on a distributed way. Under this architecture, when you let people work and coordinate their efforts freely, synergies emerge. Whether it is or not something higher, the only think I'll admit is that its success is not based on collective efforts, but on the way you let them interact: the distributed architecture is the key.
>
> Natalia Fernandez: The key word would be "distributed" instead of collective. Connect all nodes, eliminate the hierarchy and you'll be allowing that all knowledge to flow through the members of the network (*My Ninja Please* interview).

Las Indias was not the only virtual tribe to emerge in the same period, as de Ugarte points out. "In these very same years,"

> the Murides, the old pacifist Sufis from Senegal, went from having a nationalist discourse and growing peanuts to constituting a community trade network with two million members that spreads from South Africa to Italy. Its transformation isn't over yet, but the young Murides have turned the daïras, the old Koranic schools, into urban communes that are also business cells.
>
> At first blush, nothing could be farther apart than cyberpunks and the Murides. But the parallelism is significant: they are not companies linked to a community, but transnational communities that have acquired enterprises in order to gain continuity in time and robustness. They are phyles.
>
> Phyles may function democratically and be cooperative-based, as in the case of the Indianos, or else they may have a small-business structure and even a religiously inspired ideology, as in the case of the Murides. But they share two key elements: they possess a transnational identity, and they subordinate their companies to personal and community needs.
>
> Phyles are "order attractors" in a domain which states cannot reach conceptually and in areas that states increasingly leave in the dark: phyles invest in social cohesion, sometimes even creating infrastructures, providing grants and training, and having their own NGOs. Transnational thinking allows them to access the new globalised business before anyone else. A phyle's investment portfolio may range from renewable energies to PMCs, from free software initiatives to credit cooperatives. Their bet

> is based on two ideas. First: transnational is more powerful than international. Second: in a global market the community is more resilient than the "classic" capitalist company.
>
> Winning a bet in the cyberpunk and postmodern world we live in nowadays amounts to nothing but resisting and thriving. In order to do so, one must truly belong in this world, truly love its frontiers. Phyles are the children of its explorers: of free software, virtual communities, cyberactivism, and the globalisation of the small. Maybe because of this, they are indubitably winning their bet (de Ugarte, "Phyles").

In fact the phenomenon seems to be the wave of the future, given the growing economic importance of ethnic diasporas around the world coupled with the increasing availability of network communications technology:

> Consider the difference between China and the Chinese people. One is an enormous country in Asia. The other is a nation that spans the planet. More Chinese people live outside mainland China than French people live in France, with some to be found in almost every country. Then there are some 22m ethnic Indians scattered across every continent… Hundreds of smaller diasporas knit together far-flung lands…
>
> Diasporas have been a part of the world for millennia. Today two changes are making them matter much more. First, they are far bigger than they were. The world has some 215m first-generation migrants, 40% more than in 1990. If migrants were a nation, they would be the world's fifth-largest…
>
> Second, thanks to cheap flights and communications, people can now stay in touch with the places they came from. A century ago, a migrant might board a ship, sail to America and never see his friends or family again. Today, he texts his mother while still waiting to clear customs. He can wire her money in minutes. He can follow news from his hometown on his laptop. He can fly home regularly to visit relatives or invest his earnings in a new business.
>
> Such migrants do not merely benefit from all the new channels for communication that technology provides; they allow this technology to come into its own, fulfilling its potential to link the world together in a way that it never could if everyone stayed put behind the lines on maps. No other social networks offer the same global reach—or commercial opportunity.
>
> This is because the diaspora networks have three lucrative virtues. First, they speed the flow of information across borders: a Chinese businessman in South Africa who sees a demand for plastic vuvuzelas will quickly inform his cousin who runs a factory in China.
>
> Second, they foster trust. That Chinese factory-owner will believe what his cousin tells him, and act on it fast, perhaps sealing a deal worth millions with a single conversation on Skype.
>
> Third, and most important, diasporas create connections that help people with good ideas collaborate with each other, both within and across ethnicities.

> In countries where the rule of law is uncertain—which includes most emerging markets—it is hard to do business with strangers. When courts cannot be trusted to enforce contracts, people prefer to deal with those they have confidence in. Personal ties make this easier…
>
> A study in 2011 by the Royal Society found that cross-border scientific collaboration is growing more common, that it disproportionately involves scientists with diaspora ties and that it appears to lead to better science (using the frequency with which research is cited as a rough measure)…
>
> Diaspora ties help businesses as well as scientists to collaborate. What may be the world's cheapest fridge was conceived from a marriage of ideas generated by Indians in India and Indians overseas. Uttam Ghoshal, Himanshu Pokharna and Ayan Guha, three Indian-American engineers, had an idea for a cooling engine, based on technology used to cool laptop computers, that they thought might work in a fridge. In India visiting relatives they decided to show their idea to Godrej & Boyce, an Indian manufacturing firm…
>
> The "new type of hyperconnectivity" that enables such projects is fundamental to today's networked diasporas, according to Carlo Dade, of the Canadian Foundation for the Americas, a think-tank. "Migrants are now connected instantaneously, continuously, dynamically and intimately to their communities of origin… This is a fundamental and profound break from the past eras of migration." That break explains why diasporas, always marginalised in the flat-map world of national territories, find themselves in the thick of things as the world becomes networked.[12]

In similar language, Alcantara in the *My Ninja Please* interview describes the Las Indias and Murides as logical outgrowths of the technological and organizational changes of our time:

> The Internet is the revolution of our times. The consequences it will have on the way the world is organized can already be felt. The emergency of real communities—as the phyles—and the lost of the hegemonic power the States used to have are both effects due to the same cause: our communications are mainly based on a network that, for the first time in all history, has a distributed architecture. This is an important, not negligible aspect that's already transforming, and doing it from the very roots, our world.
>
> One of the consequences of these changes is that many non-State actors (they may be corporations, or huge cooperative groups as Mondragon, or real communities as the Murides), may realize that they have a role to play in the new transnational arena…
>
> One of the consequences of having our world organized through a distributed network comes from the economy. From an economic point of view, the Internet has consequences as it removes the barrier to entry for many markets. Consequently and unexpectedly, you may find yourself having access to new markets originated around the Internet, but also to some old markets whose access were forbidden in the past due to many reasons (need of intensive capitalization, oligopolies that were

[12] *Ibid*.

> restricting the free competence). But the emergence of markets with a virtual infinite competition also removes the rents: the benefits that came from having a control over a market with a restricted competence. Under this circumstances, innovation and development are the only way of improving benefits. But as they provide extra benefits only for a short period of time, the need of internalization of these processes, so that continuously we have some new development or some brand new innovative strategy, are key to the survival of any community.

Las Indias continues to expand by creating new member structures in new areas:

> This September, we'll found two new businesses in Bilbao called Gaman and Fondaki. Gaman will make free software. Fondaki will be the first Public Intelligence business in Europe. Both will create jobs—based on a new values system, with products designed to strengthen the fabric of small businesses—for a dozen people, in the middle of the most important crisis, with the highest unemployment rates, in all of Iberian economic history.[13]

This confederal model is the logical outgrowth of trends toward both digital networks and relocalized physical production (or as John Robb puts it, localize, virtualize)

> … the evolution of the transition towards a P2P mode of production has been accompanied by the appearance of new, deterritorialized, transnational, and even nomadic, communities. Among these, from China to Senegal, more and more are developing different forms of economic autonomy. Autonomy that the development of the P2P mode of production can't help but reinforce. The first decades of the century are also a seminal stage for dozens of phyles we've been finding throughout the world…[14]

In the Montevideo Declaration, the founding document of the Las Indias phyle, de Ugarte writes:

> A person is only free if [he] owns the foundations [of] his own livelihood, when he has no obligation to pay homage to anyone and can leave his network effectively if he understands that no longer serves the needs of their own happiness, happiness that only himself can judge.
>
> Effective access by each one to property and general commercial development, are therefore the economic foundations of any citizenship that does not consist in a mere representation. We name this simple truth as Neovenetianism.
>
> The *indiano*'s phyle is a network of free merchants and entrepreneurs dedicated to the purpose of building and testing a space of economic democracy, made without coercion or any state or group and dedicated to the development of a transnational and deterritorialized space in which to deepen the freedoms and rights that enable a full life in overlapping and non-coercive pluriarchic communities.

[13] "Migration and business: Weaving the world together," *The Economist*, November 19, 2011 <www.economist.com>.

[14] De Ugarte, "The Indies and the Indianos, ten years later."

> For this purpose we constitute ourselves as a freely distributed network of people, acting politically by themselves and economically through coordinated and voluntarily allied firms to create a common infrastructure of bases, distributed throughout the world, which must serve to free our trade and our discussion of the vicissitudes of any state or market and, above all, to provide equal opportunities for all members, regardless of the state that provides them with a passport.[15]

By 2012 the Las Indias ecosystem had grown to include four cooperatives: "Las Indias (a consultancy dedicated to innovation and network analysis); El Arte (a product-lab where we develop products from books to beer to software); Fondaki (global and strategic intelligence for small businesses) and Gaman (educational tools and campaigns)."[16] Las Indias recently signed an agreement with the main credit cooperative in Uruguay, with the intention of using microfinance to bootstrap the development of new member cooperatives (de Ugarte, from *Shareable* interview).

Another useful fictional illustration, alongside Stephenson's—and perhaps more relevant to de Ugarte's neo-Venetian model—is the starfaring human subspecies in Poul Anderson's "Kith" series, genetically and culturally isolated by time dilation from the rest of the human race. With lifetimes of thousands of years from planet-bound perspectives, and an individual returning to any one planet only at intervals of decades or centuries, the starfarers (much like de Ugarte's Venetians) rented Kith enclaves (the "Kith quarter," much like the Greek or Jewish quarters in the cities of the Western Roman Empire) in spaceport cities on planets throughout the area of human settlement to house merchants on-planet at any given time. Kith families maintained houses in the clave that were occupied by any members currently doing business there.

De Ugarte has referred directly to John Robb and to Suarez's Darknet (see below) as fellow travelers with his phyle movement. Interestingly, the Las Indias cooperative uses the Freenet as an internal communications and webhosting platform, and de Ugarte recommends it as a primitive version of the Darknet envisioned in Suarez's work.[17] Although de Ugarte mentions Freenet in the context of John Robb's writing and Daniel Suarez's novels, he admits it is still nowhere near the level of technical advancement they envision. Freenet "is still far from the darknet described in *FreedomTM*, accessible through augmented reality goggles." Local Freenets are a lot like the Web of the mid-90s, when updating a website took time, searches were slow, and blogs (or *flogs*—Freenet blogs) had to be written without ready-made software like Wordpress and Blogger. Nevertheless, it is a forerunner to what Robb and Suarez envisioned, of "entire virtual economies" built on local darknet platforms.

IV. Bruce Sterling: THE CARYATIDS

The Caryatids is set in the world of the 2060s, where most nation-states have collapsed from the ecological catastrophes—desertification, droughts, crop failures, rising sea levels, monster

[15] David de Ugarte, "Asymmetrical confederalism and the P2P mode of production," *El Correo de las Indias*, May 31, 2012. Translated from Spanish by Steve Herrick of Interpreters Cooperative <english.lasindias.com>.

[16] Sociedad de las Indias Electrónicas; Grupo Cooperativo de las Indias, "Las Indias Montevideo Declaration," translated by de Ugarte. The original was a foundational document of the las Indias phyle, published in June 2008 <p2pfoundation.net>.

[17] "Fondaki, a new firm focused on public service," *Las Indias*, September 5, 2012 <english.lasindias.com>.

storms, and multi-million refugee *Volkswanderungs* as entire countries became uninhabitable—of the previous decades.[18]

The world is dominated by two networked global civil societies, the Dispensation and the Acquis. The two civil societies coexist uneasily, engaging in constant worldwide competition and sending teams to monitor each other's activities under the terms of a negotiated accord (something like the system of meta-law that regulates relations between the phyles in *The Diamond Age*). Both are engaged in the reclamation of devastated areas and oversee networks of refugee camps housing millions of displaced persons. Both have ideologies strongly centered on sustainable technology. The Acquis is largely green, open-source and p2p in orientation. The Dispensation is commercial and proprietary, oriented toward what we would call the Progressive/Green/Cognitive Capitalism of Bill Gates, Bono and Warren Buffett.

The two networked societies are articulated into local enclaves much like Stephenson's, although the Dispensation is more geographically centered than the Acquis. Its cultural and geographical heartland is southern California and Greater Los Angeles, with vague references to a surviving legislature and governor in Sacramento. The Acquis, on the other hand, is more purely networked, with its claves widely distributed around the world and no one geographical base. The major urban centers of Europe appear to be Acquis, and there are large Acquis claves in Seattle, Madison, Austin, San Francisco and Boston.

The Acquis, and in particular its experimental reclamation project on the Adriatic island of Mljet, is most relevant to our consideration here of networked platforms. The Acquis team there is linked by the "sensorweb," a neural network, with brain-computer interfaces. Individuals can maintain constant realtime communications with the rest of the team, or surf the Net by cerebral cortex. The neural net enables anyone connected to it to view the physical world, wearing uplink spex, with a virtual overlay superimposed on it. Team members are able to semantically tag real-world objects with information; the whole visual world is like a graffitoed wall, with objects labeled for significance, linked to relevant sources online, and indexed to each other.

V. Daniel Suarez

In the fictional world of Daniel Suarez's novels *Daemon* and *Freedom(TM)*, local mixed-use economies (holons) are built on common Darknet platforms; in Suarez's terminology, the holons are local nodes in the Darknet economy. The virtual layer superimposed on the physical world, and the individual interface with it, are much the same as Sterling's Sensorweb. Darknet members use heads-up display (HUD) glasses kind of like a grandchild of Google Glass to see into an augmented reality or virtual dimension called "D-Space," which is "overlaid on the GPS grid." D-Space is built from the mapping architectures of massively multiplayer online role-playing games (MMORPGs), but tied to to the physical world as an overlay via GPS coordinates and to physical objects via RFID chips. Like Sensorweb, the virtual layer shows information tags attached to physical objects (including identification and reputational metrics appearing above other people's heads). Micromanufacturing operations between shops full of CNC tools using

[18] David de Ugarte, "Darknets: más allá de la frontera del control," *Sociedad de las Indias Electronicas*, December 7, 2010 <lasindias.coop>; "(cid:1)Por qué me gusta tanto Freenet?" *El Correo de las Indias*, December 15, 2010 <deugarte.com>.

digital design files are coordinated in D-Space via an open-source version of the "Internet of Things."

According to Clay Shirky, early conceptions of "cyberspace," whether that of William Gibson or that of John Perry Barlow, were shaped in a world where those connected to the Internet were a tiny minority of the total population and hence unlikely to know each other in "meatspace." Cyberspace was "a kind of alternate reality mediated by the world's communications networks," "a world separate and apart from the real world." Back then, Shirky argues, the concept of cyberspace made sense, because there was little overlap between one's social relations online and offline: "the people you would meet online were different from the people you would meet offline, and these worlds would rarely overlap."

> But that separation was an accident of partial adoption. Though the internet began to function in its earliest form in 1969, it was not until 1999 that any country had a majority of its citizens online… In the developed world, the experience of the average twenty-five-year-old is one of substantial overlap between online and offline friends and colleagues… The internet augments real-world social life rather than providing an alternative to it. Instead of becoming a separate cyberspace, our electronic networks are becoming deeply embedded in real life.[19]

If d-space is overlaid on the physical world, rather than constituting a separate "cyberspace" dissociated from the physical world, then it reinforces physical community and becomes a tool for facilitating it. Such a platform promotes relocalization, and builds social capital.

VI. John Robb: Economies as a Social Software Service

For some time, John Robb has written about Resilient Communities— generally along the same conceptual lines as Transition Towns or Global Villages—as an emergent form of social organization to fill the void left by the collapse of the centralized state and large corporation.[20]

> Not only are nearly all governments financially insolvent, they can't protect citizens from a global system that is running amok. As services and security begin to fade, local sources of order will emerge to fill the void. Hopefully, most people will opt to take control of this process by joining together with others to build resilient communities that can offer the independence, security, and prosperity that isn't offered by the nation-state anymore.[21]

Parallel with this line of thought, he has also been exploring the idea of networked platforms as a support base for his resilient communities. In his 2006 book *Brave New War*, he discussed the importance of platforms as a vehicle for decentralization.

> A platform is merely a collection of services and capabilities that are common to a wide variety of activities aggregated in a way that makes them exceedingly easy to

[19] Bruce Sterling, *The Caryatids* (New York: Ballantine Books, 2009).
[20] Clay Shirky, *Here Comes Everybody*, pp. 194–196.
[21] <globalguerrillas.typepad.com>.

> access. The benefit of this approach is that it becomes easier for end users of this platform to build solutions because they don't need to re-create the wheel in order to build a new service, and it is easier for participants to coordinate and interconnect their activities.[22]

Platforms can include VOIP and teleconferencing services, collaborative tools like wikis, peer rating services, capital aggregating services like Kickstarter, digital currencies of various sorts, and encrypted darknets, and a wide range of software, like CAD software for creating open-source industrial designs that can be shared between widely separated designers and micromanufacturers around the world.

In a couple of blog posts in December 2009-January 2010, he developed this theme, apparently under the influence primarily of Suarez, but in language that also sounded very much like de Ugarte's.

> A Darknet is the system that runs an autonomous social network (a tribe, a constellation of resilient communities, a gang, etc.). It is composed of a software layer and hardware infrastructure that connects, organizes, allocates, and automates the functions of the synthetic social system it is built for. Some details:
>
> Software can be built that automates the rules by which any social and economic system operate. Nearly any social construct imaginable can be automated (at least on a small scale). Whether it works efficiently or is appealing to recruits is another story entirely. Early experience in MMO games and social software development indicate that this is not only possible, but probable.
>
> The networks hardware and software infrastructure ensures that all *members* of the network are provided access to the system and the tools necessary to use it effectively. It is also constructed in a way that makes it opaque to outside observation and impervious to non-members or intrusion.
>
> This system, both economic and social, runs both in parallel and in conjunction with the global economy… It is self-referencing, autonomous, and willing to defend its own interests. It can be parasitic or additive to the global environment (or more effectively: both). It is competitive with other entities that operate within the global environment, from nation-states to corporations.
>
> "Darknet" is a term used by Daniel Suarez, in his books *Daemon* and *Freedom* (TM)…[23]
>
> Which social, political and economic system can BOTH protect you from the excesses of an uncontrollable/turbulent global system AND advance your quality of life?
>
> One thing is increasingly clear: hollow nation-states aren't the answer…
>
> Here's an option: DIY your solution. Roll your own tribe or community. Build it from the ground up to be resilient, decentralized, fair, and meritocratic. If you are so inclined, cut the rules into software so you can be both local and global at the same time. Change those rules by popular consent when the environment changes (and it will, often). Attract members to your new tribe. If it becomes unfair, leave it

[22] Chris Arkenberg, "Robb Interview: Open Source Warfare and Resilience," *BoingBoing*, June 15, 2010 <>.
[23] John Robb, *Brave New War*, p. 172.

> and roll another one. Compete for members. Use this bootstrapped system to negotiate and connect with the global economic system on equal terms, rather than as supplicants.[24]

David de Ugarte left comments under both posts, and Robb expressed interest in *Phyles* in the second exchange. Shortly thereafter, Robb put increasing stress on the inadequacy of isolated efforts at building Resilient Communities, and the consequent need for networked organization as a base of support.

> Resilient communities will:
>
> Shield us from increasingly frequent shocks and breakdowns of an out of control global system.
>
> Protect us from predatory and parasitical non-state actors—from globe spanning banks/corporations to local/transnational militias/gangs.
>
> Provide us with a path that will allow us to thrive—economically, socially, individually, and spiritually.
>
> Unfortunately, nobody is going to help us build them.
>
> The nation-state can't and won't. It is losing power across the board as the global system strengthens. Organizationally, the nation-state has lost control of its finances, borders, media, economics, use of force, etc. Worse, moral and ideological moorings that served the nation-state well for hundreds of years have rotted away. The nation-state is now adrift, unable to orient its decision making cycles.
>
> As a result, the nation-state has been largely co-opted by increasingly powerful non-state entities—from parasitical banks that sit astride core functions of the global system… to transnational gangs that puncture borders with drugs and other smuggled goods—and that corruption is spreading…
>
> So, what can we do? Attempts to bootstrap resilient communities are definitely possible. However, isolated and small, I fear these efforts will either result in a reduction in the quality of life for its participants or quickly fall prey to parasites/predators (as in, you won't get far if bankruptcy, privatization, and gangs-disorder guts your community).
>
> The dominant solution to all of these pitfalls, dangers, and threats is to team up. Create a virtual tribe that helps communities become resilient—by financing, protecting, and accelerating them. While it's possible to build a virtual tribe via a completely ad hoc process, the best way to build platforms in software that make the growth of tribal networks fast and easy. If we can build these software platforms, we can turn the transition to resilient communities from a process prone to high rates of failure, into a process that spreads virally and generates immediate improvements for its participants. A vibrant future awaits, all we need to do is build it.[25]

[24] Robb, "A 'Darknet'," *Global Guerrillas*, December 17, 2009 <globalguerrillas.typepad.com/globalguerrillas/2009/12/a-darknet.html>.

[25] Robb, "Central Question of 21st Century Governance," *Global Guerrillas*, January 4, 2010 <globalguerrillas.typepad.com>. Interestingly, de Ugarte—in "Phyles"—cited Robb's post as a major source on phyles.

What emerged from Robb's rumination on network organization, later in the year, was the concept of "complete economies and social structures delivered as software service"—or "Economies as a Software Service."

> These software based economies and social structures could allow:
>
> A plethora of new economic systems within which you can make a living (all you need to do is opt-in to the one that makes sense to you). The ability to build and experiment with new rules that both fix the increasingly dire problems with the current dominant economic system while providing new capabilities and avenues for success (new currencies, new incentive structures, new forms of status, etc.).
>
> Rapid rates of innovation/improvement. Since the rules of these systems are software based, they can evolve very quickly. Further, some of these new structures have the potential to generate rates of improvement/innovation/wealth creation at rates an order of magnitude greater than the current system.
>
> Nearly costless scalability. The infrastructure of these systems scales at a nearly costless level and the platforms envisioned can support a huge amount ecosystem diversity without much strain.[26]

In an added comment under that post, Robb explained how such networked economies could enforce their rules entirely by endogenous means, even if the state was unwilling to enforce members' contractual obligations to obey by-laws.

> If N-1 strategies (theft, cheating, fraud, etc.) only yield small amounts and continued association is very beneficial, the sanctions used to ensure people don't act badly are variations of expulsion. With opt-in systems, as opposed to geographically based systems, there's no requirement for membership by accident (and no need for coercion to join).

Later elaborating on the same concept under a slightly different name (Economies as a Service), Robb explained that his Resilient Communities would "often be the local instantiation of the values/rules" of the Economy as a Service.[27] As in Stephenson's phyles, local city-states or enclaves may be affiliated with one another through deterritorialized, virtual networked societies.

One of the complications of building networked economy platforms in the period of the state's decline is that the state will attempt, at least sporadically and haphazardly, to suppress such efforts. So a networked platform will confront the simultaneous problems of providing internal sanctions against fraud and misfeasance by its members, and evading state surveillance. The *Freedom Engineering* blog posted a detailed article on how to police an internal marketplace while maintaining secrecy:

> What people want to know about a stranger before they engage in a volitional exchange of value is … (1) how many volitional exchanges of value this stranger has

[26] Robb, "Why a Resilient Community Network?" *Global Guerrillas*, January 12, 2010 <boingboing.net>.

[27] Robb, "Completely New Economies as a Software Service," *Global Guerrillas*, November 4, 2010 <globalguerrillas.typepad.com.html>. <globalguerrillas.typepad.com>.

> completed before and (2) were some of these exchanges carried out with someone that they already know and trust?
>
> Now let's say that Sue runs a hairdressing shop out of her house. She has a limited clientele but she wants to expand. But recently Sue has read in the news about the crack down on 'illegal home based black-market businesses' such as hers. How does Sue continue to make an honest living in this hostile environment? How does Sue accept a stranger as a new customer with absolute confidence that this stranger is not a snitch and is not a local code enforcer?…
>
> The most valuable data on ebay.com for instance when looking at a person's profile is the numbers of transactions that they have conducted.
>
> A graphical interface of this profile would show your node on the network connected to other nodes by different colors of beams to indicate the different bonds. Although the beta version of this website will show a simple table showing this information.
>
> Users of this service would be able to see if they are connected to a stranger by others in the network—so if Sue and Jake have no connection yet—but they have both done trades with Billy and they both trust Billy—then they may just decide to make a connection and engage in a mutual exchange of value with each other.
>
> Now how does the network get populated? Let's say that Sue cuts Jake's hair and she does a fabulous job…
>
> All that Jake has to do is click on Sue's profile and check any of 4 boxes;
>
> 1. Have you had internet interactions with Sue?
> 2. Have you had real life interactions with Sue?
> 3. Have you conducted 1 to 3 free-market transactions with Sue?
> 4. Have you conducted 4 or more free-market transactions with Sue?
>
> And that is all the feedback that one needs to do!…
>
> But what if after a few transactions between two individuals that a problem arises?
>
> This is where the arbitration service providers come in. Note; this site will not provide arbitration services—it will just link to them—perhaps an affiliation program with an arbitration service will provide some revenue.
>
> Also at any moment a user can chose to break a value flow connection with another user. In the graphical user interface this may look like a red X across the bond.[28]

Robb is optimistic about the rate of adoption of networked platforms in the transition period. Based on a survey of the rates of adoption of new technologies over the past century, he notes that "the lag between discovery and deployment is dropping over time, [and] the rate of adoption has accelerated over time."

> Now that nearly everyone has a computer (either on a desk or in a smart phone), the rate of adoption for new tedch has dropped from years to quarters. There's almost

[28] Robb, "EaaS (Economy as a Service)," *Global Guerrillas*, November 11, 2010 <globalguerrillas.typepad.com>.

> no lag between development and deployment, and applications that represent major innovations can roll out to globally significant levels in months.
>
> … Given how fast things move now, it's not hard to imagine that a new economic system (better design)… or P2P manufacturing system could sweep the world in months, drawing in tens of millions of people into a ways of creating, trading, and sharing wealth. In short, new digital systems that make the transition to local production within networked resilient communities easier and faster since they can help generate the wealth required to do it without starving/freezing and the vision of the future that motivates people to persist despite setbacks.[29]

VII. Filé Aesir

Filé Aesir is a phyle consciously patterned on the Las Indias model. It was formulated as an explicit project in late 2012, although it had gestated in the experience of activists and businesspeople over the previous decade and "above all from the combination of affinity bonds formed in the breast of 15M… "[30] Among other things, it's an incubator for p2p enterprises, with the goal of building

> an economic structure that allows us to thrive and prosper in our environment, obtaining tools and knowledge to fulfill ourselves professionally and personally… We generate a semi-shared economy to provide us security, opportunities for growth and, to some extent, a place in the world.

VIII. Venture Communes

Dmytri Kleiner, the founder of the Venture Communist project, saw it as a support platform much like phyles, but one in which the land and capital used by individual worker-managed cooperatives was communally owned by everyone in the larger community.

> I wanted to create something like a protocol for the formation and allocation of physical goods, the same way we have TCP/IP and so forth, as a way to allocate immaterial goods. The Internet gives us a very efficient platform on which we can share and distribute and collectively create immaterial wealth, and become independent producers based on this collective commons.
>
> Venture communism seeks to tackle the issue of how we can do the same thing with material wealth. I drew on lots of sources in the creation of this model, not exclusively anarchist-communist sources. One was the Georgist idea of using rent, economic rent, as a fundamental mutualizing source of wealth. Mutualizing unearned income is essentially what that means in layman's terms…
>
> Even within the cooperative movement, which I've always admired and held up as an example, it's clear that the distribution of productive assets is also unequal. The

[29] "value flow connections," *Freedom Engineering*, December 15, 2011 <freedomengineering.org>.

[30] John Robb, "The Digital Roll-Out of Resilient Communities," *Global Guerrillas*, December 22, 2011 <globalguerrillas.typepad.com.

> same with other kinds of production; for example, if you look at the social power of IT workers versus agricultural workers, it becomes very clear that the social power of a collective of IT workers is much stronger than the social power of a collective agricultural workers. There is inequality in human and capital available for these cooperatives. This protocol would seek to normalize that, but in a way that doesn't require administration…
>
> So, how do we create cooperation among cooperatives, and distribution of wealth among cooperatives…? This is why I borrowed from the work of Henry George and Silvio Gesell in created this idea of rent sharing.
>
> The idea is that the cooperatives are still very much independent just as cooperatives are now. The producers are independent, but instead of owning their productive assets themselves, each member of the cooperative owns these together with each member of every other cooperative in the Federation, and the cooperatives rent the property from the commune collectively…
>
> So, the unearned income, the portion of income derived from ownership of productive assets is evenly distributed among all the cooperatives and all the stakeholders among those cooperatives, and that's the basic protocol of venture communism.

In response to a question from Michel Bauwens in the same interview, Kleiner affirmed that the sharing of rent by all members of the commune functioned as a sort of basic income.

> Whatever productive assets you consume, you pay rent for, and that rent is divided equally among all members of the commune. Not the individual cooperatives, but the commune itself. This means that if you use your exact per capita share of property, no more no less than what you pay in rent and what you received in social dividend, will be equal. So if you are a regular person, then you are kind of moving evenly, right? But if you're not working at that time, because you're old, or otherwise unemployed, then obviously the the productive assets that you will be using will be much less than the mean and the median, so what you'll receive as dividend will be much more than what you pay in rent, essentially providing a basic income. And conversely, if you're a super motivated producer, and you're greatly expanding your productive capacity, then what you pay for productive assets will be much higher than what you get in dividend, presumably, because you're also earning income from the application of that property to production. So, venture communism doesn't seek to control the product of the cooperatives. The product of the cooperatives is fully theirs to dispose of as they like. It doesn't seek to limit, control, or even tell them how they should distribute it, or under what means; what they produce is entirely theirs, it's only the collective management of the commons of productive assets.[31]

The mechanics are spelled out in greater detail in *The Telekommunist Manifesto*.[32] A venture commune "is not bound to one physical location where it can be isolated and confined. Similar

[31] Fundamento de la filé Aesir Versión 0.6: Fundamento para una incipiente comunidad, basado en el Fundamento 1.0 de la filé Indiana <fileaesir.com> (this quote is based on a really crappy Google Translate translation).

[32] "Towards a Material Commons," *Guerrilla Translation!*, January 28, 2014 <guerrillatranslation.com>.

in topology to a peer-to-peer network, Telekommunisten intends to be decentralized, with only minimal coordination required amongst its international community of producer-owners."[33] This is possible because of revolutions in transportation and "international integration," which "have created distributed communities who maintain ongoing interpersonal and often informal economic relationships across national borders."

> … Developments in telecommunications, notably the emergence of peer networks such as the internet, along with international transportation and migration, create broad revolutionary possibilities as dispersed communities become able to interact instantly on a global scale.[34]

Just as copyleft and other free information licenses turned copyright against itself, the venture commune uses the corporate form as a vehicle for asserting control over productive assets. The commune is legally a firm—but with "distinct properties that transform it into an effective vehicle for revolutionary workers' struggle.

> The venture commune holds ownership of all productive assets that make up the common stock employed by a diverse and geographically distributed networked of collective and independent peer producers. The venture commune does not coordinate production; a community of peer producers produce according to their own needs and desires. The role of the commune is only to manage the common stock, making property, such as the housing and tools they require, available to the peer producers.
>
> The venture commune is the federation of workers' collectives and individual workers, and is itself owned by each of them, with each member having only one share. In the case that workers are working in a collective or co-operative, ownership is held individually, by the separate people that make up the collective or cooperative… Property is always held in common by all the members of the commune, with the venture commune equally owned by all its members…
>
> The function of the venture commune is to acquire material assets that members need for living and working, such as equipment and tools, and allocate them to its members… The members interested in having this property offer a rental agreement to the commune, giving the terms they wish to have for possession of this property. The commune issues a series of bonds to raise the funds required to acquire the property, when then becomes collateral for the bondholders. The rental agreement is offered as a guarantee that the funds will be available to redeem the bonds.[35]

The model of land-value tax financing, inspired by Henry George, is supplemented by something like the Basic Income. Rents over and above the amount required to service the bonds are paid out as a dividend to all members equally.[36]

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[33] Dmytri Kleiner, *The Telekommunist Manifesto. Network Notebook Series* (Amsterdam: Institute of Network Cultures, 2010) <media.telekommunisten.net>.

[34] *Ibid*., p. 5.

[35] *Ibid*., p. 11.

[36] *Ibid*., pp. 23–24.

IX. Medieval Guilds as Predecessors of the Phyle

Among the services which the guilds performed for their members—who named each other as "brothers and sisters" under the terms of their charters—were relief of the destitute, paying the compensation for members convicted of a crime to prevent the financial ruin of them and their families, and arbitration of disputes between practitioners of a craft.[37] The town communes frequently acted as bulk buyers of commodities like grain and salt, using their bargaining power to negotiate prices near cost from the foreign merchants and then distribute them among the households.[38] The guilds, likewise, bought raw materials in bulk for their members, and marketed their products.[39] They acted as quality certifying bodies on behalf of the members, assuming responsibility for the quality of goods marketed and seeking to prevent the sale of adulterated or defective goods for the sake of the membership's reputations.[40] "The craft guild was then a common seller of its produce and a common buyer of the raw materials," a fact which helped account for the high status and historically high standard of living of manual labor at the apex of the High Middle Ages.[41]

X. Transition Towns and Global Villages

Transition Towns. In 2006 Rob Hopkins, recently arrived from Ireland, cofounded the first Transition Town initiative in the small English town of Totnes with some friends. As of 2012 the movement had grown to 500 "official" Transition Town initiatives in more than 38 countries, with several thousand more in the works.

Global Villages. As Franz Nahrada explains Global Villages (in the context of a GIVE initiative to fund expansion of the project:

> (1) Global Villegiatura—Trans Market Economies
>
> … Rather than the further growth of already unliveable cities, we foresee the emergence of more and more inside-looking communities, who—with the help of decentralizing technologies—build their own self-sustaining microcosms. They seek to combine the best and most apposite buildings blocks available in the shared knowledge and experiences of humanity across the continents and ages. This turns into new experience for others…. Within the virtual presence of the whole world and their cascading "paying forward" support, each place can overcome many of its limitations by climate, geography and historical factors. Global cultures offer an incredible array of choices for different development models, allowing people to develop collective individualities. It is in the best interest of all to make this a universal and inclusive development pathway. By filling needs of others, we enhance their capacities to contribute.
>
> … We even work with large towns and large institutions to fractalize within and also acknowledge the opportunity for "mothercities" and "hubs" to thrive on the

[37] *Ibid*., p. 24.
[38] Kropotkin, *Mutual Aid*, pp. 172–173.
[39] *Ibid*., pp. 183–184.
[40] *Ibid*., p. 185.
[41] *Ibid*., pp. 192–193.

support requirements for the Global Villegiatura. Like the personal computer grew individual capacities, the next stage of the prosumer revolution lies in delivering tools and services to improve community capacities."… (2) Global Village Learning Centers and Maker Spaces

… On one side we study local education and resource centers with tools and content to join forces globally improving their local scope. On the other side these centers are also centers of community innovation, of meaningful encounters for locals and guests…

GIVE is therefore studying the many ways to boost the potential of local learning institutions, teach people to become entrepreneurial and cooperative, reclaim the skills that their grandfathers and grandmothers still had—and combine this with the latest in automation and production technologies. We study urban and rural models of different scope and specialisation. We even study historical examples of study and realisation like monasteries and see what might be retrieved and reactualized from these forms of learning spaces. (3) High Tech Ecologies and Upcycling Economies

… GIVE is very interested in cradle to cradle schemes, renewable resources and the possibility to create technologies that use non-toxic materials… We see natures cycles and nodes as a model for high technology, and we embrace the embedding of natural principles by sophisticated and complex human artefacts.

We distinguish Global Villages from the broader movement of Ecovillages by the simple notion that we might need more, not less technology to enable humans to fully cooperate with nature. GIVE aims at jointly with others creating innovation centers for advanced village technologies to be used appropriated to local cirumstances. (4) Virtual University of the Villages and Open Source Culture

The networking of learning villages will eventually create wealth and growth superior to what the industrial age has delivered by the sheer multiplication and miniaturisation of productive capacities. In our view, it cannot be built on so-called intellectual property, but by a culture of sharing and joining pieces and bits of disrupted knowledge to integrated and holistic "pattern poems". Therefore our next research goal is to find out about effective knowledge cooperation.

… We advocate shared tasks and division of specialised practise, when it comes to improvements and experiments. Villages can be theme villages and share their findings with others. Thus a virtual university of the villages will emerge, a shared learning platform that connects local learning places and will be their lifeblood. (5) Community Observatory and Networking

The arrival of a new societal pattern never happens simultaneously; we see "islands of progress" where—mostly as a result of visionary individuals—social life starts to take a different direction. Today, we see the advent of Global Villages by many different types of local developments like Ecovillages, Cohousing, Coworking, Intergenerational Villages, Theme Villages, we see dedicated networks like Transition Towns and others emerging.

> GIVE aims to build up a reference system of existing and planned projects, be it local or thematic, or at least have a good understanding of the best references available. We started a global community back in 1997 called the "Global Villages Network" that we want to become increasingly active in connecting good practises, developing strategic initiatives and publically advocating Global Villages ideas…[42]

Much like Ebenezer Howard's Garden Cities movement, Global Villages capitalize on the potential for decentralized technology to build local economies on cheap land far from existing population centers.

XI. Hub Culture

Hub Culture—"a network with primary bases in the world's big urban hubs, including London, New York and San Francisco, Geneva, Bermuda, Singapore and Hong Kong," which has representatives in '"over 130 major cities around the world" and maintains Pavilions (see below) "in Beijing, Cancun, Cannes, Copenhagen, Croatia, Davos, Durban, Ho Chi Minh City, Ibiza, London, Los Angeles, Miami, New York, Rio de Janeiro, Sacramento, São Paulo, St. Moritz and Venice"—is a useful illustration of the phyle model. According to the Hub Culture wiki:

> Hub Culture is a global collaboration network founded in 2002. Over 25,000 global urban influentials are connected, giving the network far reaching ability to build worth through leveraged collaboration.
>
> Hub Culture operates around three functions—Pavilions (places to collaborate), Knowledge Brokerage (consulting and deal services) and Ven, a global digital currency. Ven is the first private currency to move into the financial markets and is priced from a mix of commodities and currencies…
>
> Hub Culture uses collaboration technology to drive high value deals. Tools include Groups with file sharing and wikis, and Knowledge Brokerage for rapid dealmaking. These tools support the Hub Culture Pavilions, real, low-carbon places designed for meetings and connections…
>
> Membership to the HubCulture.com Network is free by invitation. Membership upgrades are available to use the Pavilions and some areas of the website, and these costs can be 'earned' by members who contribute knowledge to others. Hub is a positive, value creating feedback loop. Content is highly curated and often member generated…
>
> It all began in 2002 with the publication of the book *Hub Culture: The Next Wave of Urban Consumers*, one of the first explorations of globalized social communities. HubCulture.com was founded at this time to provide a meeting place for the global urban influentials described in the book. Over time, we began to produce functions (such as round table dinners, events and charitable fundraisers), to connect those who wanted to meet like-minded others…

[42] *Ibid*., p. 191.

> The website became a leading reference point for the uniquely globalized zeitgeist that defines Hub Culture, with curated content and sharp coverage of the global scene.
>
> In 2005 Hub Culture Events grew into Pavilions, longer term projects in key places. The number of activities grew into a series of regular projects and events reaching thousands of members. The first Pop Pavilion appeared in January 2005 on the beaches of Rio de Janeiro, with others following in Miami and St. Moritz.
>
> In 2007 Hub Culture expanded its social network to include knowledge brokerage, future trend analysis and consulting services for a selection of blue-chip clients. In January 2007 the company released its first Zeitgeist Ranking, calling the scene in the world's leading urban centers. That summer the company released Ven, first available in Facebook. Today Ven is priced in real time against the markets, with a combination of currencies, commodities and carbon futures making up the value of Ven. Millions of units are in circulation as the world's first knowledge currency, perfect for micropayments, favours and valuing knowledge.
>
> Hub Culture helps members build worth. The website offers an easy suite of tools to enhance collaboration, and content is created with the help of knowledge-rich experts in a variety of fields who publish for themselves and the network…[43]

XII. Networked Labor Organizations and Guilds as Examples of Phyles

A number of labor organizers, advocates and historians have advocated a return to the guild model of the labor union in situations where membership through a workplace-based local is impractical: freelance workers, professionals and tradesmen in occupations with project- or task-based employment rather than jobs with a single employer, and members of the so-called "precariat." Hoyt Wheeler described it as "a step back toward a preindustrial concept of unions as fraternal and benefit organizations.[44]

The line between labor unions in the nineteenth century, and the kinds of friendly societies and mutuals described by writers like E.P. Thompson and Pyotr Kropotkin, is so blurry as to be almost nonexistent. And when friendly societies offered relief to unemployed members, the practical difference from a strike fund could be hard to discern. It certainly was from the standpoint of the state, which was hostile to mutuals in many countries for just this reason. The very distinction between the trade unions and other friendly or benefit societies is an artificial one, argues Bob James.

> … [I]t makes much more historical sense to see the core of Labour History as a range of benefit societies, and to see what are called "trade unions" as just one culturally-determined response within a group and along a time-line…

[43] Michel Bauwens, "Movement of the Day: GIVE for Globally Integrated Village Environments," *P2P Foundation Blog*, April 9, 2013 <blog.p2pfoundation.net>.

[44] "About Us," *HubCulture.com* (captured February 7, 2013) <hubculture.com>.

> What we now call "trade unions" were and are benefit societies, just like the Grand United Oddfellow and Freemason Lodges… Concern about working conditions and the strategy of withdrawing labour, "going on strike", developed naturally out of the lodge habit of insuring against all sorts of other future dangers. Strike pay was just another benefit covered by contributions…[45]

In the United States, labor unions often—most notably the railroad unions— started out as benevolent associations providing for the families of deceased or incapacitated memb[46]More generally, Sam Dolgoff observed:

> The labor movement grew naturally into a vast interwoven network of local communities throughout the country, exercising a growing influence in their respective areas…
>
> They created a network of cooperative institutions of all kinds: schools, summer camps for children and adults, homes for the aged, health and cultural centers, insurance plans, technical education, housing, credit associations, et cetera. All these, and many other essential services were provided by the people themselves, long before the government monopolized social services wasting untold billions on a top-heavy bureaucratic parasitical apparatus; long before the labor movement was corrupted by "business" unionism.[47]

Charles Johnson stresses the importance, from the standpoint of worker independence and bargaining strength, of such self-organized mutual aid:

> It's likely also that networks of voluntary aid organizations would be *strategically* important to individual flourishing in a free society, in which there would be no expropriative welfare bureaucracy for people living with poverty or precarity to fall back on. Projects reviving the bottom-up, solidaritarian spirit of the independent unions and mutual aid societies that flourished in the late 19th and early 20th centuries, before the rise of the welfare bureaucracy, may be essential for a flourishing free society, and one of the primary means by which workers could take control of their own lives, without depending on either bosses or bureaucrats.[48]

One possibility is the resurrection of the guild as a basis for organizing mutual aid. Some writers on labor issues have argued that unions should shift their focus to attracting memberships on an individual basis, whether it be in bargaining units with no certified union or among the unemployed; they would do so by offering insurance and other services.

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[45] Hoyt Wheeler, *The Future of the American Labor Movement* (Cambridge University Press, 2002), p. 77.

[46] Bob James, "The Tragedy of Labour History in Australia." According to Takver's *Radical Tradition: An Australian History Page*, where the article is hosted, the text is based on James' notes for a lecture given in several different venues. <www.takver.com>.

[47] Lens, *The Labor Wars*, p. 45.

[48] Sam Dolgoff, "Revolutionary Tendencies in American Labor—Part 1," in *The American Labor Movement: A New Beginning*. Originally published in 1980 in *Resurgence* <www.iww.org>.

A good example is the Healthy Workers medical plan, organized by Working Partnerships USA and the Santa Clara Valley Health and Hospital System, which provides health insurance with no deductible at half the price of competing commercial plans.[49]

Somewhat more outside the mainstream is Guy Standing's example of sex workers in Vancouver, BC, who

> set up social protection funds, for emergencies and for scholarships for children of dead or sick workers; they developed a group medical plan, drew up occupational safety guidelines, provided an information service for potential entrants to the profession, and developed courses to teach 'life skills'.[50]

Thomas Malone discusses such possibilities at considerable length in *The Future of Work*, in exploring the implications of a free-agency economy of independent contractors.

> Rather than relying on employers and governments to provide the benefits traditionally associated with a job, a new set of organizations might emerge to provide stable "homes" for mobile workers and to look after their needs as they move from job to job and project to project.
>
> These organizations might be called societies, associations, fraternities, or clubs. But the word I like best is *guilds*, a term that conjures up images of the craft associations of the Middle Ages. Growing out of tradesmen's fraternities and mutual assistance clubs, medieval guilds served a number of functions. They trained apprentices and helped them find work… They offered loans and schooling. And if misfortune struck, they provided an income for members' families…
>
> Existing organizations already perform some of these functions today. Take the Screen Actors Guild. As much as 30 percent of the base pay of Screen Actors Guild members goes to the guild's benefits fund. In return, members get full health benefits (even in years when they have no work), generous pensions, and professional development programs.
>
> Imagine an extended version of this arrangement, in which members pay a fraction of their income to a guild in good times in return for a guaranteed minimum income in bad times…
>
> Companies have also traditionally helped their employees learn skills and, by assigning job titles and other kinds of credentials, signify to the world the capabilities of their workers. These kinds of services could also be provided by guilds. Lawyers and doctors, for instance, have professional societies that establish and monitor the credentials of practitioners and provide continuing educational opportunities. Unions have also had similar functions for years, helping craft workers progress from apprentice to journeyman to master craftsman.[51]

[49] Charles Johnson, "Liberty, Equality, Solidarity: Toward a Dialectical Anarchism," in Roderick T. Long and Tibor R. Machan, eds., *Anarchism/Minarchism: Is a Government Part of a Free Country?* (Hampshire, UK, and Burlington, Vt.: Ashgate Publishing Limited, 2008). Quoted from textfile provided by author.

[50] "WPUSA launches Healthy Workers medical plan" (March 5, 2010), *Recent Win Archive* <www.wpusa.org>

[51] Guy Standing, *Work After Globalization: Building Occupational Citizenship* (Cheltenham, UK; Northampton, Mass.: Edward Elgar, 2009), p. 315.

Malone sees the modern-day guilds arising from professional societies, labor unions, temp agencies, and alumni associations, among other existing organizations.[52]

Such organizations, operating as cooperative temp agencies, might also resurrect the old hiring hall model of unionism. Hoyt Wheeler writes:

> A further advantage of the craft form of organization is its ability to provide a stream of trained, competent workers to employers. In the building trades, and in some other fields as well, individual employers have no incentive to train workers who may soon move on to work for someone else. The long-term interests of employers as a group require a trained workforce. Yet the interests of individual employers militate against this coming about. A good solution to this dilemma is a union of workers who train one another and spread the costs of training across the industry. The United Brotherhood of Carpenters and Joiners… recognizes this rationale, and is utilizing it in an attempt to encourage employers to move away from their traditional aversion to the union.[53]

Bill Luddy, onetime Administrative Assistant to the President of UBCJ, argued that the construction industry was suffering from a critical shortage of skilled trades workers. The contractors, "having weakened the unions, are finding that they have no good alternative source of labor." Nonunion contractor associations have tried to overcome the prisoner's dilemma problem caused by training costs in a fluid labor market, creating common training funds, but couldn't get enough contractors to participate. Union training, Luddy said, was the only practical solution.[54]

The kinds of income- and risk-pooling functions that Malone proposes for guilds are likely to take on growing importance in a time of increasing unemployment and underemployment.

In addition, networked unions might serve as platforms for member enterprises, offering such services as insurance, crowdsourced finance, payroll software, legal services, and cooperative purchasing and marketing.

There are venerable precedents for this. According to E. P. Thompson, for example, "there are… a number of instances of pre-Owenite trade unions when on strike, employing their own members and marketing the product."[55] This became even more true, G.D.H. Cole adds, as Owenism spread in the trade unions and "workers belonging to a particular craft began to set up Co-operative Societies of a different type—societies of producers which offered their products for sale through the Co-operative Stores. Individual Craftsmen, who were Socialists, or who saw a way of escape from the exactions of the middlemen, also brought their products to the stores to sell."[56]

The first major wave of worker cooperatives in the United States, according to John Curl, was under the auspices of the National Trades' Union in the 1830s.[57] Like the Owenite trade union cooperatives in Britain, they were mostly undertaken in craft employments for which the basic

[52] Thomas W. Malone, *The Future of Work: How the New Order of Business Will Shape Your Organization, Your Management Style, and Your Life* (Boston: Harvard Business School Press, 2004), pp. 84–87.

[53] *Ibid*., pp. 87–88.

[54] Wheeler, *The Future of the American Labor Movement*, p. 50.

[55] *Ibid*., pp. 80–81.

[56] Thompson, *Making of the English Working Class*, p. 790.

[57] G.D.H. Cole. *A Short History of the British Working Class Movement (1789–1947)* (London: George Allen & Unwin, 1948), p. 76.

tools of the trade were relatively inexpensive. From the beginning, worker cooperatives were a frequent resort of striking workers.[58]

This was a common pattern in early labor history, and the organization of cooperatives moved from being purely a strike tactic to providing an alternative to wage labor.[59] It was feasible because most forms of production were done by groups of artisan laborers using hand tools. By the 1840s, the rise of factory production with expensive machinery had largely put an end to this possibility. As the prerequisites of production became increasingly unaffordable, the majority of the population was relegated to wage labor with machinery owned by someone else.[60]

Most attempts at worker-organized manufacturing, after the rise of the factory system, failed on account of the capital outlays required. The Knights of Labor, in the 1880s, undertook a large-scale effort at organizing worker cooperatives. Their fate is an illustration of the central role of capital outlay requirements in determining the feasibility of self-employment and cooperative employment. The K. of L. cooperatives were on shaky ground in the best of times. Many of them were founded during strikes, started with "little capital and obsolescent machinery," and lacked the capital to invest in modern machinery. Subjected to economic warfare by organized capital, the network of cooperatives disintegrated during the postHaymarket repression.[61]

The defeat of the Knights of Labor cooperatives, resulting from the high capitalization requirements for production, is a useful contrast not only to the artisan production of earlier worker co-ops, but to the potential for small-scale production today. The economy today is experiencing a revolution as profound as the corporate transformation of the late 19th century, but in the opposite direction. This time around the original shift which brought about large-scale factory production and the wage system—the shift from individually affordable artisan tools to expensive machinery that only the rich could afford to buy and hire others to work—is being reversed. We are experiencing a shift from expensive specialized machinery back to inexpensive, general-purpose artisan tools. And the monopolies on which corporate rule depends, like so-called "intellectual property" law, are becoming less and less enforceable. Another revolution, based on P2P and micromanufacturing, is sweeping society on the same scale as did the corporate revolution of 150 years ago. But the large corporations today are in the same position that the Grange and Knights of Labor were in the Great Upheaval back then: fighting a desperate, futile rearguard action, and doomed to be swept under by the tidal wave of history.

The worker cooperatives organized in the era of artisan labor paralleled, in many ways, the forms of work organization that are arising today. Networked organization, crowdsourced credit and the implosion of capital outlays required for physical production, taken together, are recreating the same conditions that made artisan cooperatives feasible in the days before the factory system.

In the artisan manufactories that prevailed into the early 19th century, most of the physical capital required for production was owned by the work force; artisan laborers could walk out and essentially take the firm with them in all but name. Likewise, today, the collapse of capital outlay requirements for production has created a situation in which human capital is the source of most book value for many firms; consequently, workers are able to walk out with their human

[58] John Curl, *For All the People: Uncovering the Hidden History of Cooperation, Cooperative Movements, and Communalism in America* (Oakland, CA: PM Press, 2009), p. 4

[59] *Ibid*., p. 33.

[60] *Ibid*., p. 34.

[61] *Ibid*., pp. 35, 47.

capital and form "breakaway firms," leaving their former employers as little more than hollow shells.

XIII. Virtual States as Phyles: Hamas, Etc.

John Robb argues that virtual states like Hamas sometimes outcompete hollowed-out conventional states in providing services to subject populations.

> Many terrorist networks have developed complex and sophisticated systems that provide important social services to their supporters.
>
> These terrorist social networks thrive in the vacuum created by a failed state. A good example of this is Hamas… Since its founding in 1987, Hamas has proven to be a well run counterweight to Yassar Arafat's corrupt Palestinian National Authority… Hamas runs the following services… :
>
> 1. An extensive education network
> 2. Distribution of food to the poor
> 3. Youth camps and sports
> 4. Elderly care
> 5. Funding of scholarships and business development
> 6. Religious services
> 7. Public safety
> 8. Health care…
>
> The rise of terrorist social services indicates that the loose networks that power terrorist military organizations can also replicate the social responsibilities of nation-states. As a challenger to the nation-state system, this capability speaks volumes.
>
> This leads me to think that there is a generalized ("business") model that can be derived for fully developed terrorist organizations operating in failed states.[62]
>
> May's dispute between the Lebanese government and Hezbollah is an interesting example of the contest between hollow states and virtual states over legitimacy and sovereignty. As in most conflicts between gutted nation-states and aggressive virtual states, Hezbollah's organic legitimacy trumped the state's in the contest (an interesting contrast between voluntary affiliation and default affiliation by geography). The fighting was over in six hours.[63]

[62] *Ibid*., p. 107.

[63] John Robb, "THE TERRORIST SOCIAL NETWORK," *Global Guerrillas*, April 7, 2004 <globalguerrillas.typepad.com>.

XIV. Eugene Holland: Nomad Citizenship

Eugene Holland proposes "nomad citizenship" as a way of deterritorializing citizenship and organizing citizenship functions outside the state.

> But the point of combining nomadism with citizenship in this way is to smash the State's territorializing monopoly on belonging and redistribute it globally, in alternative or minor forms of sociality both within and beyond the boundaries of the State…
>
> A question inevitably arises, however: why keep the term *citizenship* at all, if the point is to radically detach it from the nation-State? For one thing, citizenship defined in relation to the nation-State is, in historical terms, a fairly recent and specific version of a much broader phenomenon, often involving cities or municipalities instead of states.[64]

The most urgent reason to retain the term "citizenship," Holland argues, "is to break the State's despotic command over social belonging."[65]

Besides deterritorialization, Holland's nomad citizenship—like the phyle—is associated with networks and virtual community.

> Can virtual communities and anonymous trading networks institute forms of distributed decision making and collective intelligence, establishing and occupying a new erth on the self-organizing plane of a world market free from capitalism's infinite debt?[66]

Holland's nomad citizenship—again, like the phyle—is an organizational framework for supporting economic secession from neoliberal capitalism. Hence it is paired with two other concepts: "free market communism" and "the slowmotion general strike." Holland, referring to Walter Benjamin's analysis of the general strike, treats it as a means of seceding from the system rather than changing it.

> Most forms of rebellion… repeat the alegitimate violence accompanying the founding of any new social order in their attempt to overthrow the old. Most strikes, meanwhile, are also violent… , inasmuch as they seek to extort benefits from and within the existing social order. The general strike is exceptional for Benjamin: it is not violent because it is not an act; it is a nonact, a refusal to act (and a refusal to extort), a withdrawal of labor; it is a concerted disengagement from, rather a violent counterengagement against, the old social order… However, for the general strike to point to some kind of strategy rather than remain just an eternal ideal or a short-lived symbolic gesture, there would have to be some way to *sustain* such a strike. This is one index of the importance of identifying and exploring viable and actually existing alternatives to the capitalist domination of the market economy…[67]

[64] John Robb, "HOLLOW STATES: LEBANON," *Global Guerrillas*, May 17, 2008 <globalguerrillas.typepad.com>.
[65] Holland, *Nomad Citizenship*, xv-xvi.
[66] *Ibid*., xviii-xix.
[67] *Ibid*., p. 29.

In the nomad citizenship model, the form of networked organization resembles David Graeber's anarchist concept of "horizontalism," as well as being reminiscent of Saint-Simon's "replacing the government of persons with the administration of things":

> Looking back from our present-day "information society," it is easy to see that much of [Mary Parker] Follett's importance and influence stems from her very early recommendation that "fact-control" would become far more crucial than "man-control," that the management of information would become at least as important as the management of people. The importance of information management is in turn related to what Follett called the principle of *depersonalization*. One instance of this principle we have already seen: important functions are no longer the permanent prerogative of an individual figure (such as a conductor or CEO) but instead circulate among members of the group. Even more important, authority in a given situation… does not reside in an individual or a position but in the situation itself: "One *person* should not give orders to another *person*," she insisted, "but both should agree to take their orders from the situation."… In a prescient formulation of what we now call bottom-up or emergent selforganization, she maintained that "legitimate authority flows from co-ordination, not co-ordination from authority."[68]

Holland also describes nomad citizenship as "deconstruct[ing] the boundaries that separate the State from civil society,"[69] in much the same way that Proudhon (in *General Idea of the Revolution in the XIX Century*) envisioned dissolving the state into the social body.

The "free-market communism" practiced by nomad citizens, networked in associations to participate in a non-capitalist world market, is characterized by microfinance/microcredit, currency as a means of exchange rather than a store of value, a regard for the common good of nomad citizens, distributed intelligence, and the replacement of capitalist ownership and wage labor with the cooperative organization of production.

> … immanently self-organizing work groups, also known in this context as production cooperatives… Only self-organizing—that is, self-managed and self-owned— production cooperatives put an end to both the exploitation and the alienation entailed in wage slavery as well as the subordination and alienation entailed in (even socialist) State citizenship.
>
> Free-market communism, then, forms a multiplicity of multiplicities…. The groups themselves self-organize immanently, of course, but they also provide an alternative means of self-provisioning outside the circuits of capitalist labor markets and retail markets. These groups are interconnected, then, by truly free—and, where possible, digitally enhanced—nomad markets: markets that are free from the imposed standards of labor value and the infinite debt and that provide distributed-intelligence collective decision-making procedures that arrive at… the Common Good horizontally or bottom up rather than top down… At the same time, free-market communism salvages the "general social knowledge" embedded in fixed capital, mobilizing it in

[68] *Ibid*., p. 63.
[69] *Ibid*., pp. 66–67.

> the pursuit of aggregated Common Good rather than for the sake of private capital accumulation.[70]

XV. Producism/Producia

Drew Little brought Producism to my attention under the name "Build a New Economy" project.

> Producism is an evolutionary economic model that has the goal to help everyone become an impactful social entrepreneur to eventually self-actualize. (*Theory*)
>
> Producia is a fun, barter-based marketplace by and for social entrepreneurs. It's a Marketplace, Social Network, and Startup Incubator all-in-one. (Practice)[71]

According to the Producia Presentation at Google Docs, Producia's goal is to "Foster the Evolution of a New Economy" by these means:

> Money becomes an accounting unit aka Barter Dollars Enterprise becomes a for-purpose company Education becomes Producer-focused Social Networking becomes driven by epic meaning[72]

The system is built on a digital barter system as its basic architecture. It also includes a large element of "gamification" for teaching new members how to participate in the economy.

There's also a slideshow, "Producia: Welcome to the New Economy."[73] It presents the New Economy, ultimately, as a way of achieving self-actualization in terms of Maslow's hierarchy of needs. In the existing economy, most of the money flows center on the financial system rather than production for use.

Likewise, "there's not enough money circulating in our economy to supply everyone's needs." It's the age-old problem of overaccumulation and underconsumption, in which money is redistributed upward from classes with a high propensity to consume to classes with a high propensity to save and invest. So you have a chronic glut of investment capital without a profitable outlet, a chronic crisis of excess production capacity, and expedients like FIRE Economy pyramid schemes to soak up the excess money. Meanwhile people with productive skills and consumption needs can't complete the circuit because there's "not enough money." The solution, Little says, is to turn money into "numbers measuring our time & energy instead of being a thing or a commodity."

The dominant form of enterprise operating on this platform is the Social Enterprise Cooperative, which is fostered by startup incubators. Social networks bring like-minded people together to form enterprises, with their actions coordinated through the Producia game. "Producia is a not-for-profit, fun, barter-based marketplace/social network/startup incubator all-in-one, that is by & for social entrepreneurs."

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[70] *Ibid*., p. 146.
[71] *Ibid*., p. 140.
[72] <www.producism.org> Accessed February 23, 2012 <>.
[73] "New Producia Presentation (Outline) <docs.google.com>.

XVI. Emergent Cities

Seb Pacquet's idea of "Emergent Cities" is another good example of a deterritorialized network acting as a support platform for participants:

> I think we're about to see the emergence of a new way of conducting innovation that operates quasi-independently of the current money system.
>
> In other words, where conventional thinking tells us that investing money in research and development is the way to get innovation, we're putting together a means of innovating whose chief requirements are things like time, imagination, knowledge, initiative and trust, with money moving from primary to secondary concern.
>
> What I see emerging is a set of tools and customs—cognitive infrastructure, when you think about it—that will give us the necessary scaffolding to grow a multitude of virtual "cities". These cities will bring together people with shared values and orientations towards the future, and who are in a position to collaborate to bring something new into the world. They are part and parcel of the burgeoning Relationship Economy.
>
> No current-day structure really corresponds to this kind of "city". Is it a school? Is it a business? Is it a bank? A venture capital fund? An economy? Is it a lab? An incubator? Is it a creative space? Is it a living space? A community? A network?
>
> It is all of those at the same time…
>
> Every emergent city is different from the others. Some are hidden and closed, some are visible and wide open, others are somewhere in the middle. When you scratch the surface, each is ultimately defined by some kind of organizing principle: its "social DNA"—a set of agreements, perhaps an ethic or even an aesthetic that you have to abide by to be a participant.
>
> Some of them even have reprogrammable DNA, which lets them adapt to changing circumstances.
>
> Although some emergent cities may be physical, most of them are virtual and not tied to a particular location. This lends them a very important property that physical cities don't have—you can easily inhabit several at the same time.
>
> Just like individual people, cities have reputations; emergent cities too. There's a fractality to it. There are roads, bridges between cities; they interact with one another. Currency/reputation in one might help get you somewhere in another.
>
> Some offer such a favorable environment for creatives that they act as 'strange attractors' for talent, driving a virtuous circle of growth and innovation.[74]

XVII. The Incubator Function

One function of the phyle that receives comparatively less attention—De Ugarte gives it more attention than anyone else—is the incubation function of a networked economic platform. The

[74] "Producia: Welcome to the New Economy by Drew Little on Prezi" <prezi.com>.

resilient community, as a local component plugged into the networked platform, needs a way to generate the formation of new local enterprises.

The incubator function within a networked platform architecture is somewhat different: the new enterprise is being incubated, not as a venture capitalist would launch a conventional start-up as an entirely separate firm in its own right, but as a member of an existing community or solidaritarian network.

> there's no capitalizing on expectations of capital gains and expansions, simply because the key to the model is that the company must always be property of community members. Although it can be financed in a complementary way, investors shouldn't have a speculative view of the stock; its profitability will come from distributed surpluses, not from the sale of their shares to new investors in successive capitalization rounds…
>
> … [T]here's nothing that benefits a community company more than taking advantage of the existing commons, like free software, business models, ideas … and above all, there's nothing better than creating it on the basis of interaction with peers.[75]

This function is vital, because each new enterprise increases the autonomy and resilience of the local economy through what Jane Jacobs called "import substitution," and contributes to the "economies of scope" of the whole system. As John Robb explains, they meet community needs within the platform while, in some cases, generating revenues for the community. Most analyses of the incubation function focus on financing mechanisms, but this is far from sufficient. The networked economic platform must actively foster the formation of enterprises by its members.

> What's a standard incubator do? It's a company that provides the following: * A common place to work. The more start-ups the better. This places start-ups in close proximity to each other so that they can share ideas, opportunities, and expertise… * Access to financing. In the traditional world, this meant Venture Capitalists. In the emerging world, its a combination of online community financing (Kickstarter, etc.) and community groups (local-vesting). * Technology support. From servers and rack space to networking and security. This is getting very inexpensive. * Recruiting. In-house human resources and head-hunting. New models would include community formation. * Mentoring. Executives and experienced professionals available to help. * Basic office services from legal to accounting to financial management to public relations.
>
> The Resilient Community Incubator
>
> While the services of the standard incubator are a good start, a resilient community incubator could have the following: * A maker-space replete with common tools, work space, and 3D fabrication equipment. * Space for advanced food processing businesses from micro-dairies to a commercial kitchen. * An open business ecosystem that allows smaller companies to tap into excess heat and materials used by a

[75] Sebastien Paquet, "What Are Emergent Cities?" *Emergent Cities* <emergentcities.sebpaquet.net>

> larger production process (think in terms of Chicago's "Back of the Yards"). * Mentoring by experts in animal husbandry to permaculture optimization to additive manufacturing. * A shared co-op training system, that helps people become successful at participating in employee owned and co-op businesses.
>
> Hey, if we can get this right, it will make it MUCH easier for people to invest in local start-ups since an incubator would reduce uncertainty and risk. That would make it possible for people to invest pension funds and 401ks into local businesses that they can use every day, rather than global boondoggles.[76]

Impact Hub. The Impact Hub network[77] began in 2005 with its first Hub in London, and has (as of November 2015) Impact Hubs in 73 cities around the world, and plans underway to open them in twenty more; it has 11,000 members in 49 countries. Each Impact hub is a combination innovation lab, business Incubator and social enterprise community center. Over 400 start-ups were created in Impact hubs in 2012, and 750 in 2013, with 3500 full-time jobs.

Grow Venture. The Grow Venture Community is a global distributed network for organizing crowdfunding of startups, as an alternative to banks and venture capitalists. The people creating the companies of the future will be the 99%, not the rich.

> There is a significant body of evidence that shows us that participatory, open, socially orientated connected platforms—can be built cheaply, operate differently to conventional models of organisation—which can outperform these large siloed incumbents…
>
> GrowVC believes an important part of that mission is to make the platform and ecosystem open to all parties to develop services and businesses on top of the technical and legal framework which has been created. GrowVC's vision is that they want to see 3rd parties able to run successful business by utilizing the GrowVC platform and tools.
>
> To date the Grow Venture Community and micro funding network has grown to over 11,000 entrepreneurs, investors and experts from 200 different countries. Its platforms exist in Chinese, German and Portuguese. Funds of up to $2/3m have been raised.
>
> Grow is running a partner programme in 70 US American campuses which I suggest we will see evolve rapidly over time.[78]

Unmonastery. Unmonastery, an offshoot of the EdgeRyders group in Europe, is sort of midway between the networked economic platform and the local business incubator. Kelly McCartney describes it as a combination of coworking, cohousing and hackerspace.

> An unMonastery… brings together a group of specifically selected thinkers, hackers, and makers to serve the greater good of the surrounding community.

[76] David de Ugarte, "A Community Company Incubator," *Las Indias in English*, January 29, 2013 <english.lasindias.com> Translated by Steve Herrick.

[77] John Robb, "Start-up Incubators for Resilient Communities?" *Resilient Communities*, April 11, 2012 <www.resilientcommunities.com>.

[78] <www.the-hub.net>

> The dearth of affordable housing has prompted all sorts of innovative solutions all across the world. It's fitting, then, that austerity-riddled Europe—a land where monasteries have a rich history—is where the unMonastery has taken shape… The historical role of the monastery in Europe involved a range of features, including:
>
> A physical place—building or set of buildings;
>
> Set within or nearby a community;
>
> Members committed to a particular way of being within their home;
>
> And to helping and serving the community that they were located in.
>
> The unMonastery is an an effort to serve both housemates and the local residents "by enabling a process of co-creation and co-learning between the community and unMonasterians." Bringing new resources and sharing existing ones in communities where they are lacking allows for native solutions to arise.
>
> The unMonasterians, somewhat free from the burden of income generation, devote their talents to regenerating decrepit infrastructure while building resilient communities.[79]

It basically reproduces the functions of the traditional medieval monastery:

> unMonastery embeds committed, skilled individuals within communities that could benefit from them, by opening a space within that locality as a base for those individuals… The intent is to reproduce the best of the social functions of the traditional monastery: giving its members a greater purpose, a chance to develop deep relationships with one another through living and working together, and a degree of freedom from the need to generate personal income in order to live for the duration of their stay. Most of all, it exists to serve the community, providing what would benefit it most.
>
> Communities with a prospective site can contact the project, sharing the details of the physical location itself, the needs and assets of the community, and what support can be offered. The location must accommodate at least 10 individuals and be minimally liveable, electricity, shelter, water and internet; but may be in need of work to improve it. Potential members are then matched to that offer based on availability and fit to the conditions, and the site can begin to become a reality.
>
> Members commit to up to 18 months involvement, and each new unMonastery site begins by gaining an understanding of what the community needs. The running and conduct of internal and external activities is guided by best practice accrued by the unMonastery project network, but is ultimately autonomous, selected by the members in that location. Members can expect to work hard, experience long days and face many challenges in the course of their stay.
>
> Activities are contingent on the location. They could include
>
> Advice and support on repurposing community spaces

[79] "The NEXT Silicon Valley is not a place it's a platform," *NSL Blog*, December 17, 2011 <www.no-straight-lines.com>.

> Building an Urban Garden and Permaculture Development…
>
> Developing different methods of local exchange
>
> Work Shopping technical skills based on skillsets of unMonastery residents
>
> At the end of the run of the unMonastery, the local community is consulted as to what should happen next. Perhaps the activities begun will be continued in the hands of the local people alone, or new ideas have begun to develop for a new wave of activities.[80]

The unMonastery is a response to a specific set of "pressing social issues that are becoming increasingly ubiquitous throughout Europe":

> large numbers of empty and disused housing stock, brain drain from provincial towns or cities and most hauntingly the dramatic reduction in services as a result of growing austerity cuts… unMonasterians practice lifestyle innovation to be able to support ourselves and our peers in helping communities unlock their transformative potential and surface hidden, underutilised or wasted resources…
>
> The project is unique in that it draws from a large pre-established network of highly skilled and motivated individuals known as EdgeRyders. Edgeryders is an international community of more than 1300 members (of whom 150 are very active) that assembled itself in 2011 as a "distributed think tank" of citizen experts advising the Council of Europe on European youth policy.[81]

The first unMonastery pilot project has been established in the town of Matera, Italy.

> A possible venue has been singled out. It is a former call center, property of the city itself: renovated, used for a few years, then abandoned again, but still in good condition. It is fully wired; the bathrooms are quite new and in good condition. It is a huge space, resulting from connecting several ancient buildings more or less embedded in each other; it is around 3000 square meters.[82]

XVIII. Mix & Match

On top of all the previous models of networked platforms, and particularly those supporting local communities on a modular basis, we can also throw in one more possibility: networked organizations forming partnerships with other networks, and local communities forming partnerships with a number of networked support platforms.

> P2P culture will help to establish many strong, self-reliant economies at the local geopolitical (or Eco-political) level by forming partnerships between the P2P guilds, leagues, etc. and progressive local communities. These partnerships will maximize

[80] Kelly McCartney, "unMonastery: Where Co-Living, Co-Working, and Hacking Collide," *Shareable*, December 12, 2013 <www.shareable.net>.

[81] <unmonastery.eu>.

[82] <unmonastery.eu>.

economies of scope via open, peer processes such as peer production and crowdsourcing. These p2p/geopolitical or p2p/eco-political partners would also become increasingly confederated with their counterparts bio-regionally, nationally, and globally.

There may be cases where such partnerships fuse into indivisible p2p entities and cases where they do not. Regardless of that, the objective is to weave the influence of p2p culture into the geopolitical fabric of the planet, concentrating first at the the local level, at the most receptive local geopolitical "nodes," and then spreading outwards. The levers which p2p culture will employ in this effort will be open knowledge, expertise, and methodology that will enhance the comparative advantages and capabilities of the geopolitical partners in contrast with those geopolitical entities which do not embrace the p2p partnership. In effect, p2p culture will come to the rescue of local entities that give us access. At the same time, we will redirect the public policies and practices of our geopolitical partners towards open and sustainable operations.[83]

[83] <unmonastery.eu>.

6. Basic Infrastructures: Money

I. What Money's For and What It Isn't

Local currencies, barter networks and mutual credit-clearing systems are a solution to a basic problem: "a world in which there is a lot of work to be done, but there is simply no money around to bring the people and the work together."[1] One barrier to local barter currencies and crowdsourced mutual credit is a misunderstanding of the nature of money. For the alternative economy, money is not primarily a store of value, but a unit of account for facilitating exchange. Its function is not to store accumulated value from past production, but to provide liquidity to facilitate the exchange of present and future services between producers.

The distinction is a very old one, aptly summarized by Joseph Schumpeter's contrast between the "money theory of credit" and the "credit theory of money." The former, which Schumpeter dismissed as entirely fallacious, assumes that banks "lend" money (in the sense of giving up use of it) which has been "withdrawn from previous uses by an entirely imaginary act of saving and then lent out by its owners. It is much more realistic to say that the banks 'create credit.,' than to say that they lend the deposits that have been entrusted to them."[2] The credit theory of money, on the other hand, treats finances "as a clearing system that cancels claims and debts and carries forward the difference… "[3]

Thomas Hodgskin, criticizing the Ricardian "wage fund" theory from a perspective something like Schumpeter's credit theory of money, utterly demolished any moral basis for the creative role of the capitalist in creating a wage fund through "abstention," and instead made the advancement of subsistence funds from *existing* production a function that workers could just as easily perform for one another through mutual credit, had the avenues of doing so not been preempted.

> The only advantage of circulating capital is that by it the labourer is enabled, he being assured of his present subsistence, to direct his power to the greatest advantage. He has time to learn an art, and his labour is rendered more productive when directed by skill. Being assured of immediate subsistence, he can ascertain which, with his peculiar knowledge and acquirements, and with reference to the wants of society, is the best method of labouring, and he can labour in this manner. Unless there were this assurance there could be no continuous thought, no invention, and no knowledge but that which would be necessary for the supply of our immediate animal wants…

[1] Poor Richard, "Guilding the Lilly," *Poor Richard's Almanack 2.0*, November 15, 2013 <almanac2010.wordpress.com>.

[2] Berrnard Lietaier, *The Future of Money: A New Way to Create Wealth, Work and a Wiser World* (London: Century, 2001) 112.

[3] Joseph Schumpeter, *History of Economic Analysis*. Edited from manuscript by Elizabeth Boody Schumpeter (New York: Oxford University Press, 1954), p. 1114.

> The labourer, the real maker of any commodity, derives this assurance from a knowledge he has that the person who set him to work will pay him, and that with the money he will be able to buy what he requires. He is not in possession of any stock of commodities. Has the person who employs and pays him such a stock? Clearly not…
>
> … Do all the capitalists of Europe possess at this moment one week's food and clothing for all the labourers they employ?…
>
> … As far as food, drink and clothing are concerned, it is quite plain, then, that no species of labourer depends on any previously prepared stock, for in fact no such stock exists; but every species of labourer does constantly, and at all times, depend for his supplies on the co-existing labour of some other labourers.[4]
>
> … When a capitalist therefore, who owns a brew-house and all the instruments and materials requisite for making porter, pays the actual brewers with the coin he has received for his beer, and they buy bread, while the journeymen bakers buy porter with their money wages, which is afterwards paid to the owner of the brew-house, is it not plain that the real wages of both these parties consist of the produce of the other; or that the bread made by the journeyman baker pays for the porter made by the journeyman brewer? But the same is the case with all other commodities, and labour, not capital, pays all wages…[5]

What political economy conventionally referred to as the "labor fund," and attributed to past abstention and accumulation, resulted rather from the present division of labor and the cooperative distribution of its product. "Capital" is a term for a right of property in organizing and disposing of this present labor. The same basic cooperative functions could be carried out just as easily by the workers themselves, through mutual credit. Under the present system, the capitalist monopolizes these cooperative functions, and thus appropriates the productivity gains from the social division of labor.

> Betwixt him who produces food and him who produces clothing, betwixt him who makes instruments and him who uses them, in steps the capitalist, who neither makes nor uses them, and appropriates to himself the produce of both. With as niggard a hand as possible he transfers to each a part of the produce of the other, keeping to himself the large share… While he despoils both, so completely does he exclude one from the view of the other that both believe they are indebted him for subsistence.[6]

Franz Oppenheimer made a similar argument against the wage-fund doctrine in "A Post Mortem on Cambridge Economics":

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[4] *Ibid*., p. 717.

[5] Thomas Hodgskin, *Labour Defended Against the Claims of Capital* (New York: Augustus M. Kelley, 1969 [1825]), pp. 36–40.

[6] Hodgskin, *Popular Political Economy: Four Lectures Delivered at the London Mechanics' Institution* (New York: Augustus M. Kelley, 1966 [1827]), p. 247.

> In short, the material instruments, for the most part, are not saved in a former period, but are manufactured in the same period in which they are employed…
>
> Rodbertus, about a century ago, proved beyond doubt that almost all the "capital goods" required in production are created in the same period… [Money capital] is not absolutely necessary for developed technique. It can be supplanted by co-operation and credit, as Marshall correctly states… Usually, it is true, under capitalist conditions, that a certain personally-owned money capital is needed for undertakings in industry, but certainly it is never needed to the full amount the work will cost. The initial money capital of a private entrepreneur plays, as has been aptly pointed out, merely the rôle of the air chamber in the fire engine; it turns the irregular inflow of capital goods into a regular outflow.[7]

E. C. Riegel argues that issuing money is a function of the individual within the market as a side-effect of exchange. "can be issued only in the act of buying, and can be backed only in the act of selling. Any buyer who is also a seller is qualified to be a money issuer."[8]Money is simply an accounting system for tracking the balance between buyers and sellers over time.[9]

And because money is issued by the buyer, it comes into existence as a debit. The whole point of money is to create purchasing power where it did not exist before: "… [N]eed of money is a condition precedent to the issue thereof. To issue money, one must be without it, since money springs only from a debit balance on the books of the authorizing bank or central bookkeeper."[10]

> IF MONEY is but an accounting instrument between buyers and sellers, and has no intrinsic value, why has there ever been a scarcity of it? The answer is that the producer of wealth has not been also the producer of money. He has made the mistake of leaving that to government monopoly.[11]

In a mutual credit-clearing system, Riegel's disciple Thomas Greco argues, participating businesses *spend money into existence* by incurring debits for the purchase of goods within the system, and then earning credits to offset the debits by selling their own services within the system. The currency functions as a sort of IOU by which a participant monetizes the value of her future production.[12] It's simply an accounting system for keeping track of each member's balance:

> Your purchases have been indirectly paid for with your sales, the services or labor you provided to your employer.
>
> In actuality, everyone is both a buyer and a seller. When you sell, your account balance increases; when you buy, it decreases.

[7] Hodgskin, *Labour Defended*, p. 71.

[8] Franz Oppenheimer, "A Post Mortem on Cambridge Economics (Part Three)," *The American Journal of Economics and Sociology*, vol. 3, no. 1 (1944), pp, 122–123, [115–124]

[9] E. C. Riegel, *Private Enterprise Money: A Non-Political Money System* (1944), Introduction <www.newapproachtofreedom.info>.

[10] *Ibid*., Chapter Seven <www.newapproachtofreedom.info>.

[11] Riegel, *The New Approach to Freedom: together with Essays on the Separation of Money and State.* Edited by Spencer Heath MacCallum (San Pedro, California: The Heather Foundation, 1976), Chapter Four <www.newapproachtofreedom.info>.

[12] Riegel, "The Money Pact, in *Ibid.* <www.newapproachtofreedom.info.html>.

It's essentially what a checking account does.[13] There's no reason businesses cannot maintain a mutual credit-clearing system between themselves, without the intermediary of a bank or any other third party currency or accounting institution. The businesses agree to accept each other's IOUs in return for their own goods and services, and periodically use the clearing process to settle their accounts.[14]

And since some of the participants run negative balances for a time, the system offers what amounts to interest-free overdraft protection. As such a system starts out, members are likely to resort to fairly frequent settlements of account, and put fairly low limits on the negative balances that can be run, as a confidence building measure. Negative balances might be paid up, and positive balances cashed out, every month or so. But as confidence increases, Greco argues, the system should ideally move toward a state of affairs where accounts are never settled, so long as negative balances are limited to some reasonable amount.

> An account balance increases when a sale is made and decreases when a purchase is made. It is possible that some account balances may always be negative. That is not a problem so long as the account is actively trading and the negative balance does not exceed some appropriate limit. What is a reasonable basis for deciding that limit?… Just as banks use your income as a measure of your ability to repay a loan, it is reasonable to set maximum debit balances based on the amount of revenue flowing through an account… [One possible rule of thumb is] that a negative account balance should not exceed an amount equivalent to three months' average sales.[15]

In fact, as David Graeber shows in his monumental *Debt: The First 5,000 Years*, that kind of mutual credit-clearing system, where neighbors and merchants keep running tabs and periodically settle up, was typical of medieval villages; and specie exchange did not naturally evolve from it, but was rather imposed by the new absolute states of the early modern period. In the 16th and 17th century English village, for example:

> Since everyone was involved in selling something … , just about everyone was both creditor and debtor; most family income took the form of promises from other families; everyone knew and kept count of what their neighbors owed one another; and every six months or year or so, communities would hold a general public "reckoning," canceling debts out against each other in a great circle, with only those differences then remaining when all was done being settled by use of coin or goods…
>
> In this world, trust was everything. Most money literally was trust, since most credit arrangements were handshake deals. When people used the word "credit," they referred above all to a reputation for honesty and integrity; … but also, reputation for generosity, decency, and good-natured sociability, were at least as important considerations when deciding whether to make a loan as were assessments of net income.[16]

[13] Greco, *The End of Money and the Future of Civilization* (White River Junction, Vermont: Chelsea Green Publishing, 2009), p. 82.

[14] *Ibid*., p. 102.

[15] *Ibid*., pp. 106–107

[16] *Ibid*., p. 134.

For a credit clearing system to thrive, it must offer a valued alternative to those who lack sources of money in the conventional economy. That means it must have a large variety of participating goods and services, participating businesses must find it a valuable source of business that would not otherwise exist in the conventional economy, and unemployed and underemployed members must find it a valuable alternative for turning their skills into purchasing power they would not otherwise have. So we can expect LETS or credit clearing systems to increase in significance in periods of economic downturn, and even more so in the structural decline of the money and wage economy that is coming.

Karl Hess and David Morris cite Alan Watts' illustration of the absurdity of saying it's impossible for willing producers, faced with willing consumers, to produce for exchange because "there's not enough money going around":

> Remember the Great Depression of the Thirties? One day there was a flourishing consumer economy, with everyone on the up-and-up; and the next: poverty, unemployment and breadlines. What happened? The physical resources of the country—the brain, brawn, and raw materials—were in no way depleted, but there was a sudden absence of money, a so-called financial slump. Complex reasons for this kind of disaster can be elaborated at lengths by experts in banking and high finance who cannot see the forest for the trees. But it was just as if someone had come to work on building a house and, on the morning of the Depression, that boss had to say, "Sorry, baby, but we can't build today. No inches." "Whaddya mean, no inches? We got wood. We got metal. We even got tape measures." "Yeah, but you don't understand business. We been using too many inches, and there's just no more to go around."[17]

The point of the mutual credit clearing system, as Greco describes it, is that two people who have goods and services to offer—but no money—are able to use their goods and services to buy other goods and services, even when there's "no money."[18] So we can expect alternative currency systems to come into play precisely at those times when people feel the lack of "inches." Based on case studies in the WIR system and the Argentine social money movement, Greco says, "complementary currencies will take hold most easily when they are introduced into markets that are starved for exchange media."[19] The widespread proliferation of local currencies in the Depression suggests that when this condition holds, the scale of adoption will follow as a matter of course. And as we enter a new, long-term period of stagnation in the conventional economy, it seems likely that local currency systems will play a growing role in the average person's strategy for economic survival.

For all these reasons, the kind of "community currency" that you have to buy with conventional currency is fundamentally wrong-headed. Unfortunately, this— Berkshares are a good example—is the most visible kind of "local currency" in the media—a "buy local" campaign in which local merchants agree to accept the local currency at some modest discount compared to dollars, and one obtains the local currency by trading in U.S. dollars at participating businesses. The problem is that, to obtain this currency, you've got to already have conventional money as a store of value from past transactions. It's essentially a greenwashed lifestyle choice for the NPR liberals who have the money in the first place.

[17] David Graeber, *Debt: The First 5,000 Years* (Brooklyn and London: Melville House, 2011), pp. 327–328.

[18] Karl Hess and David Morris, *Neighborhood Power: The New Localism* (Boston: Beacon Press, 1975), pp. 154–155.

[19] Greco, *The End of Money*, p. 116.

Such local currencies are basically useless for the primary purpose of a local currency: providing liquidity and a unit of account to facilitate exchange between those who have skills to trade for consumption, but no money. As Jem Bendell and Matthew Slater of the Community Forge currency system argue:

> … [M]any currency innovators have chosen currency designs which initially ally themselves with the existing monetary system, such as the 'Transition Pound' initiatives in the UK. This could be because they are designed with an interest in how to market an idea to people who would choose to engage in the currency for reasons other than necessity…
>
> Those countries that suffer a larger contraction in money supply are not interested in or able to use systems that require bank-debt to buy local currencies that in turn require charitable funding and entail additional transaction costs.[20]

II. The Adoption of Networked Money Systems

Alternative money systems tend to be adopted in situations in which the existing currency system is wanting, like the barter networks in the United States during the Depression, Argentina in 2002 and Greece during the current Euro crisis.

Besides mostly wrong-headed local currencies of the Berkshares variety, the unemployed and underemployed in communities around the world are responding to liquidity shortages through barter networks and time banks. In Greece

> [u]nemployment is up, lines of credit are strangled, invoices go unpaid, and retirements are at risk. Yet, the Greek people themselves are still ready to exploit their creativity and hard work for the common good. In the months since the real difficulty set in, some Greeks have begun to meet in the local agora to exchange goods and services directly… Since the currency they use is dominated by dysfunction at the highest levels, people are buying and selling through barter. They're trading carpentry for tango lessons, home cooked meals for baby-sitting. The barter network in the city of Volos is one of many that allow local Greeks to achieve a measure of prosperity using their ingenuity and hard work, side-stepping the currency system that is so tied up in unbearable complexities and unsolvable problems at the international level.
>
> The time bank, a slightly more sophisticated version of barter, is appearing in spots around the globe. A central repository keeps track of who offers what services, of how many hours they've contributed to the time bank, and how many hours they're owed… Once an individual has earned the hours by working for someone within the network, they can then spend them on the services they choose, with the number of hours remaining being coordinated by a central "time" bank. These systems are in use all over the world, from Chicago to Paris to Moscow…
>
> A group in Northern New England has developed a specialized time bank system that helps people pay for healthcare through their earned hours. TrueNorth, a nonprofit

[20] *Ibid*., p. 158.

health clinic in coastal Maine, has a deal with Hour Exchange Portland by which physicians accept as payment "time dollars" that their patients accrue through service to their neighbors.[21]

In areas on the European periphery hardest hit by the Eurozone crisis, like Greece, the incentive to resort to barter currencies has been especially strong:

> The first time he bought eggs, milk and jam at an outdoor market using not euros but an informal barter currency, Theodoros Mavridis, an unemployed electrician, was thrilled…
>
> Mr. Mavridis is a co-founder of a growing network here in Volos that uses a so-called Local Alternative Unit, or TEM in Greek, to exchange goods and services—language classes, baby-sitting, computer support, home-cooked meals—and to receive discounts at some local businesses.
>
> Part alternative currency, part barter system, part open-air market, the Volos network has grown exponentially in the past year, from 50 to 400 members. It is one of several such groups cropping up around the country, as Greeks squeezed by large wage cuts, tax increases and growing fears about whether they will continue to use the euro have looked for creative ways to cope with a radically changing economic landscape.
>
> "Ever since the crisis there's been a boom in such networks all over Greece," said George Stathakis, a professor of political economy and vice chancellor of the University of Crete. In spite of the large public sector in Greece, which employs one in five workers, the country's social services often are not up to the task of helping people in need, he added. "There are so many huge gaps that have to be filled by new kinds of networks," he said…
>
> The group's concept is simple. People sign up online and get access to a database that is kind of like a members-only Craigslist. One unit of TEM is equal in value to one euro, and it can be used to exchange good and services. Members start their accounts with zero, and they accrue credit by offering goods and services. They can borrow up to 300 TEMs, but they are expected to repay the loan within a fixed period of time.
>
> Members also receive books of vouchers of the alternative currency itself, which look like gift certificates and are printed with a special seal that makes it difficult to counterfeit. Those vouchers can be used like checks. Several businesspeople in Volos, including a veterinarian, an optician and a seamstress, accept the alternative currency in exchange for a discount on the price in euros.
>
> A recent glimpse of the database revealed people offering guitar and English lessons, bookkeeping services, computer technical support, discounts at hairdressers and the

[21] Jem Bendell and Matthew Slater, *Helping Sustainable Currencies to Scale:Strategic Insights from Current Practice.* 1st PUBLIC DRAFT (Version 1.0) May 14th 2012A. Non-referenced draft version of a paper to be presented at the Tesla Conference, Split, Croatia, July 10th, 2012.www.teslaconference.com. <www.scribd.com>, p. 2.

> use of their yards for parties. There is a system of ratings so that people can describe their experiences, in order to keep transparent quality control…
>
> The group also holds a monthly open-air market that is like a cross between a garage sale and a farmers' market, where Mr. Mavridis used his TEM credit to buy the milk, eggs and jam. Those goods came from local farmers who are also involved in the project.
>
> "We're still at the beginning," said Mr. Mavridis, who lost his job as an electrician at a factory last year. In the coming months, the group hopes to have a borrowed office space where people without computers can join the network more easily, he said…
>
> Similar initiatives have been cropping up elsewhere in Greece. In Patras, in the Peloponnese, a network called Ovolos, named after an ancient Greek means of currency, was founded in 2009 and includes a local exchange currency, a barter system and a so-called time bank, in which members swap services like medical care and language classes. The group has about 100 transactions a week, and volunteers monitor for illegal services, said Nikos Bogonikolos, the president and a founding member.[22]

TEM operates on principles much like Greco's credit-clearing system.

> It is, in effect, a highly-organised barter economy, where members sign up online to access a database and to activate their own TEM account, which starts at zero. They then take payment for their goods and services in TEMs and use the units accrued to buy goods and services from other members. The currency, which began actively functioning in mid-2010, is also backed by a voucher system resembling a chequebook.
>
> To ensure TEMs circulate as a viable currency, there are hard and fast rules: no one may hoard more than 1,200 TEMs in their account; no one may owe more than 300. One TEM unit is equal to one euro.
>
> Each Saturday, the TEM-using faction of Volos gathers at a large new central market venue donated by the local university. There they trade and haggle over a sprawling selection of goods. It is half car-boot sale, half farmers' market. And euros are rarely seen.[23]

Representatives of the Community Forge currency system, also based on the Greco model, describe it as

> a form of mutual credit, where everyone can issue or earn credit, without the need for a loan from a bank. Everyone can exchange as much as they wish, without it being restricted by availability of Euros, and everyone ends up returning to zero, so no one makes money out of issuing the currency or charging interest. The mayor of Volos supports the project and thinks it can co-exist with the Euro.[24]

[22] Eric Garland, "The Next Money: As the Big Economies Falter, Micro-Currencies Rise," *The Atlantic*, May 16, 2012 <www.theatlantic.com>.

[23] Rachel Donadio, "Battered by Economic Crisis, Greeks Turn to Barter Networks," *New York Times*, October 2, 2011 <www.nytimes.com>.

[24] Georgios Makkas, "No Euros? No Problem," *Athens News*, June 19, 2012 <www.athensnews.gr>.

By March 2012 Volos' TEM system had doubled to 800 members, reaching 1300 in January 2013. A member, Maria Choupis, summarized the significance of the system in language that applies just as well to the philosophy behind any welldesigned alternative currency:

> "You are not poor when you have no money," she said, "you are poor when you have nothing to offer—except for the elderly and the sick, to whom we should all be offering."[25]

Small businesses are staying solvent by distributing their goods through nomiddlemen networks instead of the former distribution networks of wholesalers and retailers. Savvas Mavromatis, a small detergent manufacturer in Alonia, credits such a non-profit collective—despite the fierce anti-capitalist rhetoric of the organizers who approached him—with saving his family business.[26]

In Spain, in the face of skyrocketing unemployment rates since the 2007 market collapse (53% for 16- to 24-year-olds, 27% for 25- to 35-year-olds), the unemployed and underemployed have turned to assorted barter arrangements in the informal economy in order to survive outside the wage system. Such arrangements include time banks, of which some 290 existed in Spain as of August 2012.

> In the Catalonia region, several businesses and town governments have started accepting an invented currency—the Eco—that is backed by hours of labor. Individuals are trading cooking lessons and fresh produce for car rides and legal services. While time banks may not be a permanent solution to the stability of the Spanish economy, they can provide the jobless with a way to sustain themselves.[27]
>
> Psychologist Angels Corcoles recently taught a seminar about self-empowerment for women, and when she finished the organizers handed her a check with her fee. The amount was in hours, not euros.
>
> But Corcoles didn't mind. Through a citywide credit network that allows people to trade services without money, the 10 hours Corcoles earned could be used to pay for a haircut, yoga classes or even carpentry work.
>
> At a time when the future of the euro is in doubt and millions are unemployed or underemployed with little cash to spare, a parallel economy is springing up in parts of Spain, allowing people to live outside the single currency.
>
> In the city of Malaga, on the country's southern Mediterranean coast just 80 miles from Africa, residents have set up an online site that allows them to earn money and buy products using a virtual currency. The Catalonian fishing town of Vilanova i la Geltru has launched a similar experiment but with a paper credit card of sorts. It implements a new currency worth slightly more than the euro when it is used at local stores.

[25] Bendell and Slater, *op. cit.*, p. 2.

[26] John Henley, "Greece on the breadline: cashless currency takes off," *The Guardian*, March 16, 2012 <www.guardian.co.uk>; Helena Smith, "Euros discarded as impoverished Greeks resort to bartering," *The Guardian*, January 2, 2003 <www.guardian.co.uk>.

[27] Andrew Higgins, "After Crisis, Greeks Work to Promote 'Social' Economy," *New York Times*, January 28, 2014 <www.nytimes.com>.

> In Barcelona, the country's second-largest city after Madrid, the preferred model is time banks, which allow people to trade their services in hours without the involvement of money.
>
> "This is a way for people who are on the fringes of the economy to participate again," said Josefina Altes, coordinator of the Spanish Time Bank Network.[28]

Informal banking systems, similarly, become most important in those areas where the official financial system is least effective in providing liquidity for exchange between ordinary people. In the informal settlement of Bangladesh, Kenya, the Bangla Pesa barter currency system is organized according to Greco's creditclearing architecture.

> Bangla-Pesa is a program to strengthen and stabilize the economy of the informal settlement of Bangladesh, Kenya by organizing its more than 200 small scale businesses into a Bangla Business Network (BBN) through which its members can utilize a complementary currency to mediate trades. The *Bangla-Pesa* is a unit of credit within this mutual-credit-clearing (or multilateral reciprocal exchange) system which provides a means of payment that is complementary to official money.
>
> As such, it helps to stabilize the community in the face of monetary volatility by allowing Network members to trade with each other without using the national currency… The BBN launched the Bangla-Pesa currency in May 2013. Credits are issued in the form of paper-vouchers that can pass from hand to hand as payment for goods and services. Toward the end of 2013, we hope to add the capability of using mobile phone technology…
>
> Once accepted into the Network through a process of finding four guaranteeing, each business is allocated a credit line in Bangla-Pesa. The businesses also pay a membership fee to the network in Bangla-Pesa, which is used for administration, marketing and community programs. By using the Bangla-Pesa to buy goods and services at fellow BBN member businesses, they also accept to sell their own goods and services for Bangla-Pesa. The amount of Bangla-Pesa in circulation is determined by the membership and targeted using baseline data, at an amount usable for daily transactions. This currency forms a buffer against fluctuations in the money supply due to remittances, weather, holidays, sending children to school, political turmoil and so on.[29]

III. Examples of Networked Money Systems

There are a number of competing digital complementary currency systems, most of them providing networked currency platforms on something resembling Greco's principles: among them Community Exchange Systems, Community Forge and Ripple.

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[28] Orion Jones, "Unemployment in Spain Leads to the Creation of New Currencies," *Big Think*, August 27, 2012 <bigthink.com>.

[29] Ariana Eunjung Cha, "In Spain, financial crisis feeds expansion of a parallel, euro-free economy," *Washington Post*, August 27, 2012 <www.washingtonpost.com>.

Community Exchange System. CES[30] was developed in 2002 and has three hundred participating communities.[31]

> Unlike the conventional money-based exchange system, the CES has no physical currency. The idea that such a currency is required before any trading can take place is an ancient one and increasingly irrelevant in this day and age of computers and the Internet. Information can replace currencies and at the same time eliminate most of the problems associated with regular money…
>
> As the 'currency'… is information it does not have to be 'created' like conventional money so there is no need for an issuing authority or for a supply of it, and none is required to start trading. 'Money' in these systems is a retrospective 'score-keeping' that keeps a record of who did what for whom and who sold what to whom. There can never be a shortage of information as there can be of money, as information does not have to be created and limited by a third party (banks or government) in order to give it value. For this reason the concepts of borrowing, lending and interest are meaningless in the CES…
>
> CES exchanges compile and distribute a directory of goods and services offered by the users registered with them, as well as a list of their 'wants' or requirements. When a user requires something advertised in the directory the seller is contacted and the trade takes place… Sales are recorded as credits for sellers and as debits for buyers. The central book-keeping system records the relative trading positions of the traders. Those in credit can claim from the community goods and services to the value of their credit and those in debit owe the community goods and services to the value of their debit. Traders receive a regular statement of account that lists their trades and gives their balance at the end of the period. Information about the trading position of others prevents unscrupulous buyers from exploiting the system.[32]

As with Greco's system, there is no need to accumulate a store of value from past exchange before one can participate in the system. One's account simply tracks the net balance of exchanges to date.

CES money "is abundant and can never be in short supply"; hence "It bridges the 'money gap' between the skills/offers/talents/gifts of sellers on the one hand and the wants/needs/requirements of buyers on the other. Conventional money usually can't bridge this gap because its supply is limited or non-existent."[33]

Drupal and Community Forge. Drupal, the open-source content management system, can also serve as the architecture for a wide range of alternative currency systems.

> Community Accounting
>
> Complementary Currencies
>
> Virtual Currencies

[30] "Bangla Pesa—Complementary Currency Program," *Koru Kenya* <koru.or.ke>. Accessed May 24, 2013.
[31] <www.ces.org.za>.
[32] "Compare with CES and Community Tools" Accessed November 15, 2011 <communityforge.net>.
[33] "What is the CES?" Accessed November 15, 2011 <www.ces.org.za.htm>.

Community Exchange

Time Banking

Community Currencies

Credit Unions

An all-embracing and flexible package which includes a mutual credit ledger, super-configurable transaction forms and displays, including several views and blocks. It can be used as a digital back-end for paper money projects, or to run an entire LETS, Timebank, or several in parallel. With a little tweaking, it can manage currencies conforming to a wide range of designs. Autopayments can be done with a little glue code…[34]

To take one example, Community Forge is a local currency system based on the Drupal architecture.

> Starting with a LETS architecture coded into the Drupal platform, CommunityForge aims to deliver its web solution as many LETS communities with transaction-enabled social networking web sites. With a membership base, it will seek to devolve power and skills while providing more and better tools to more local communities seeking to strengthen and build resilience.
>
> By offering economic tools, to enable real-world and virtual communities to declare their own localised currencies, and to trade in them using open source software, thus building a more sustainable economy for the 21st century.

Its purpose, as described in the Community Forge Mission Statement, is "to Make Community Currencies Ubiquitous."

1. to enable communities to use mutual credit currencies as part of a larger localisation movement
2. to campaign and educate for interest free money
3. to concentrate expertise and foster experimentation in CC design[35]

As described by the Community Forge project, CF is of special value because it's designed to be scalable and modular:

> Our software, based on Drupal, is the only community currency trading software built on a social networking platform. That means thousands of software developers can set up similar sites, and many of them could easily modify the software. As a popular open source project, the code is very high quality and continually improving. And we take a more holistic view in terms of building up a community of users who can support each other.[36]

[34] "Advantages of the CES" Accessed November 15, 2011 <www.ces.org.za>.
[35] matslats, "Community Accounting," *Drupal*, September 7, 2009 <drupal.org>.
[36] "Our Story," *CommunityForge.net.* Accessed November 15, 2011 <communityforge.net>.

CF is two years old, and has some fifty communities participating.[37] Jim Bendell and Matthew Slater describe its principles—and its prospects for the future—at greater length:

> At Community Forge we seek to solve the dual problem that i) there are not enough sustainable currencies widely available for daily exchange, and that ii) there has been minimal support from institutionalised powers in government, business or civil society, for creating sustainable currency systems.
>
> We are deploying mutual credit systems because they do not require support in order to begin (problem ii) and they have a number of advantages as a sustainable currency (problem i), including the way they address the following related needs:
>
> - they help match underused assets with unmet needs, to the degree that people want, not to the degree that there is money around to complete a transaction. This helps to address the problem where people stand idle, as unemployed, and assets stand idle, while needs exist or grow within society.
> - they involve all credits and debits ultimately cancelling each other out, you don't find increasing amounts of money chasing the same amount of stuff or services, so the currency doesn't inflate. This helps to address the problem where currency loses its value and thus makes the elderly on low incomes more vulnerable.
> - there is no interest charged upon the issuing of credit, so wealth isn't extracted from those with lower incomes. This helps address the problem of growing economic inequality and reduced social mobility.
> - they are often locally-focused, they encourage us to trade locally, so reducing our carbon footprint and build economic resilience
> - they do not require backing, beyond the soft infrastructures to produce credibility, so there is no need for start-up capital, and thus no extraction of wealth by lenders or investors. In addition, as an accounting currency, there is also nothing to steal…[38]
>
> Many Local Exchange Trading (LETS) groups in France and Switzerland use our software and services. A cluster of LETS in Belgium has committed to our software for three years now, they are expert users and can run it largely without us now. We are networking their mutual credit circles together so they can trade between circles. www.communityforge.net
>
> We are working with the Common Good Bank in the USA to make an SMS interface for our software. commongoodbank.com
>
> We are working with the Hub network to develop a combined mutual credit/reputation system to encourage freelancers to collaborate better together. www.the-hub.net

[37] "What's so special about CommunityForge's service?" Accessed November 15, 2011 <communityforge.net>.
[38] "Compare with CES and Community Tools" Accessed November 15, 2011 <communityforge.net>.

> When Transition towns produce a community site for each town, we shall offer an optional marketplace component, working with communitytools.info
>
> We are engaged with Timebanks in UK and Turkey as they experiment with ways to become more sustainable through business participation. zumbara.com
>
> We are striving to provide an affordable rebuild for Community Exchange Systems (CES) whose software is ageing. www.ces.org.za
>
> Through participation in initiatives like The Finance Innovation Lab, The Rebuild 21 Conference, TEDx Transmedia, Future Perfect, European Academy of Business and Society, Global Ethics Forum and World Economic Forum, we articulate our analysis and work to wider audiences.[39]
>
> … We are not dogmatic about currency design, but we have some experience at the same time, and we are happy to witness a wide diversity of approaches. So we are one step removed from the coal face where transactions actually happen, and our impact is felt across a large proto-network. We are networking all the community exchanges we host, because our users absolutely need the benefits described by Metcalfe's law, which states that networks become exponentially more useful as they grow… We believe that a new culture of sustainable businesses is emerging and that we can help them to flourish by providing non-money accounting systems.[40]

Ripple. As the Ripple website points out, a trust-based local currency performs exactly the same function your checking account does. J.P. Koning calls it "Bills of Exchange 2.0." Every time you write a check, you're giving a merchant an IOU backed by the merchant's faith in the bank's ability to make it good.

> Money as we know it is made from promises, specifically bank promises, in the form of bank account balances. Ripple's goal is to make your promises as useful for paying people as bank promises are.
>
> To start with, let's look at what happens if you tried to use your own promise as money. Suppose you went to the store and tried to pay with an IOU. This might work, except for two things:
>
> 1. The store owner may not know you are trustworthy.
> 2. Even if the owner trusts you, many others don't, so she can't use your IOU to buy things.
>
> Ripple solves the first problem by finding one or more people who can exchange your IOU for one issued by someone the store owner trusts. For example, if the store owner trusts your friend Alice, and Alice trusts you, you can give your IOU to Alice, and Alice can give her IOU to the owner. This can all happen instantly over the internet.

[39] Bendell and Slater, *op. cit.*, pp. 3–4.
[40] *Ibid.*, p. 5.

> The cool thing now is that the store owner can actually use Alice's IOU to buy things, because Ripple can convert it into IOUs that are useful for paying other people. That solves the second problem.[41]

Koning explains his "Bills of Exchange" comparison:

> Ripple is (perhaps unintentionally) replicating the bills of exchange system by allowing individuals to emi3t their own highly liquid IOUs. Ripple users build a list of contacts whose credit they trust and indicate their degree of trust by stipulating how much of an issuer's IOUs they are willing to accept and in what denominations. Once they receive those IOUs in payment, the IOU might be settled in underlying settlement media (say bitcoin or dollars) and canceled. Alternatively, Ripple users are free to exchange these IOUs on to anyone else who accepts the issuer's credit. Finally, when two people owe each other an equivalent IOU, they can simply net out the transaction and cancel both promises.
>
> Webs of trust allow Ripple transactors with no direct personal contact to transact with each other via the chain of trusted credit-granting intermediaries that stand in between them… Rather than using a bank, the transaction can be consummated through a distributed network of friends and acquaintances.[42]

"What Ripple does," Stanislaus Jourdan says, "is enhance P2P payment systems based on already existent social networks by turning them into trust networks and transaction pathways."[43]

Bitcoin. The basic idea of Bitcoin, as described by Brett Scott, is that it opensources the banks' monopoly on recording transaction data.

> Banks are information intermediaries… Nowadays, if you have '£350 in the bank', it merely means the bank has recorded that for you in their data centre, on a database that has your account number and a corresponding entry saying '350' next to it. If you want to pay someone electronically, you essentially send a message to your bank, identifying yourself via a pin or card number, asking them to change that entry in their database and to inform the recipient's bank to do the same with the recipient's account.
>
> Thus, commercial banks collectively act as a cartel controlling the recording of transaction data… To create a secure electronic currency system that does not rely on these banks thus requires three interacting elements. Firstly, one needs to replace the private databases that are controlled by them. Secondly, one needs to provide a way for people to change the information on that database ('move money around'). Thirdly, one needs to convince people that the units being moved around are worth something.

[41] *Ibid*., p. 6.

[42] J.P. Koning, "Ripple, or Bills of Exchange 2.0," *Moneyness*, February 19, 2013 <jpkoning.blogspot.com>; "RippleWiki/Main." Accessed November 15, 2011 <ripple-project.org>.

[43] Koning, *op. cit.*

> To solve the first element, Bitcoin provides a public database, or ledger, that is referred to reverently as the blockchain. There is a way for people to submit information for recording in the ledger, but once it gets recorded, it cannot be edited in hindsight…
>
> Secondly, Bitcoin has a process for individuals to identify themselves in order to submit transactions to those clerks to be recorded on that ledger. That is where publickey cryptography comes in. I have a public Bitcoin address (somewhat akin to my account number at a bank) and I then control that public address with a private key (a bit like I use my private pin number to associate myself with my bank account). This is what provides anonymity.
>
> The result of these two elements, when put together, is the ability for anonymous individuals to record transactions between their bitcoin accounts on a database that is held and secured by a decentralised network of techno-clerks ('miners'). As for the third element—convincing people that the units being transacted are worth something—that is a more subtle question entirely that I will not address here.[44]

But the third question entails the biggest shortcoming of Bitcoin, from a community currency standpoint: it serves more as a store of value than simply recording debits and credits. Its quantity is fixed beyond a certain point, which means that individual units will appreciate in value as people come into the system. That is, it's deflationary. From the design perspective of traditional alternative currency systems, that's a serious bug. Deflation means people will hoard it rather than keep it in circulation.[45] Most LETS systems have a tendency toward hoarding because the range of good and service providers participating in them means the average member can only meet an unsatisfactory portion of her total needs through the system, and has leftover notes with nothing to spend them on. Silvio Gesell built demurrage into his currency system—i.e., it lost value over time—as an incentive to spend it rather than hoard it, and overcome the deflation and idle capacity of the larger economy.

So Bitcoin functions like a typical commodity or specie currency, and tends to promote speculation and the concentration of wealth into a few hands. Community Forge co-founder Matthew Slater notes:

> Complementary currency activists have been stupified as bitcoin came from 'nowhere', gained huge media attention, reached a market capitalisation of $1bn, and is now attracting investors and entrepreneurs and becoming established. Bitcoin serves libertarian purposes by evading central bank controls, but… it increasingly resembles the old system. Some of us understand that any commodity currency serves the interests of the wealthy…[46]

[44] Stanislaus Jourdan, "Game over, Bitcoin. Where is the next human-based digital currency?" *Ouishare*, May 21, 2013 <ouishare.net>.

[45] Brett Scott, "Visions of a Techno-Leviathan: The Politics of the Bitcoin Blockchain," *EInternational Relations*, June 1, 2014 <www.e-ir.info>.

[46] Sebastiano Scrofina, "Scrofina's answer to Bitcoin: If one were to make a competitor to Bitcoin, what features would be desirable?" *Quora*, June 15, 2011 <www.quora.com>.

According to Michel Bauwens of the Foundation for Peet-to-Peer Alternatives, "Bitcoin is designed by people who believe in a certain type of economy, it is designed to be like gold, privileging hoarding."

> Bitcoin can be described as a deflationary currency, or even a mere (virtual) commodity. Like gold, bitcoins are valuable because of their scarcity—Bitcoin's money supply is limited to 21 million of units. A feature, according to libertarians and gold standard advocates, yet a bug for many…
>
> Another way to put it: since bitcoin units are being created at an increasingly slower pace while more and more users join the currency, the value of each unit can only rise. Thereby, new entrants only have a smaller share of the Bitcoin monetary mass—unless they are rich enough to buy more bitcoin against official foreign currencies.
>
> "Bitcoin is about creating asymmetry and inequality where there is none," concludes Financial Times' journalist Izabella Kaminska, "It's a system designed to create bitcoin millionaires.
>
> Those Bitcoin millionaires are not a myth… [R]esearchers Dorit Ron and Adi Shamir have found very insightful results. First, they estimated that 59.7% of the Bitcoin coins are dormant, which means the majority of the coins are saved rather than spent in the system. Second and more interesting, they found that 97% of Bitcoin accounts contain less than 10 bitcoins, while a handful of 78 entities are hoarding more than 10,000 Bitcoins…
>
> So basically you have a group of happy few people controlling the vast majority of all Bitcoins. But who could these guys be? Well, some further research led by Sergio Lerner suggests that one of those bitcoin millionaires is the mysterious Satoshi Nakamoto, the alleged inventor of Bitcoin. Since Nakamoto was most certainly the first Bitcoin user to make a transaction, Lerner could trace all of his account's activity and found that he must own about 980K Bitcoins, which equal about 110 million dollars with today's exchange rate…
>
> Michel Bauwens—whose institution, the P2P Foundation made use of Bitcoin very early—has also sensibly withdrawn his support of the digital currency and expressed strong criticism during a talk at OuiShare Fest in May 2013. But contrary to Varoufakis, he remains optimistic:
>
> Thank you Bitcoin for doing this, because now we can do something better— Michel Bauwens, P2P Foundation…
>
> At a panel at OuiShare Fest on Virtual Currencies, everyone agreed on the principle that next currencies should be based on trust, and help the real economy. But where to start?
>
> "We need to dismantle the idea that money should be a commodity, a store of value" Dropis' Scròfina says.[47]

[47] Michel Bauwens, "An update on the interoperability of complementary currency software systems," *P2P Foundation Blog*, August 22, 2013 <blog.p2pfoundation.net>.

And because the money is created by a third party rather than by the very act of spending it, it doesn't solve the problem of liquidity for those who lack conventional money.

Bitcoin wealth is so concentrated as to cause even Thomas Piketty to stagger. Over half of all Bitcoins are owned by one tenth of a percent of all Bitcoin accounts.[48] And in June 2014 a single entity for the first time acquired 51% of total computing power used for mining Bitcoins for substantial periods of time.[49]

Nevertheless, Bitcoin created by far the biggest splash of any alternative with its appearance in the mainstream media in 2011. The moral panic surrounding Silk Road made it front page news for people who'd never heard of encrypted currencies. Rick Falkvinge, the gray eminence of The Pirate Bay, described Bitcoin as "the Napster of Banking." Despite its technical shortcomings, its innovations in peer-to-peer architecture and its sheer impact on public awareness made it the forerunner of whatever encrypted currency system winds up taking over the ecosystem.

> One general rule of technical advancement is that it's not necessarily the most feature rich variant of a new technology that reaches the tipping point and critical mass, or even the cheapest or most available: rather, it tends to be the easiest to use…
>
> History so far tells us that it takes about ten years from conception of a technology, or an application of technology, until somebody hits the magic recipe in how to make that technology easy enough to use that it catches on. And when it does, boy, does it catch on…
>
> It took ten years for music sharing to become easy enough to wildfire, courtesy of Napster. It took video sharing ten years to become easy enough to wildfire.
>
> So if you want a crystal ball of the next battle, look at what many techies are doing right now, but that is obscure and hasn't caught on; something that has a very clear and attractive use case once it becomes easy enough.
>
> Here's what's on my radar: banking. There's at least a dozen different variants of decentralized cryptographic currencies and transaction systems out there, very sophisticated and totally incomprehensible. There's Ripple, BitCoin, ecash and others.
>
> Just as BitTorrent made the copyright industry obsolete in the blink of an eye, these stand to make banks obsolete. These, or their successor, will hit a tipping point as soon as somebody makes it easy enough to use. The technology is there, the use case is there—there's certainly no shortage of annoyance with big banking. It's just a matter of usability now.
>
> When this tipping point happens, there won't be any central point of control over economies. It will be like everybody traded in cash, traditional anonymous cash, once again…
>
> Imagine the ramifications of that for a moment. The governments of the world are on the brink of losing the ability to look into the economy of their citizens. They stand to lose the ability to seize assets, they stand to lose the ability to collect debts.

[48] Stanislaus Jourdan, *op. cit.*

[49] Michel Bauwens, "In the Bitcoin world, half the wealth belongs to the 0.1 percent," *P2P Foundation Blog*, May 22, 2014 <blog.p2pfoundation.net>.

> No application of force in the world is going to help: everything is encrypted, and destroying a computer with any amount of police firepower will accomplish zilch…
>
> If you thought the wars over knowledge and culture were intense, I believe we'll see much more interesting events unfold in the coming decade…[50]

Chris Pinchen, likewise, sees Bitcoin as a harbinger of future developments at a time when existing governance mechanisms—states and corporations—are crumbling from within. The cryptocurrency movement

> is significant because it is a vanguard phenomenon. It is a cross-over species that is pioneering a transition from the current socio-economic order of bureaucratic states, grounded in rigid hierarchies, rule-sets and territorial control, to a new order that more resembles an ecosystem whose governance institutions are based on peer to peer social relations that co-evolve within a global socio-technological framework.
>
> … Bitcoin is very likely the first in a series of real world experiments in new forms of trustworthy digital institutions that will challenge the sovereignty and governance power of states. These new institutions may even come to supplant traditional, physical democratic institutions because of their inherent efficiencies, versatility, stability and safeguards against corruption.[51]

Bitcoin's encryption, combined with a p2p architecture which frees it from dependence on a central server network, makes it extremely opaque to "the authorities." Moral scolds like Sen. Charles Schumer went ballistic at news that Bitcoin was being used as a medium of exchange in black market venues like Silk Road for purchasing illegal drugs. But as usual, their outraged squawking about the goings-on in the Intertubes far exceeded their actual power to do anything about it.

> Unlike other currencies, Bitcoin uses a peer-to-peer technology to manage transactions and validate payments. Since no bank is involved, purchases don't leave a paper trail for law enforcement agencies to track criminal activity.
>
> "The only method of payment for these illegal purchases is an untraceable peertopeer currency known as Bitcoins. After purchasing Bitcoins through an exchange, a user can create an account on Silk Road and start purchasing illegal drugs from individuals around the world and have them delivered to their homes within days," the senators wrote…
>
> However, finding black markets like Silk Road that promote the use of Bitcoin won't be easy. The only lead investigators have is tracking transaction patterns that may suggest the exchange of real money for Bitcoin, according to the report.[52]

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[50] Bauwens, "The end of Bitcoin's decentralization promise: monopoly of Bitcoin's total computational power," *P2P Foundation Blog*, June 17, 2014 <blog.p2pfoundation.net>.

[51] Rick Falkvinge, "With the Napster of Banking Round the Corner, Bring Out Your Popcorn," *Falkvinge & Co. on Infopolicy*, May 11. 2011 <falkvinge.net>.

[52] Chris Pinchen, "Why Bitcoin is a Foundational Change That Won't Go Away—and Could Change Everything," *P2P Foundation*, November 26, 2011 <blog.p2pfoundation.net>.

Bitcoin is vulnerable at its real-world interface with the official currency, as shown by the hacking of the largest Bitcoin currency exchange, Mt. Gox. As with the suppression of Napster, Bitcoin users responded with Dark Exchange, "a distributed p2p exchange for bitcoin."[53]

As reported by the *Gawker* article which Cheredar cites, law enforcement actually does have some tools despite the end-to-end encryption of the Bitcoin architecture itself.

> Jeff Garzik, a member of the Bitcoin core development team, says in an email that bitcoin is not as anonymous as the denizens of Silk Road would like to believe. He explains that because all Bitcoin transactions are recorded in a public log, though the identities of all the parties are anonymous, law enforcement could use sophisticated network analysis techniques to parse the transaction flow and track down individual Bitcoin users.
>
> "Attempting major illicit transactions with bitcoin, given existing statistical analysis techniques deployed in the field by law enforcement, is pretty damned dumb," he says.[54]

Timothy B. Lee explains, in greater detail, the vulnerability of Bitcoin where its encrypted architecture intersects with the non-encrypted world:

> Remember, people want money so they can buy stuff. There are a few goods and services, like pornography or consulting work, that can be delivered entirely over the Internet. But people mostly buy products that need to be physically delivered. An American who wants to deal primarily in Bitcoins will, at some point, need to either buy food and shelter in Bitcoins or convert some of their Bitcoins to dollars. And that means making Bitcoin payments to people in the US.
>
> But the US government could easily require any business accepting Bitcoin payments (or converting Bitcoins to dollars) to collect identification information from their customers in the same way that "know your customer" regulations require financial institutions to collect information about their customers. And once the government has de-anonymized a significant fraction of the addresses on the network, they'll be able to infer many of the others using basic detective work. Remember, the full pattern of transactions is a matter of public record. Officials trying to identify a particular address will have a complete record of every address that's ever sent money to, or received money from, that address. If any of them are within the United States, they can be compelled to disclose details (IP addresses, shipping addresses, contact email address, etc) that could help identify the address's owner.
>
> Now this isn't to say that a determined individual couldn't use Bitcoin in a way that preserves his privacy. But it would either require a high level of technical savvy or significant lifestyle changes. He could avoid working for traditional US employers and buying things from mainstream US businesses. But most users just don't care about privacy enough to make those kinds of major lifestyle changes to get it.

[53] Tom Cheredar, "Forget piracy, U.S. government is going after Bitcoin," *VentureBeat*, June 8, 2011 <venturebeat.com>.

[54] <github.com>.

> Another approach would be to use technical means to obfuscate the flow of funds to and from his accounts. He could route all Bitcoin traffic through an anonymization service like Tor. He could create a large number of decoy accounts and have different people pay different accounts. There could even be Bitcoin "money laundering" services that accept money from you and pay you back in another account. But few people have the patience or technical know-how to do this effectively.
>
> Moreover, people willing to go to that much trouble can obtain roughly the same degree of financial privacy using dollars. Most obviously, you can conduct transactions in cash, which is inherently resistant to government surveillance. For remote transactions, there are any number of offshore intermediaries in Switzerland, the Cayman Islands, and elsewhere that have been helping privacy-conscious Americans stay beyond the long arm of the law for decades. And all of these transactions have an important advantage over Bitcoin: they don't produce public entries in a global distributed database.[55]

But Thomas Lowenthal, at *Active Rhetoric*, argues that automated user interfaces in future upgrades of Bitcoin will enable average users to take the obfuscation and laundering countermeasures described by Lee without it *being* "that much trouble."[56]

After all this back-and-forth, perhaps the best conclusion we can come up with is that an encrypted currency like Bitcoin would work best when coupled with another trust network like a phyle, whose members have been vetted for trustworthiness.

Bitcoin has made significant mainstream in-roads, being accepted by a growing number of online retailers and service providers, and attempting to compete with PayPal as an online payment option.[57]But in the meantime, warnings about its security as a black market currency came true with a vengeance. In October 2013 the Bitcoin world was rocked by news that the U.S. government had shut down Silk Road.

As my colleague at Center for a Stateless Society, Charles Johnson, said: "It looks like Silk Road is going to be the Napster of online black markets. Now the question is, who's going to become the BitTorrent?"[58]The Napster comparison was fairly common. Bitalik Buterin wrote:

> Research into infrastructure like decentralized webs of trust is likely to increase; just like the successor to Napster was the decentralized BitTorrent, the true successor to Silk Road will likely need to be decentralized as well. Will it happen? The tools are out there…. The next level will be to set up a decentralized marketplace. That is simply a matter of creating a simple application-specific message protocol on top of BitMessage and then creating a graphical user interface for it. The web of trust, necessary to

[55] Adrien Chen, "The Underground Website Where You Can Buy Any Drug Imaginable," *Gawker*, June 1, 2011 <gawker.com>.

[56] Timothy B. Lee, "How Private Are Bitcoin Transactions?" *Forbes*, July 14, 2011 <www.forbes.com>.

[57] Thomas Lowenthal, "Bitcoin: More Covert than it Looks," *Active Rhetoric*, July 14, 2011 <activerhetoric.wordpress.com>.

[58] Nicolas Mendoza, "Bitcoin Rises," *Al Jazeera English*, March 13, 2013 <www.aljazeera.com>; Falkvinge, "Why Expensify Endorsing Bitcoin is a Really Big Deal: Social Virality," *Falkvinge on Infopolicy*, March 28, 2013 <falkvinge.net>.

> combat fraud, will also need to become a decentralized protocol. If someone wants to implement it all, they can.[59]

In fact Silk Road 2.0 opened on November 6, 2013, run by members of the original Silk Road community (including an anonymous leader, who took on Ulbricht's name "Dread Pirate Roberts").[60] And by May 2014, it was operating on a larger scale than the original Silk Road.[61] Silk Road 2.0 was shut down in its turn, and succeeded by Silk Road Reloaded which launched in January 2015. It is reportedly more resilient against surveillance, first because it accepts a wide array of blockchain currencies rather than just Bitcoin, and second because instead of Tor it relies on the I2p darknet .[62]

Two other developments relevant to the security of encrypted currency based on the Bitcoin architecture are Dark Wallet, a secure encrypted Bitcoin wallet developed by Cody Wilson (famous for developing the world's first 3D-printed gun[63], and Darkcoin, a Bitcoin knockoff that ties together each transaction with transactions by two other random users, and thus makes it far more difficult to deduce actual identities from a blockchain's history.[64]

But far more important than questions of security and opacity to the state is the question, which we raised at the outset, of Bitcoin's functional role as a store of value or specie-mimic. So if neither party to a transaction has Bitcoins from past transactions, or that they've bought with official currency, there is no source of liquidity for an exchange of services between them. Because Bitcoin isn't generated by the act of exchange itself, it's useless for the purpose served by traditional alternative currencies. The only thing it's good for, over and above conventional currency, is payments where confidentiality is at a premium:

> "At the moment there is no need to use Bitcoin, as anything that can be bought for BTC can be bought for 'real money' elsewhere," a Redditor writers. "Love it or hate it, Silkroad is the one example of Bitcoin actually being used as it was designed."[65]

In other words, Bitcoin is good for black marketeers who need an anonymous medium of exchange—and there's certainly nothing wrong with that!—and for secure, anonymous exchange between local trust networks. But it's maladapted to the primary purpose of an alternative currency: to provide liquidity for exchange between people in a local economy who need a way to transform their services into purchasing power in a stagnant economic environment where there's "no money."

Matt Slater observes that disintermediating banks is not enough; so long as it retains its essence as a commodity, money will always be manipulated and hoarded by the rich. What's

[59] Private email, October 2, 2013.

[60] Vitalik Buterin, "Silk Road Shut Down, Alleged Owner Arrested," *Bitcoin Magazine*, October 2, 2013 <bitcoinmagazine.com>.

[61] Joseph Cox, "Good News, Drug Users—Silk Road is Back!" *Vice*, November 6, 2013 <www.vice.com>.

[62] Mike Masnick, "Silk Road 2.0 Now Larger Than Silk Road Ever Was," *Techdirt*, May 6, 2014 <www.techdirt.com>.

[63] Darren Orf, "Silk Road Reloaded Ditches Tor for a More Anonymous Network," *Gizmodo*, January 11, 2015 <gizmodo.com>.

[64] William Sheppard, "Dark Wallet: New Weapons for Old Wars," *Center for a Stateless Society*, May 14, 2014 <c4ss.org>.

[65] Andy Greenberg, "Darkcoin, the Shadowy Cousin of Bitcoin, Is Booming," *Wired*, May 21, 2014 <www.wired.com>.

needed, above and beyond disintermediation, is zero-interest, peer-to-peer credit money—ideally based on blockchain technology and incorporating smart phone apps. If interest-free money, based on reputation, was prevalent, Slater says, the effects would include average mortages falling from thirty to ten years, the implosion of the portion of price reflecting embedded interest throughout the entire supply chain, and an average three-day work week.[66]

The Bitcoin protocoled has been forked, and led to dozens of competing specialized currencies piggybacked on the same basic architecture. According to Carl Miller, "A programmer can piggyback on the bitcoin code, customise it, and within a day give you your own currency. There are around 70 cryptocurrencies currently being traded in reasonable quantities."[67]

But all the Bitcoin knockoffs using the same blockchain architecture have the same problem as the original: they're commodities, units of stored value, that trade on the market, appreciate in price, and thereby create an incentive for speculation and hoarding rather than exchange.

To the extent that Bitcoin has a useful role in the post-state society, it will likely be under conditions of anonymous, long-distance trade where trust is low, with Bitcoin nested into a larger ecosystem that includes more trustworthy currencies that are pure units of exchange for most transactions. As Zacquary Xeper describes it:

> People use bitcoin because other people they trade with use bitcoin. If my town is running low on bitcoin but has a lot of resources to share internally, we can create our own local currency to free up bitcoin for importing and exporting. Or I could join an online network of artists who work on one another's projects, and we'd create our own internal currency that plays by whatever rules we need it to.
>
> There is no perfect monetary system for every situation. Bitcoin is not going to be the one world currency, and it doesn't need to be. A lot of people compare Bitcoin to the Internet, but it's more like CompuServe. It's the first of many digital, non-state currencies to come, that will all interoperate with each other in ways we can't even dream of yet.[68]

Perhaps the most promising thing about Bitcoin is not the currency itself, but the ways in which its blockchain ledger system might be used in conjunction with other currencies built on fundamentally different principles. For example,

> Former FCC Chairman Reed Hundt has proposed using the block chain technology as a way to create distributed networks of solar power on residential houses. The ledger would keep track of how much energy a given homeowner has generated and shared with others, or consumed, and it would enable the efficient organization of decentralized solar grids.[69]

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[66] Adrienne Jeffries, "Price of Bitcoin Still Dropping, Falls Below the Price of Mining," *BetaBeat*, October 17, 2011 <www.betabeat.com>.

[67] Matthew Slater, "What happens after the crypto-revolution?" *Matslats*, community currency engineer, June 12, 2014 <matslats.net>.

[68] Carl Miller, "Dogecoin, Coinye West and the rise of statement cryptocurrencies," *Wired.Co.UK*, January 13, 2014 <www.wired.co.uk>.

[69] Zacquary Xeper, "Bitcoin's Real Revolution Isn't Hard Money, It's Economic Panarchy," *Falkvinge on Infopolicy*, November 6, 2013 <falkvinge.net>.

Now imagine a ledger being used, similarly, as the accounting system for one of Thomas Greco's mutual credit-clearing networks, tracking each member's credits and debits.

Although Bitcoin itself is a deflationary, specie-like currency with all the drawbacks that entails, its blockchain might provide the accounting architecture to make a more just and egalitarian currency system more secure in its operations.

The Open Tabs system, launched in private alpha on Guy Fawkes Day 2011, is a sort of digitized version of Greco's credit-clearing networks.[70] As described by Melvin Carvalho,

> Opentabs.net is a free software tool to help the 99% of us be less dependent on abusive banking fees… Private alpha launch is this Saturday!
>
> Imagine you owe me money from, say, a train ticket that I bought for you. We then have two options: if it was a small amount, we can decide to forget about it (gift economy), but if it was any noteworthy sum, then we would probably end up using the Plain Old Banking System to settle this little peer-to-peer transaction. People use banking between friends, between house mates, and even between family members, and abusive banking fees play too big a role in our day-to-day life. This has to stop. With Opentabs.net there will be a third option: just tab it!
>
> You can tab amounts of money, beers, hours of work, bitcoins, books, whatever you want to leave unpaid. Just like when you tell the waiter in a bar to put a round of drinks "on your tab", Opentabs.net is a tool for having tabs open with your peers, until it cancels out against something else.
>
> The Opentabs.net web app does not make actual transactions. It is not a currency, and it is not a bank. It just helps you to cryptographically sign open tabs ("IOUs") between peers, as an alternative to actually executing a bank transfer. This way we can both forget about that train ticket you owe me, and strike it off against other transactions, until maybe at the end of the year we clear the balance once, and settle the tab. Just like tabs in a bar.[71]

The Metacurrency Project "seeks to build a platform and protocol standards that will allow for multiple and interoperable currencies to exist on the Internet."

> It was started by Eric Harris-Braun and Arthur Brock when we merged our efforts (Open Money and OS-Earth respectively) in developing the technology platform required for building the new and open economy.[72]

Conclusion

Right now we're in a period of flux, with a thousand flowers simultaneously in bloom and undergoing the natural selection process to determine which one becomes the standard encrypted

[70] David Bollier, "The Blockchain: A Promising New Infrastructure for Online Commons," *P2P Foundation Blog*, March 12, 2015 <blog.p2pfoundation.net>.

[71] <opentabs.net>.

[72] Melvin Carvalho, "Open Tabs—Decentralized Money Coming This Week," *The Next Net*, November 2, 2011 <groups.google.com>.

currency platform. The elements already exist; all that remains is for them to be combined in a single platform which reaches the takeoff point. As Center for a Stateless Society (C4SS) Media Coordinator Tom Knapp told me, by private email:

> What's needed is a killer P2P mutual credit app—RipplePay, only with no central server and set up so that mutual trust networks can be created in an encrypted, moreanonymous-at-length manner, e.g., I trust you and know who you are; someone else who trusts me can know that I trust you, and give you some trust for mutual credit purposes on that basis, WITHOUT knowing who you are; the non-anonymous trust webs ramify, encrypted and increasingly anonymized, out to several degrees of separation.
>
> The final piece is probably to make the whole thing somewhat accessible not only by smart phone, but loadable onto mag-strip "debit card" type devices and/or QR codes for those who don't have nearly 100%-reliable and redundant tech access themselves (or for their area, e.g. an agricultural village where only one person has a computer and Internet access via a phone tether) and need to be able to carry "physical cash" linked to the system.
>
> My guess is that all the tech pieces are already there, just waiting to be put together, to make this kind of thing happen. We've got public key encryption, distributed computing, the "loom" (for secure/redundant databasing?), mag-strip/QR readers for smartphones, and P2P networking tech…[73]

I suspect the ecology will work out, in the face of trial and error, into a tiered system. There will be a variety of local credit-clearing operations, LETS, etc, along Greco's lines, which are more for denominating simultaneous exchanges of services or future transactions than for storing value. Then there will be some encrypted store of accumulated value like bitcoin for exchanging surpluses between different systems, and for one-off dealings like illegal transactions in which anonymity is at a premium.

C4SS Sysadmin Mike Gogulski added the caveat that "local" might be less a function of geography than of "social graph proximity."[74] In any case, if the social graph is organized along the lines of de Ugarte's phyles or Robb's Economy as a Software Service, on an opt-in basis, it could include a pretty substantial number of people who are only casually acquainted if at all and who rely on their reputation within the system for their livelihood (as well as access to support platforms that are tied to membership).

See also

<p2pfoundation.net>.

[73] <www.metacurrency.org>;

[74] Thomas Knapp, private email, May 22, 2011.

7. Basic Infrastructures: Education and Credentialing

Introduction: Whom Do Present-Day Schools Really Serve?

Before we ask what would take the place of the existing model of institutionalized schooling, we should examine what function it really serves, and then ask ourselves: how much of that function do we even *want* served?

Despite the propaganda of the institutional schooling system's hangers-on, the primary function of institutionalized schooling has not been to serve the interests of students in pursuing their own, autonomous life-choices as effectively as possible. It has been, as an adjunct of the rest of the institutionalized power structure of the corporate state, to process human resources into the form that is most usable by corporate and state employers.

The current educational system is essentially a Taylorist-Fordist mass production system, geared to supply a uniform, standardized and graded input for corporate employers. According to Cathy Davidson, education

> changed drastically, radically… during the great era of Taylorist standardization of labor and of the laborer… Compulsory… education in the United States found it needed ways to measure children's educational productivity with the same uniform standardization as was being applied to workers on the Fordist assembly lines…
>
> And in the first burst of Fordist assembly line labor, educators took the apparatus of scientific labor management and turned it into scientific learning management. Virtually all of the protocols now in place for measuring academic success are based on Taylorist principles… [O]n a system of reducing human qualities to measurable, standardized productivity designed for the assembly line.[1]

Naveen Jain makes a similar comparison to mass-production industry's process of standardization.

> This process requires raw material that is grouped together based on a specific criteria. Those raw materials are then moved from one station to another station where an expert makes a small modification given the small amount of time given to complete their task. At the end of the assembly line, these assembled goods are standardized tested to see if they meet certain criteria before they are moved to the next advanced assembly line.
>
> We are using the same process to teach our kids today, grouping them by their date of manufacturing (age). We put them on an education assembly line every day, starting

[1] Mike Gogulski, private email, May 30, 2011.

> with one station that teaches them a certain subject before automatically moving them to the next class after a certain period of time. Once a year we use standardized testing to see if they are ready to move to the next grade…[2]

Likewise Joshua Davis:

> … the dominant model of public education is still fundamentally rooted in the industrial revolution that spawned it, when workplaces valued punctuality, regularity, attention, and silence above all else. (In 1899, William T. Harris, the US commissioner of education, celebrated the fact that US schools had developed the "appearance of a machine," one that teaches the student "to behave in an orderly manner, to stay in his own place, and not get in the way of others.") We don't openly profess those values nowadays, but our educational system—which routinely tests kids on their ability to recall information and demonstrate mastery of a narrow set of skills—doubles down on the view that students are material to be processed, programmed, and quality-tested.[3]

If traditional education is a mass-production system, it should be obvious who the customer is. You're probably working for one of them. The public schools and higher education system are not designed to facilitate learning. After all, Matt Yglesias notes, for a self-directed student who wants to learn something for her own purposes, the classroom learning environment is—to put it mildly—a suboptimal learning tool.

> Suppose you're curious about something. Like maybe articles about the recent banking crisis in Cyprus have made you curious about the island's history. The best first step, *by far*,is to go to the "History of Cyprus" Wikipedia page and read it. If you're still interested, maybe follow up with a book or two. Watching a person stand up and talk about Cyprus is pretty far down the list, whether you're watching the person live or on a video. It's true that if you want to learn how to tie a bowtie or to properly flip a Spanish tortilla, you may want to watch a video. The visual information is very helpful when you're talking about demonstrating a physical action. But to convey information? Reading is faster than listening, and buying a book—or checking one out from a library—has always been cheaper than paying college tuition, in part because when you go to college you still have to buy all these books.[4]

So, he asks, "Why didn't books kill the university?" The answer, again, is that the student is not the customer. The purpose of college is not to facilitate the student learning about Cyprus. It's to produce a human resource who's certified by one institution to have been processed to the specifications of another institution.

Even more fundamentally than merely processing students to be human resources of some institutional employer, the education system processes students to be managed by institutions *in general*, in every aspect of their lives.

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[2] Cathy Davidson, "Standardizing Human Ability," *DML Central*, July 30, 2012 <dmlcentral.net>.

[3] Naveen Jain, "Rethinking Education: Why Our Education System is Ripe for Disruption," *Forbes*, March 24, 2013 <www.forbes.com>.

[4] Joshua Davis, "How a Radical New Teaching Method Could Unleash a Generation of Geniuses," *Wired*, October 15, 2013 <www.wired.com>.

> Many students, especially those who are poor, intuitively know what the schools do for them. They school them to confuse process and substance… The pupil is thereby "schooled" to confuse teaching with learning, grade advancement with education, a diploma with competence, and fluency with the ability to say something new… Health, learning, dignity, independence, and creative endeavour are defined as little more than the performance of the institutions which claim to serve these ends, and their improvement is made to depend on allocating more resources to the management of hospitals, schools, and other agencies in question.[5]

Under the institutionalized values inculcated in the education system, students are taught "to view doctoring oneself as irresponsible, learning on one's own as unreliable, and community organization, when not paid for by those in authority, as a form of aggression or subversion… [T]he reliance on institutional treatment renders independent accomplishment suspect."[6]

As an example of the interlocking interests involved in processing the captive clientele of students, consider the ways the licensing cartels' credentialing requirements interacted with the interests of the higher education industry:

> The standardization of these professional guilds benefited undergraduate institutions immensely, a fact that was not lost on university administrators… The corporate-sponsored consolidation of the medical establishment changed undergraduate education from a choice to a necessity… "I want to be a doctor when I grow up," the child in the PSA says. "I want to go to college."[7]

It's impossible to overestimate the institutional role of "public" education in the corporate economy. Trained human resources are one of the most important subsidized inputs the state supplies to big business. Because corporate HR departments are provided, at state expense, with an abundant supply of technically trained and credentialed cogs to fit in their machines, enculturated to show up on time and to view taking orders from an authority figure behind a desk as normal, the state has already shifted the terms of the bargaining relationship such that employers simply state their requirements and would-be employees meet them as best they can. The conditions of employment and workplace culture are hardly even an issue for negotiation—or at least are far less of an issue than they would be if the educational system weren't geared to processing human raw material to corporate specs.

By 2012, Kevin Zeese and Margaret Flower argued that higher education had become "a commodity that produces automatons to serve big-finance capitalism, prevents campuses from being a source of societal transformation and creates modern indentured servants through debt slavery."[8]

Culturally right-wing libertarians often react with visceral outrage when college students demonstrate for free higher education or student loan amnesty. But their outrage is misplaced. The student demands arise in the context of a system in which, in collusion with employers, the state has made higher education a necessity rather than a luxury, and at the same time driven

[5] Matt Yglesias, "Why Didn't Books Kill the University?" *Slate Moneybox*, March 26, 2013 <www.slate.com>.

[6] Ivan Illich, *Deschooling Society* (New York, Evanston, San Francisco, London: Harper & Row, 1971), p. 1.

[7] *Ibid*., pp. 2–3.

[8] Cory Doctorow, "Credentialism is Just as Screwed Up as Corporatism," *Boing Boing*, July 7, 2012 <boingboing.net>.

its costs through the roof. This state of affairs, in which credentialing is necessary for decent entry-level jobs and also costs $100,000 or more, is entirely a creation of the corporate state. As Keith Taylor writes:

> A great deal of research has shown that people used to be able to move upward in corporations and government, facilitated in part by internal educational programs… These workplaces then require university credentials/degrees in order to land simple entry level jobs or move up one rung of the professional ladder…
>
> In other words professional workplaces have externalized their costs onto society. The barrier-to-entry (time lost at work, time spent hitting the books, and cost for tuition) for even low-skilled, low-paying jobs has increased.
>
> Universities are playing this game too. Universities are paying their administrators loads of money while holding campus wages down. In a public forum, President Hogan of the University of Illinois stated without remorse that while it was difficult to keep staff wages down, he had to pay administration the best money possible to get the best talent possible; I guess that logic doesn't carry over to support staff and professors. By the way, President Hogan makes over $620k a year for living in central Illinois, good work if you can get it.
>
> Have a glance at the University of California system's administrator pay packages. The statewide board of trustees has drastically cut educational programs in the humanities and raised tuition. How did the UC Administration cope? They got fat raises…
>
> Administrators also give out sweetheart contracts to their university-business inner circles. Just try to get a copy of your local university's vendor contract and watch their reaction as they attempt to keep you from what is by all measures public information. Part of the reason universities were so reluctant to enter into fair trade certified buying programs for university apparel is the reluctance to open the books to the general public. Their desire to milk the system means more overhead for others to pay in the form of blood, sweat and tears.
>
> Have no doubt about it, the student loan venders are making bank off of this downward spiral…
>
> One would think that with all the rhetoric used by university administrators extolling their service orientation toward the student populace that they would come out swinging on behalf of students with crippling debt. That is until one realizes that universities are now heavily reliant on their endowments. Guess who manages the endowment funds? That's right, many of the same people who also divvy out student loans. You take away the student loan cash cow, and you severely hit the capacity of endowments to provide a bloated return on investment…[9]

I would also point out the gross asymmetry in incentives for student loan lenders and borrowers, respectively. Repayment of principal and interest to lenders is guaranteed by the federal

[9] Kevin Zeese and Margaret Flower, "Is Education a Human Right or a Privilege for the Wealthy?" *truth.out.org*, December 13, 2012 <truth-out.org>.

government; meanwhile, students are barred from even Chapter 13 bankruptcy regardless of what catastrophic event befalls them.

It's an example of what Ivan Illich called "radical monopoly"—the state subsidizes a certain high-overhead, capital-intensive, and costly way of doing things, and then turns that high-cost input into a necessity for everyone by crowding out the alternatives.

The students may be wrong about the solution—free universal higher education, by itself, would just further inflate the credentialing requirements for basic employment and increase the tyranny of professionalism. But they're not the spoiled ingrates those on the Right make them out to be.

The system is riddled with all sorts of other artificial scarcities, like the barriers—which Illich discusses—against the low-cost transfer of knowledge and skill.

> Potential skill teachers are never scarce for long because, on the one hand, demand for a skill grows only with its performance within a community and, on the other, a man exercising a skill could also teach it. But, at present, those using skills which are in demand and do require a human teacher are discouraged from sharing these skills with others. This is done either by teachers who monopolize the licenses or by unions which protect their trade interests…
>
> Skill teachers are made scarce by the belief in the value of licenses. Certification constitutes a form of market manipulation and is plausible only to a schooled mind.[10]
>
> Converging self-interests now conspire to stop a man from sharing his skill. The man who has the skill profits from its scarcity and not from its reproduction… The public is indoctrinated to believe that skills are valuable and reliable only if they are the result of formal schooling. The job market depends on making skills scarce and on keeping them scarce, either by proscribing their unauthorized use and transmission or by making things which can be operated and repaired only by those who have access to tools or information which are kept scarce.
>
> Schools thus produce shortages of skilled persons…
>
> Insisting on the certification of teachers is another way of keeping skills scarce…

Marcus Winters pointed out the absence of any correlation between teacher credentialing and effectiveness, and questioned the need for it. He proposed

> removing the barriers to becoming a teacher, suggesting that since there is no correlation between certification and teacher effectiveness, anyone with a college degree should be given the opportunity to teach if they are able to find someone to hire them. The fact is that many of us who went through teacher preparation and certification programs know they were not very helpful when it comes to the realities of the classroom. It is no surprise then that such certification has little impact on student success.
>
> I think Winter's idea deserves some attention, particularly in the case of secondary studies, but I wonder why he believes that a college degree should be required…

[10] Keith Taylor, "The Student Loan Debt System," *Center for a Stateless Society*, December 9, 2011 <c4ss.org>.

> Academic inflation is only a recent phenomena [sic]. Historically the majority of careers… did not require such certification for success…
>
> What if instead of requiring individuals to jump through certification hoops, we filled our secondary schools with real-world photographers, journalists, scientists, businesswomen, and others. These people also might not necessarily be employed full-time at the school. Instead, they may perhaps teach a class or two each semester. They may take on the important charge of connecting students with mentors in their field, helping them grow their personal learning networks, and supporting them in acquiring apprenticeship and/or internship opportunities.[11]

As our discussion of interlocking bureaucracies above already suggested, higher education also serves the needs of the administrative bureaucracies that run it. Matt Yglesias cites data showing that the number of college administrators increased 60 percent from 1993 to 2009—10 times the growth rate for tenured faculty—and spending on administration at the 198 leading U.S. universities rose almost twice as fast as funding for research and teaching from 1993 to 2007.

> The issue is that schools are finding that they can get away with charging high prices. Since colleges are non-profits, ability to charge high prices doesn't lead to dividend payouts or the acquisition of big cash stockpiles. The money gets spent. And the trend lately has been to spend it on administrators.
>
> All of which is one reason I'm skeptical that you can really do much on the college "cost" front by offering more tuition subsidies. At any given level of subsidy, schools are going to charge families what they can afford to pay and then they're going to take that money and spend it on the stuff that the people running the school want to spend it on.[12]

The education system is a 20th century mass-production age dinosaur in another sense. Like industrial and state bureaucracies, it can only function in an environment of predictability and stability. The "learning" imparted in the bureaucratic school system is only useful for those with carefully managed lives. It is, in Nassim Taleb's phrasing, fragile: that is, useless in the face of Black Swan events that can't be anticipated. Given an uncontrolled environment, it is impossible to create a planned curriculum that anticipates the kinds of knowledge that might be needed for a wide range of contingencies. An anti-fragile educational curriculum, rather than attempting to plan learning for a specific set of contingencies, must evolve organically through self-direction, under a wide range of experiences and spontaneously developing interests, and build a wide variety of fortuitous interconnections between assorted bits of knowledge.

> The biologist and intellectual E.O. Wilson was once asked what represented the most hindrance to the development of children; his answer was the soccer mom… [S]occer moms try to eliminate the trial and error, the antifragility, from children's lives, move them away from the ecological and transform them into nerds working on

[11] Illich, *Deschooling Society*, pp. 14–15.
[12] *Ibid*., pp. 89–90.

> pre-existing… maps of reality. Good students, but nerds—that is, they are like computers except slower. Further, they are now totally untrained to handle ambiguity.[13]
>
> This made me focus on what an intelligent antistudent needed to be: an autodidact—or a person of knowledge compared to the students called "swallowers" in Lebanese dialect, those who "swallow school material" and whose knowledge is only derived from the curriculum…
>
> [When] people… [are] selected for trying to get high grades in a small number of subjects rather than follow their curiosity[,] try taking them slightly away from what they studied and watch their decomposition, loss of confidence and denial.[14]

Imagine, instead of our present unholy alliance between the bloated educational bureaucracies and bloated HR bureaucracies, an educational system that treated pupils as customers—or owners!—rather than a product, and was geared to serving their perceived interests and learning needs. Imagine a bottom-up, userdriven curriculum. Under such a system, without employer access to a supply of ready-made human capital produced to order, the prerequisites for employment and conditions of work might actually be a contested issue.

So unlike most analyses of the educational system and proposals for educational "reform," we are not starting from an assumption of the corporate economy and its personnel needs as a given, and then trying to figure out how the schools could better meet corporate employers' needs to "be more competitive in the global economy," and better train pupils for "success in their working lives."

This approach is typified, at its most extreme, by David Coleman—apostle of the "common core standards" cooked up by the Bill and Melinda Gates Foundation in cahoots with the Department of Education: "[A]s you grow up in this world you realize people really don't give a shit about what you feel or what you think… It is rare in a working environment that someone says, 'Johnson, I need a market analysis by Friday but before that I need a compelling account of your childhood.'"[15]

Well, he at least gets points for honesty. But if nobody in our working environment gives a shit what we feel or think, that makes it all the more imperative that we pay attention ourselves to what we feel and think. And if—as Coleman admits—those in charge of the workplace don't give a shit about us, then explicitly defining the mission of the state school system as shaping human personalities and characters to suit the needs of employers that view them as disposable production inputs is morally equivalent to loading people on boxcars to Auschwitz. It amounts to an explicit admission that students are the product, not the customers, of the educational system.

The students themselves certainly perceive this, which may explain a lot about why some kids do badly in school. Consider the example of Marina Gorbis's son Greg, after he transferred from a progressive school based on self-directe learning to a conventional high school. Within a year or so of the change, learning went "from being a joyful, often invisible part of the fabric of his daily life to being a chore, something he did because someone else was forcing him to, something he would be judged on and for which he would be either rewarded or punished."[16]

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[13] "Could the Key to Teacher Effectiveness Mean Dropping Certification Requirements?" *The Innovative Educator*, December 14, 2011 <theinnovativeeducator.blogspot.com>.

[14] Matthew Yglesias, "The Administrator Hiring Spree," *Slate Moneybox*, April 11, 2013 <www.slate.com>.

[15] Nassim Taleb, *Antifragile: Things That Gain From Disorder* (New York: Random House, 2012), p. 242.

[16] *Ibid*., pp. 244–245.

Since the existing system obviously deserves to be condemned as unfit for human beings, what will we build in its place? Unlike most analyses, we will not hold everything constant *except* education, and then figure out how to "reform" education so as better to serve the needs of the other institutions.

Instead, we will assume a society which has come into being as the culmination of *all* the trends underway at this minute: the replacement of large, centralized, hierarchical employers as the dominant economic form by small, largely family- or cooperatively owned, neighborhood micromanufacturing enterprises, truck farms and permaculture operations, commons-based peer producers, mutuals, and informal and household enterprises. The destruction of large-scale bureaucratic enterprises and their monopsony power in the labor market, and the rise of networked learning alternatives, mean that bargaining power will become more equal and credentialing standards will be negotiated rather than declared by fiat. In such a society, the interaction of the training and credentialing requirements of business enterprises with the educational interests of would-be employees will be a matter for negotiation, on a case-by-case basis.

I. Alternative Models

Robert Pirsig, in the "Church of Reason" passage of *Zen and the Art of Motorcycle Maintenance*, describes the functioning of an education system when it becomes a tool for self-directed learning, rather than processing human resources for institutional consumers. Phaedrus speculated on the likely career of a cramming, résumé-padding "good student" who was exposed for the first time to an educational system in which grades and degrees had been eliminated. Absent the motivation of grades, the student would gradually cease attending lectures and completing assignments, and finally drop out.

> But what had happened? The student, with no hard feelings on anybody's part, would have flunked himself out. Good! This is what should have happened. He wasn't there for a real education in the first place and had no real business there at all. A large amount of money and effort had been saved and there would be no stigma of failure and ruin to haunt him the rest of his life. No bridges had been burned.
>
> The student's biggest problem was a slave mentality which had been built into him by years of carrot-and-whip grading, a mule mentality which said, "If you don't whip me, I won't work." He didn't get whipped. He didn't work. And the cart of civilization, which he supposedly was being trained to pull, was just going to have to creak along a little slower without him.
>
> This is a tragedy, however, only if you presume that the cart of civilization, "the system," is pulled by mules. This is a common, vocational, "location" point of view, but it's not the Church attitude.
>
> The Church attitude is that civilization, or "the system" or "society" or whatever you want to call it, is best served not by mules but by free men. The purpose of abolishing grades and degrees is not to punish mules or to get rid of them but to provide an environment in which that mule can turn into a free man.
>
> The hypothetical student, still a mule, would drift around for a while. He would get another kind of education quite as valuable as the one he'd abandoned, in what used

> to be called the "school of hard knocks." Instead of wasting money and time as a high-status mule, he would now have to get a job as a low-status mule, maybe as a mechanic. Actually his real status would go up. He would be making a contribution for a change. Maybe that's what he would do for the rest of his life. Maybe he'd found his level. But don't count on it.
>
> In time… six months; five years, perhaps… a change could easily begin to take place. He would become less and less satisfied with a kind of dumb, day-to-day shopwork. His creative intelligence, stifled by too much theory and too many grades in college, would now become reawakened by the boredom of the shop. Thousands of hours of frustrating mechanical problems would have made him more interested in machine design. He would like to design machinery himself. He'd think he could do a better job. He would try modifying a few engines, meet with success, look for more success, but feel blocked because he didn't have the theoretical information. He would discover that when before he felt stupid because of his lack of interest in theoretical information, he'd now find a brand of theoretical information which he'd have a lot of respect for, namely, mechanical engineering.
>
> So he would come back to our degreeless and gradeless school, but with a difference. He'd no longer be a grade-motivated person. He'd be a knowledge-motivated person. He would need no external pushing to learn. His push would come from inside. He'd be a free man. He wouldn't need a lot of discipline to shape him up. In fact, if the instructors assigned him were slacking on the job he would be likely to shape them up by asking rude questions. He'd be there to learn something, would be paying to learn something and they'd better come up with it.
>
> Motivation of this sort, once it catches hold, is a ferocious force, and in the gradeless, degreeless institution where our student would find himself, he wouldn't stop with rote engineering information. Physics and mathematics were going to come within his sphere of interest because he'd see he needed them. Metallurgy and electrical engineering would come up for attention. And, in the process of intellectual maturing that these abstract studies gave him, he would he likely to branch out into other theoretical areas that weren't directly related to machines but had become a part of a newer larger goal. This larger goal wouldn't be the imitation of education in Universities today, glossed over and concealed by grades and degrees that give the appearance of something happening when, in fact, almost nothing is going on. It would be the real thing.[17]

That sounds a lot like Brazilian teacher Paulo Freire's pedagogical philosophy, in which students "meet around a problem chosen and defined by their own initiative." He

> discovered that any adult can begin to read in a matter of forty hours if the first words he deciphers are charged with political meaning. Freire trains his teachers to move into a village and to discover the words which designate current important issues, such as the access to a well or the compound interest on the debts owed to

[17] Sam Smith, "The war on education (and reading): David Coleman's common core of nonsense," *Undernews*, November 4, 2011 <prorevnews.blogspot.com>.

> the *patron.* In the evening the villagers meet for the discussion of these key words. They begin to realize that each word stays on the blackboard even after its sound has faded. The letters continue to unlock reality and to make it manageable as a problem. I have frequently witnessed how discussants grow in social awareness and how they are impelled to take political action as fast as they learn to read. They seem to take reality into their hands as they write it down.[18]

Or in Freire's own words:

> Knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other.[19]
>
> Liberating education consists in acts of cognition, not transferrals of information.[20]

Compare this to the working-class discussion groups in early industrial Britain, where newly literate or perhaps illiterate workmen gathered to hear passages read from some radical periodical or from the works of Thomas Paine, and to discuss them. E.P. Thompson relates an especially vivid example of the learning path of north country coal miners, whose self-education and radicalization quickly fed on one another to reach critical mass (as evidenced by this note left in the house of a supervisor during an 1831 strike):

> I dinna pretend to be a profit, but I naw this, and lots of ma marrows na's te, that wer not tret as we owt to be, and a great filosopher says, to get noledge is to naw wer ignerent. But weve just begun to find that oot, and ye maisters and owners may luk oot, for yor not gon to get se much o yor own way, wer gan to heve some o wors now…

Networked learning writer Will Richardson, in an open letter to his kids, takes a similar "life as classroom" approach:

> I promise to support you for as long as I can in your quest to learn after high school, whatever that might look like. I'll do everything I can to help you find what your passions are and pursue them in whatever ways you decide will allow you to learn as much as you can about them. I'll help you put together your own plan to achieve expertise in that passion, and that plan may include many different activities and environments that look nothing like (and in all likelihood will cost much less than) a traditional college experience. Some of your plan may include classrooms, some may include training or certification programs. But some may also include learning through online video games, virtual communities, and informal networks that you will build around your interests, all moving you further along toward expertise…

[18] Marina Gorbis, *The Nature of the Future: Dispatches From the Socialstructured World* (New York, London, Toronto, Sydney, New Delhi: Free Press, 2013), pp. 73–75.

[19] Robert M. Pirsig, *Zen and the Art of Motorcycle Maintenance: An Inquiry Into Values* (New York: William Morrow Publishing Company, 1979). Online version courtesy of Quality page, Virtual School Distributed Learning Community <www.virtualschool.edu>.

[20] Illich, *Deschooling Society*, pp. 18–19.

> And throughout this process, I will support you in the creation of your learning portfolio, the artifact which when the time comes, you will share to prospective employers or collaborators to begin your life's work. (In all likelihood, in fact, you will probably find these people as a part of this process.) Instead of the piece of paper on the wall that says you are an expert, you will have an array of products and experiences, reflections and conversations that show your expertise, show what you know, make it transparent. It will be comprised of a body of work and a network of learners that you will continually turn to over time, that will evolve as you evolve, and will capture your most important learning.[21]

Universities originally came into being through the efforts of self-directed students operating on something like Pirsig's model. The University of Bologna, for example, started as a sort of guild or cooperative organized by individual learners. According to Roderick Long:

> In the 12th century, Bologna was a center of intellectual and cultural life. Students came to Bologna from all over Europe to study with prominent scholars. These individual professors were not originally organized into a university; each one operated freelance, offering courses on his own and charging whatever fees students were willing to pay. If a professor was a lousy teacher or charged too much, his students would switch to a different professor; professors had to compete for students, and would get paid only if students found their courses worth taking.
>
> Bologna soon became crowded with foreign students. But being a foreigner in Bologna had its disadvantages; aliens were subject to various sorts of legal disabilities…
>
> The foreign students therefore began to band together, for mutual insurance and protection, into associations called "nations," according to their various nationalities; one "nation" would be composed of all English students, another of all French students, and so on. If any student needed assistance… , the other members of his "nation" would chip in to help. Each was willing to pledge a contribution to the group for this purpose, in exchange for the assurance that he would himself be able to draw on these pooled resources in time of need.
>
> In time the different "nations" found it useful to spread the risk still more widely by combining together into a larger organization called a *universitas.* This was not yet a university in the modern sense; the closest English equivalent to the Latin *universitas* is "corporation." The *universitas* was essentially a cooperative venture by students; the professors were not part of the *universitas.* The *universitas* was democratically governed; regular business was conducted by a representative council consisting of two members from each "nation," while important matters were decided by the majority vote of an assembly consisting of the entire membership of the *universitas…*
>
> Once the *universitas* had been formed, the students now had available to them a means of effective collective bargaining with the city government… The students were able to exercise considerable leverage in their disputes with the city because if

[21] Paolo Freire. *Pedagogy of the Oppressed.* 30th anniversary edition. Translated by Myra Bergman Ramos. Introduction by Donaldo Macedo (New York and London: Continuum, 1970, 2000), p. 72.

> the students decided to go on "strike" by leaving the city, the professors would follow their paying clients and the city would lose an important source of revenue. So the city gave in, recognized the rights of foreign students, and granted the *universitas* civil and criminal jurisdiction over its own members. Although the *universitas* was a purely private organization, it acquired the status of an independent legal system existing within, but not strictly subordinate to, the framework of city government.
>
> How did the *universitas* of Bologna become the University of Bologna? Well, after all, this new means of effective bargaining with the city could also be used as a means of effective collective bargaining with the *professors.* The students, organized into a *universitas,* could control professors by boycotting classes and withholding fees. This gave the *universitas* the power to determine the length and subject-matter of courses, and the fees of professors. Soon professors found themselves being hired and fired by the *universitas* as a whole, rather than by its individual members acting independently. At this point we can finally translate *universitas* as "University."…
>
> The professors were not completely powerless; they formed a collectivebargaining association of their own, the College of Teachers, and won the right to determine both examination fees and requirements for the degree. A balance of rights thus emerged through negotiation: the obligations of professors were determined by the students, while the obligations of students were determined by the professors. It was a power-sharing scheme; the students, however, continued to act as the dominant partner, since they were the paying clients and collectively carried more clout.[22]

Other major European universities, as well, started as either students' or professors' guilds.

And today, students and precarious faculty at legacy universities around the world are becoming increasingly active in their demands to reshape their institutions in a radically democratic form. Combating the neoliberal restructuring of the university, in which the number and salaries of administrators explode while most teaching positions are assigned to low-paid adjuncts or graduate assistants, is a global rallying cry. In 2015 there has been an increasing number of high-profile strikes by graduate assistants and adjunct faculty at univerities around the world, with a strong worldwide support and media advocacy network.

Once we abandon the idea of schools as institutions run by "educational professionals," and of learning as an activity that takes place at a designated location under the supervision of such professionals, the possibilities for linking individual learners to sources of knowledge are almost infinite.

If the institutionalized educational system is a mass-production factory with the human resource as its product and the employer as its customer, an educational system organized around the agency of the learner will be a lean, demand-pull system. Rather than moving human beings to an assembly line to be processed, it will move knowledge to the point of consumption, when and where it is needed. If young people are alienated from the old mass-production schools, they understand instinctively how to use new networked learning tools for their own autonomous purposes. Mimi Ito writes:

> It is no wonder my daughter wants to mess around with the guitar and the Internet and pursue some interests at a pace that doesn't feel like the relentlessly scheduled

[22] *Ibid*., p. 77.

> pressure of school and structured activities. For her, the Internet has been a lifeline for selfdirected learning and connection to peers. In our research, we found that parents more often than not have a negative view of the role of the Internet in learning, but young people almost always have a positive one.
>
> When we interview young people, they will talk about how the Internet makes it easy for them to look around and surf for information in low risk and unstructured ways. Some kids immerse themselves in online tutorials, forums, and expert communities where they dive deep into topics and areas of interest, whether it is fandom, creative writing, making online videos, or gaming communities…
>
> … I am proud of her for managing a rigorous course of study both in school and out of school, but I'm also delighted that she finds the time to cultivate interests in a self-directed way that is about contributing to her community of peers. The Internet and her friends have offered my daughter a lifeline to explore new interests that are not just about the resume and getting ahead of everyone else. In today's high-pressure climate for teens, the Internet is feeling more and more like one of the few havens they can find for the lessons that matter most.[23]

Sugata Mitra's model of self-directed learning, in which students are given free access to laptops and left alone to explore, individually or cooperatively as they see fit, is a high-tech update of the Montessori approach. It was put into practice by Sergio Juárez Correa in a run-down, impoverished school in Matamoros, Mexico. The result was a 12-year-old girl who scored first in mathematics out of all the students in Mexico, and ten more students who scored at the 99.99th percentile.[24] It's hard to imagine a better answer to the elitists who say "self-directed learning is great for students who are capable of benefiting from it, but what about the majority of ordinary kids who need the structure and discipline of the traditional system?"

Proudhon, writing in the mid-19th century, wrote of breaking down barriers between the rest of society in ways that anticipated Illich. His provisions for technical training, for example, relied heavily on linking the public education system with the workers' associations, the latter serving as

> both centers of production and centers for education… Labor and study, which have for so long and so foolishly been kept apart, will finally emerge side-by-side in their natural state of union.[25]

Contemporary ideas of p2p education, likewise, usually envision some sort of horizontal integration between learning groups and production groups in an organic p2p culture (although the quote below arguably puts heavy emphasis on what we would call post-secondary educational functions rather than primary education).

> The P2P mode of production overcomes the division between doing and knowing that characterizes the currently hegemonic system. Project development communi-

[23] E. P. Thompson, *The Making of the English Working Class* (New York: Vintage Books, 1961, 1966), p. 715.

[24] Will Richardson, "Dear Kids, You Don't Have to Go to College," *Weblogg-ed*, November 7, 2006 <weblogg-ed.com>.

[25] Roderick Long, "A University Built By the Invisible Hand," *Formulations* (Spring 1994) <www.freenation.org>.

ties (OSE, WikiSpeed, Mozilla, etc.) generate both "products" and the research and innovation associated with them.

- "Schools of the Commons"… would make sense as facilitators of free research on general social theory and basic scientific research. They would not offer training or degrees, but they would generate pedgaogical materials of all kinds by themselves or with the help of specialized work groups.
- The local learning groups would use these materials, as well as those developed by the development communities, to become, hand in hand with the local production groups, facilitators of local P2P culture everywhere, by building the structure that would facilitate access to pedgaogical materials and tutors for those who would like to learn.[26]

Over forty years ago, Illich envisioned low-tech "learning exchanges" or "educational webs" based on widespread distribution of small tape recorders/players, educational tapes, and local peer-matching services that maintained lists of teachers with skills or subject matter to share and students with learning goals and then facilitated connections between them.[27]

> We must conceive of new relational structures which are deliberately set up to facilitate access to these resources for the use of anybody who is motivated to seek them for his education. Administrative, technological, and especially legal arrangements are required to set up such web-like structures.[28]
>
> The operation of a peer-matching network would be simple. The user would identify himself by name and address and describe the activity for which he sought a peer. A computer would send him back the names and addresses of all those who had inserted the same description. It is amazing that such a simple utility has never been used on a broad scale for publicly valued activity…
>
> A complement to the computer could be a network of bulletin boards and classified newspaper ads, listing the activities for which the computer could not produce a match. No names would have to be given. Interested readers would then introduce their names into the system…[29]

Now imagine the same functions organized today through the Internet.

The integration of education into the community can be physical, as well as functional. In Claude Lewenz's Villages, classroom space—rather than being concentrated in some centrally located specimen of Stalinist architecture and serviced by a bus system—is decentralized throughout the community. He quotes Christopher Alexander's Pattern No. 18 (from *A Pattern Language*):

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[26] Mimi Ito, "What Teens Get About the Internet That Parents Don't," *The Atlantic*, March 8, 2013 <www.theatlantic.com>.

[27] Joshua Davis, *op. cit.*

[28] *On the Political Capacity of the Working Classes* (1865), in *Selected Writings of Proudhon.* Edited by Stewart Edwards. Translated by Elizabeth Fraser (Garden City, N.Y.: Anchor, 1969), pp. 86–87; *General Idea of the Revolution in the Nineteenth Century.* Translated by John Beverly Robinson (New York: Haskell House Publishers, Ltd., 1923, 1969 [1851]), p. 274.

[29] "The system of intellectual production of the p2p mode of production," *Las Indias in English*, July 7, 2012 <english.lasindias.com>.

> Instead of the lock-step of compulsory schooling in a fixed place, work in piecemeal ways to decentralise the process of learning and enrich it through contact with many places and people all over the city: workshops, teachers at home or walking through the city, professionals willing to take on the young as helpers, older children teaching younger children, museums, youth groups travelling, scholarly seminars, industrial workshops, old people and so on.

"The Village," Lewenz writes, "serves as a life-long classroom." By decentralizing control of education to the primary community of a few thousand people, the Village can greatly reduce overhead. Lewenz again quotes Alexander on the elimination of expenses from overpriced, centrally located buildings and administrative salaries, and the use of the savings to reduce student-teacher ratios down to ten or so. He recommends building small schools, one at a time, located in the public part of the community, "with a shopfront and three or four rooms."[30]

The relevance to this of the platform-module architecture seems obvious.

The old educational system was a classic example of the kinds of authoritarian institutions described by Paul Goodman in *People or Personnel* Ivan Illich in *Tools for Conviviality*: characterized by a bureaucratic, hierarchical culture, enormous overhead, cost-plus accounting, and markups of 300% or more over and above the costs required by the purely technical considerations involved in doing anything.

As John Robb has pointed out, a system of higher education that fully exploited all the possibilities of new forms of organization—networked platforms and open-source materials—could make the equivalent of a college education available for $20 a month.[31]

One central principle that's apt to govern any liberatory, user-driven model of education is—in Michael Staton's phrase—the disaggregation or unbundling of services currently performed by the education system.

> The Internet has challenged business models that serve bundled services by offering unbundled alternatives. Offering direct access to targeted services tends to disintermediate (the process of cutting out middlemen between producers and consumers) institutions whose value proposition relies on placing a premium on the aggregation of services and resources. We have seen these forces disrupt the music and journalism industries, and similar forces are beginning to affect the education sector.[32]

Besides housing and all the ancillary services associated with colleges, this will mean unbundling the curriculum itself. The current credentialling system offers curricula—designed by higher education bureaucracies in collaboration with human resources bureaucracies—presented as a package deal. In order to get a credential acceptable to a corporate employer, the student is typically forced to pay for an entire curriculum of 100-plus credit-hours mostly unrelated to the skill she'll actually be using. Here's how Daniel de Vise describes unbundling:

> For thousands of years now, the university has been the middleman of the higher education system. The university provided the needed infrastructure, the branding,

[30] Illich, *Deschooling Society*, pp. 76–77.
[31] *Ibid*., p. 78.
[32] *Ibid*., p. 93.

and an easy route to a white collar job or graduate school. In return, students had to agree to taking courses that the faculty thought were needed. The courses could be recommended because they would help the student understand the subject, or for other completely unrelated reasons (to make them a "well rounded" person, or to give a faculty colleague some students to teach). Faculty, on the other hand, did not have to look for students, could bask in the reflected glory of the university name, and still had a regular paycheck. Accreditors were the accountants of academia, making sure that "quality" was maintained.

The astonishing pace of technology in the last few years has changed the landscape of academia completely in several ways:

(1) There is an excess of information available. Instructors are no longer required to be a source of information. Rather, they curate existing information.

(2) Students today want practical skills that they can use to get a job, and not necessarily a degree…

(3) Infrastructure, at least in the West, has improved to the extent that anyone with a video camera and basic tools can design, deliver, and take payment for courses.

(4) Students are no longer just your typical 18–22 year olds. They can be a mom who wants to get a certification, a soldier in Afghanistan, or an office worker in Hanoi…

(5) Technology has eliminated a lot of the manual work teachers (grading) and administrators (registration) used to do.

(6) Students want short courses that utilize all the technology available (multimedia, social media, games).

This has created a situation where technology is freely available and can let anyone teach or learn: students who want flexibility, teachers who can now become one-man or -woman universities. Yet many schools are still stuck in the past.

Radical changes in educational content and delivery mechanisms will lead to an unbundling of the university as we know it.[33]

David Blake argues that unbundling will amount to a long tail in the education market.

The traditional degree, with its four-year time commitment and steep price tag, made sense when the university centrally aggregated top academic minds with residency-based students. Education required extensive logistics, demanding deep commitment from students worthy of being rewarded with the all-or-nothing degree.

But education isn't all-or-nothing. College and its primary credential, the degree, needn't be either. The benefit of modern, online education is that the burden of logistics and infrastructure are greatly reduced, allowing for the potential of a fluid, lifelong education model. The problem, to date, is that formal, online education is still being packaged in all-or-nothing degree programs, falsely constraining education innovation. The New Republic writes, "Online for-profit colleges haven't disrupted the industry because while their business methods are different, their product—traditional credentials in the form of a degree—is not."

[33] Claude Lewenz, *How to Build a Village* (Auckland: Jackson House, 2007), p. 119.

> Technology creates efficiencies by decreasing unit size while increasing utility. To falsely constrain anything to historically larger canons is to render technology impotent to do what it does best.
>
> Clay Christensen predicts, "I bet what happens as [higher education] becomes more modular is that accreditation occurs at the level of the course, not the university; so they can then offer degrees as collection of the best courses taught in the world. A barrier that historically kept people out of university [is] blown away by the modularization and the change in [course-by-course] accreditation."[34]

The great majority of education at present is probably driven either by the signaling needs of HR departments (is able to show up on time, take orders, and put up with bullshit) or the need for licensing cartels to erect artificial barriers against practitioners. When most production is uncoupled from institutional employment, and individual learning programs and course selections are driven by the needs of the student, we can expect course selections to be made on an ad hoc basis and tailored to the immediate requirements of the situation (as illustrated by Pirsig's lifelong learner). As Stephen Downes argues,

> Earning a degree will, in such a world, resemble less a series of tests and hurdles, and will come to resemble more a process of making a name for oneself in a community. The recommendation of one person by another as a peer will, in the end, become the standard of educational value, not the grade or degree.[35]

II. Potential Building Blocks for an Open Alternative

The industrial model of transporting human resources to a central processing site is just plain stupid, at a time when information can be transported anywhere more cheaply than tap water.

Why pay the salary of the teaching assistant who teaches a first- or secondyear class in an enormous lecture hall—and the overhead costs of the physical plant and utilities that host the class—when lectures by the greatest minds in a field can be replicated at zero marginal cost for millions of students, via streaming video?[36] If there's any justification for it, it certainly doesn't lie—as any college student can tell you—in the greater one-on-one interaction or tailoring of material to individual needs provided in the auditorium class.

There's no disputing that an intimate seminar of a few students conducted by a leading scholar in her field is a unique experience—like sitting on the opposite end of a log from Mark Hopkins. But the large auditorium class of several hundred students—even one taught by a first-class scholar—is a different matter. As Clay Shirky describes his education:

> four years at Yale, in an incredible intellectual community, where even big lecture classes were taught by seriously brilliant people. Decades later, I can still remember my art history professor's description of the Arnolfini Wedding, and the survey

[34] John Robb, "The Education Bubble," *Global Guerrillas*, April 13, 2011 <globalguerrillas.typepad.com>.

[35] Michael Staton, "Disaggregating the Components of a College Degree," *American Enterprise Institute*, August 2, 2012 (draft), p. 6.

[36] Daniel de V ise, "Guest post: An 'Arab Spring' of free online higher education," *Washington Post*, February 3, 2012 <www.washingtonpost.com>.

> of modern poetry didn't just expose me to Ezra Pound and HD, it changed how I thought about the 20th century.
>
> But you know what? Those classes weren't like jazz compositions. They didn't create genuine intellectual community. They didn't even create ersatz intellectual community. They were just great lectures: we showed up, we listened, we took notes, and we left, ready to discuss what we'd heard in smaller sections.
>
> And did the professors also teach our sections too? No, of course not; those were taught by graduate students. Heaven knows what they were being paid to teach us, but it wasn't a big fraction of a professor's salary. The large lecture isn't a tool for producing intellectual joy; it's a tool for reducing the expense of introductory classes.[37]

And of course networked collaborative platforms—think of blogs and wikis as the grandfather and Google's abortive Wave as the father—make it eminently feasible for students to interact with their instructors and with each other. Robb suggests the potential for gaming architectures as an educational tool.

> Online games provide an environment that connects what you do (work, problem solving, effort, motivation level, merit) in the game to rewards (status, capabilities, etc.). These games also make it simple to get better (learn, skill up, etc.) through an intuitive just-in-time training system. The problem is that this is virtual fantasy.
>
> … In short, turn games into economic darknets that work in parallel and better than the broken status quo systems. As in: economic games that connect effort with reward. Economic games with transparent rules that tangibly improve the lives of all of the players in the REAL WORLD.[38]

As we already saw earlier in this chapter, the basic mapping architecture of MMORPGs can be tied to real-world geography, persons and objects, as a platform for coordinating their real-world interactions in virtual space. And as Robb pointed out in the passage above, much of our real lives—the way we pay our bills, etc.—already are governed by what amounts to a virtual architecture piggybacked on physical reality.

In surveying open course materials and open learning platforms, you probably can't do better than to start out with Anya Kamenetz's work.

Her resource book for DIY scholars, *The Edupunk's Guide to a DIY Credential,*[39] was designed to be

> a comprehensive guide to learning online and charting a personalized path to an affordable credential using the latest innovative tools and organizations. This guide is full of people, programs, and ideas that are part of the future of learning. I've spoken to over 100 learners from programs and sites around the country and around the world that offer new methods of content delivery, new platforms for socialization,

[37] David Blake, "Jailbreaking the Degree," *Techcrunch*, May 5, 2012 <techcrunch.com>.
[38] Stephen Downes, *The Future of Online Learning: Ten Years On* (2008) <halfanhour.blogspot.com>, pp.19–20.
[39] Robb, "Industrial Education?" *Global Guerrillas*, January 13, 2009 <globalguerrillas.typepad.com>.

> and new forms of accreditation. Most of them take advantage of the technology now at our disposal— they're either all-online programs that complement the experiences you're already having; or hybrid programs, combining in-person and online experiences. Nearly all of them are cheaper than your average state university. Many are even free! And I've given you the tools to go out and find even more options, and to create them for yourself.[40]

DIY education "means getting the knowledge you need at the time you need it, with enough guidance so you don't get lost, but without unnecessary restrictions. DIY doesn't mean that you do it all alone. It means that the resources are in your hands and you're driving the process."[41] The Guide includes chapters on how to do research online, write a personal learning plan, teach yourself online, build your personal learning network, find a mentor, get a credential, and demonstrate value to a network.[42]

The Personal Learning Network may well evolve into the peer network from which one seeks credentialing and work opportunities.

> in the long run, no one learns alone. You need people to bounce ideas off, answer questions, and help you when you get stuck, and to give you ideas about where to go next in your learning… In a true PLN, you're a contributor, not just a consumer… Over the course of your learning plan, your PLN will begin to overlap with the professional network of practitioners in your field, where you'll need to demonstrate value in order to connect with opportunities…[43]

The second half of the guide is a catalog of resources—reproduced in more easily accessible form on the Resources page of the book's website—that are of potentially immense value to an independent scholar. The first two categories consist mainly of means for obtaining class credit for extracurricular learning, alternative or irregular major programs, and the like. The third, the most important for someone engaged in self-directed learning outside the formal university system, is "Open World"—a guide that includes sections on open content, open social learning, open learning institutions, open ed startups, and reputation networks.[44]

The open content includes a wide array of open course materials like syllabi, lectures and textbooks—among them MIT's Open Coursework, Open Yale Courses and Open Textbooks. The open social learning section includes various online networks, but has the serious shortcoming—in my view—of neglecting field-dedicated scholarly email lists. Open learning institutions and open ed startups are unconventional learning networks and open universities, like P2PU and Uncollege.

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[40] Clay Shirky, "Napster, Udacity and the Academy," *Shirky.com*, November 12, 2012 <www.shirky.com>.

[41] Robb, "Online Games, Superempowerment, and a Better World," *Global Guerrillas*, March 18, 2010 <globalguerrillas.typepad.com>.

[42] Anya Kamenetz, *The Edupunk's Guide to a DIY Credential* (Bill and Melinda Gates Foundation, 2011) <www.smashwords.com>. Various free online versions of the actual text can be found at <www.smashwords.com>.

[43] "About the Guide," *The Edupunk's Guide* <edupunksguide.org>.

[44] Online html text <www.smashwords.com>.

III. Open Course Materials

For a major share of introductory learning, zero marginal costs of reproducing information can lower the price of education to almost zero. Freshman and sophomore auditorium classes, taught to hundreds of students at a time—often by graduate assistants—are designed to spread the cost of teaching out over as many students as possible. Student-instructor interaction is virtually nil. So expanding the number of students taught in a single lecture course a thousandfold at no additional cost, through video transmission over the Internet, should involve no appreciable reduction in quality. In fact the replacement of harried grad assistants just going through the motions with the leading figures in each field—and supplemented by independent access to an array of online material unimaginable twenty years ago— should increase instruction quality immeasurably.

According to Stephen Carson and Jan Philipp Schmidt,

> Not only is online learning beginning to scale massively, but it is also beginning to do so at almost zero marginal cost. The expense of adding an additional student in a campus setting remains relatively stable. In online learning, however, the cost of adding one more user is often so close to zero that it can be ignored…
>
> MIT, open education pioneer and founder of the OpenCourseWare movement, announced in December 2011 the creation of MITx as an open and non-profit alternative to for-profits like Udacity and Coursera. MITx is currently offering its first course, "Circuits and Electronics", which attracted large numbers of users, and is developing an opensource platform that anyone will be free to use. A number of other universities, including Harvard University and Georgia Tech, are paying close attention and developing their own massive, open, and online strategies.
>
> Open content lies at the core of these massive online courses. Typically, a series of video lectures, with short quizzes built in, make up the bulk of the instruction for users. This is good news for traditional universities, who already have vast amounts of highquality teaching materials ready to share online. And because knowledge generation will continue to take place at universities, especially those that do advanced research, there will always be a need to update and revise materials. Since 2002, more than 250 universities in the OpenCourseWare movement have been publishing their academic materials openly on the Web and have shared materials from more than 15,000 courses in a wide range of disciplines and languages. These institutions are well positioned to add online-only courses to their open course work projects.
>
> A number of online services already allow free hosting and streaming of instructional videos. Since the materials are openly licensed, the need for sophisticated access management is obviated, and the materials can thus be made freely available.

Peer-to-peer learning networks can provide student support of a kind learners weren't getting from faculty in conventional course models in the first place.

> There are not enough subject matter experts to meet the needs of learners, and education systems worldwide are straining to find enough qualified teachers. MOOCs

> recognize this fact by setting up informal Q&A systems that allow participants to engage with each other. In some cases where peer-to-peer interactions are not directly supported within an online course, informal learning communities can emerge spontaneously on separate platforms…
>
> Systems to support peer-to-peer learning on the Web are widely available at very low cost or without charge. A range of Q&A systems can be self-hosted; open education projects, including OpenStudy and P2PU, provide platforms for such interaction; and Google groups, Yahoo groups, Ning sites, and Moodle installations can also be used to structure peer-to-peer interaction.[45]

An important consideration to bear in mind is that open course materials don't simply involve the transfer of the same material to a new venue; they involve a fundamental change in how the content is used. Anya Kamenetz writes:

> MOOCs are content = a MOOC is not a course. A sage-on-stage lecture-based course is not particularly innovative, I know. But take those same lectures, chop them up into short segments, make them fastforwardable, pausable, allow people to add comments, ask a question in the forums, start and stop any time they want, work examples in realtime alongside the instructor, go to Wikipedia to look something up–
>
> –you have changed the fundamental nature of the experience. The power relationship is different. The talking head is shrunk to the size of a thumbnail. She speaks at the whim of the student. And her truth is represented as one among many hundreds of options, all of which are accessible for free.
>
> Content is infrastructure = If you look at it this way, a MOOC is really more like a glorified (really glorified) textbook. It's not an end-to-end solution. It's the basis of an experience that people have individually and collectively. Interaction with other people around the ideas is always going to be the important part of what happens to people when they are engaged with any kind of educational content.[46]

This reminds me of Marshall McLuhan's observation that each new medium has its predecessor as its content. And Matt Reed argues just that: technical innovations in the transmission of higher ed follow a progression much like that McLuhan describes in media.

> The animating principle behind the organization of traditional colleges was the scarcity of knowledge. Before movable type, the scarcity of knowledge was based on the scarcity of print; "recitation" sections were literally recitations of texts… It was the only economically feasible way to share information.
>
> With movable type the game changed a bit; it became possible to expect students to read outside of class… At that point, the value added by the professor had to go beyond simply reading the text. The professor was expected to analyze texts, to pit them against each other, and to help students develop the skills to interpret—and

[45] *Ibid.*
[46] *Ibid.*

> even challenge—the books themselves. Entire academic departments sprung up to interpret the sudden proliferation of print.
>
> In this model, information isn't as scarce as it had been, but it was still expensive in large quantities, and the skills needed to interpret it took more development. Professors were valuable in showing students how to handle the material, and in guiding them towards the "right" material. The definition of "right" material changes over time, but the principle remains.
>
> Now, with the web and social media, the entire concept of information scarcity is moot. Now the role of the professor is something like "sherpa," helping students navigate through mountains of information. Students can access information from just about anyone and anywhere; the goal now is in knowing what to do with it.
>
> Colleges have fought the most recent shift. We still allocate lecture time as if it were a scarce commodity. Online classes are different, but for the most part, they're still based on the traditional model. They're like filmed plays, as opposed to movies. We charge higher rates than we ever have for access to lectures, even though information has never been more available from more sources more freely. And we act as if the only way to learn information is to ignore most of what has come along in the last ten years.[47]

Each new mode of knowledge transmission takes the previous mode as its subject matter. The scarce information in one node becomes the free subject matter of the next mode. The next mode incorporates the previous one as subject matter—treating it as a raw material that in itself is no longer scarce, but adding a new layer of interpretive framing, or value added, that IS scarce. But the power structure associated with an old mode wants to artificially impose the same laws of scarcity on the new one. Most MOOC online courses are the moral equivalent of a filmed play, rather than a new form of content adapted to the movie format.

Indeed, perhaps the biggest drawback of MOOCs, is that they're an example of new wine in old bottles—that is, they are an attempt to fit online learning into the traditional lecture format of brick-and-mortar higher education. As Radhika Morabia argues:

> Why are we trying to recreate a college lecture? Online education is the chance to do something different. At this stage in MOOCs, we're trying to adapt the online world to education. We can go so much farther if we do the exact opposite. I've learned 99% of what I know from the internet. What if we adopted that kind of model to a more accessible form, instead of being scattered and not being userfriendly? That would be a true online education platform. (Some courses which attempt to teach students to code are doing this well.)
>
> Why do we have to do video? There are so many problems with trying to use video as the main form of learning… [F]or the user, video is absolutely passive. It also forces a speed (no, YouTube's speed-control option doesn't help), and isn't compatible with students who want to learn at their own pace, which is the most interesting possibility online.[48]

[47] <edupunksguide.org>.

[48] Stephen Carson and Jan Philipp Schmidt, "The Massive Open Online Professor," *Academic Matters*, May 2012 <www.academicmatters.ca>.

The present packaging of MOOCs not only impedes their effectiveness from the standpoint of self-directed learners and their goals, but also leads to underestimation of the effectiveness even of the existing MOOC model from that standpoint. Critics of MOOCs point to the 5% completion rate as evidence of their failure. But much larger numbers

> explored significant parts of courses, which may be all they wanted or needed. "This in many ways mirrors the preferences of students on campus… In a survey of students, approximately 40 percent of respondents report that they have taken MIT classes that they feel would benefit from modularization."[49]

In December 2011, the MIT Open Courseware program introduced MITx: an interactive learning program which certifies completion for students who demonstrate master of course material.[50] As of 2015, MIT had begun organizing its Open Courseware courses into longer sequences, "starting with a seven-course sequence in computer programming that begins with introductions to coding, computational thinking and data science, and then moves to software construction, digital circuits, programmable architectures and computer systems organization." This is a step towards the kind of "open badges" certification of specific learning and skills, rather than entire degrees, that we discuss later in the chapter.[51]

The Washington State Board for Community and Technical Colleges has (as of November 2011) undertaken an Open Course Library project, hosting the textbooks, readings and other materials from the 81 most popular general education courses, which will result in a drastic reduction in college textook co.[52]

The UK Open University in December 2012 announced a new free/open learning platform called Futurelearn:

> Futurelearn will be the UK's first large-scale provider of Massive Open Online Courses (MOOCs), a new kind of educational offering that charges no fees, offers no formal qualifications and has no barriers to entry. The first generation of MOOCs, which has attracted millions of students from around the world, laid the foundation for widespread change in higher education. The universities of Birmingham, Bristol, Cardiff, East Anglia, Exeter, King's College London, Lancaster, Leeds, Southampton, St Andrews and Warwick have all signed up to join The Open University in Futurelearn.[53]

IV. Open Textbooks.

"Pirated" Proprietary Texts. And of course there's the expedient of simply using unauthorized reproductions of conventional texts, thereby circumventing the enormous copyright markup of the textbook racket. The government of Guyana, for example, has responded to the high cost

[49] Anya Kamenetz, "MOOCs are Infrastructure," *DIY U*, February 6, 2013 <diyubook.com>.

[50] Matt Reed, "What if Colleges Used Social Media Well," *Inside Higher Ed*, April 16, 2013 <www.insidehighered.com>.

[51] Radhika Morabia, "Reflections on MOOCs," *RMorabia*, April 14, 2014 <rmorabia.com>.

[52] Jeffrey R. Young, "Are Courses Outdated? MIT Considers Offering 'Modules' Instead," *Chronicle of Higher Education*, August 5, 2014 <chronicle.com>.

[53] "MIT launches online learning initiative," *MIT News Office*, December 19, 2011 <web.mit.edu>.

of proprietary textbooks by buying cheap knockoffs from firms that sell photocopies.[54] There is growing support for the model Aaron Swartz promoted, of jailbreaking paywalled scholarly articles and posting the pdfs at some academic version of The Pirate Bay along with scanned-in textbook files. Most recently, scholars can avoid the $30 or more fees for access to paywalled journals articles by using the Twitter hashtag #ICanHazPdf, simply posting their email address with the bibliographic data for the article they're requesting and downloading the pdf that some kind soul sends them as an email attachment in response.

V. Open Learning Platforms

P2PU. P2PU[55] is a free, open platform which anyone can use to set up courses. In many ways, it's a revival of the medieval model of the university: those with something to teach can set up a course, select the course materials, organize lesson plans, and solicit learners; groups of learners interested in learning about a subject can perform the same functions for themselves and learn together. Of course it's possible to create synergies between the open learning platform and open course materials available elsewhere like MIT Open Courseware (see below), structuring courses around such open syllabi and reading lists.

University of the Commons. According to its official site the University of the Commons[56] is "a collective of teachers, artists, activists, scholars, writers, and students dedicated to the idea of education for the sake of education," which began with an informal meeting in April 2011 and invited the Bay Area community to form a free university. It launched with its first offering of free classes in Spring 2012. Fall 2012 courses listed were:

- SCIENCE LITERACY: The Physical Science of Global Warming and Cooling, Climate Change
- RESPONSIVE CINEMA: Filmmaking Workshop
- INTRODUCTION TO WESTERN MUSIC: From Hildegard to Handel
- BASIC COMPUTER SKILLS INTENSIVE
- OCCUPY U.: Present-Day Strategies For Change And Their Effectiveness *Unishared.* Unishared is an attempt to remedy one deficiency in the free open courses that conventional American universities provide through Coursera, Academic Earth, or in-house platforms: "they are too weak in collaboration and peer learning, key points of successful education."

> You mainly learn by asking questions, by interacting informally with professors and peers and becoming part of the right learning community where people motivate you… And here come the power of the internet which is not the media of one to many like TV…

[54] Kevin Carey, "One vision of tomorrow's college: Cheap, and you get an education, not a degree," *Washington Post*, February 15, 2015 <www.washingtonpost.com>.

[55] Liz Dwyer, "In Washington State, the End of $200 Textbooks is Here," *Good Education*, November 3, 2011 <www.good.is>; <www.opencourselibrary.org>.

[56] <www.futurelearn.com>; block quote from Cory Doctorow, "Open University is now more open," *Boing Boing*, December 14, 2012 <boingboing.net>.

> Many students are already sharing on the new Unisharred platform, from Copenhagen to Stanford. "Students are willing to take action to change the way the world is learning. And with the internet capabilities, a small change in their habits—taking notes online—can have a huge social impact and make their time at university way more efficient and meaningful."…
>
> François Fourcade, whose students used UniShared during classes explains: "Once the notes are shared, the students start to reflect on the lesson, to see similarities and differences between the perception of a same class (ie/soft skills development, meta competence development)… The students are creating a network, motivating people to join their learning community, they are able to track inside this network who learns what faster than others, who is more knowledgeable in a certain field."[57]

The Open Masters Program. The Open Masters Program was created with advice and support from a large number of open eduction projects, including DIYU, Uncollege and the Hub.

> We are creating an experience together to take ownership of our higher education and, in the process, designing a program that we hope can be replicated by a virtually unlimited number of small, self-organized peer groups anywhere in the world.
>
> The prototype group for the Open Master's program began in Fall, 2012 in Washington, DC, with a few of us joining from around the world. We set off with a vision to create a form of higher education that is:
>
> Open—To all people.
>
> Experiential—We learn through projects and experiences, in addition to courses and other traditional ways of learning.
>
> Social—We learn in supportive groups of peers that learn through teaching and mentoring each other. We aim to ground ourselves in specific communities through hosts like Hubs and universities.
>
> Flexible—All topics of study are welcome. Each personal learning plan is tailormade and refined with our peers and mentors. Detours along the way- and figuring out your plan as you go- are perfectly fine, even encouraged.
>
> Transformative—We're not just learning functional skills. We're learning how to grow as humans, to be better self-directed learners- to learn and relearn for the rest of our lives- to be seasoned team collaborators, and to have a positive impact on the world.
>
> Design around abundance, not scarcity.
>
> Credible—We are making ourselves credible by creating impressive portfolios of work, holding each other to high standards, peer reviewing each other's work, and earning letters of endorsement from peers, mentors, and organizations we respect.[58]

[57] Zachary Knight, "Guyana Resorts To Buying Pirated Textbooks Because Legal Copies Are Too Expensive [Updated]," *Techdirt*, October 2, 2012 <www.techdirt.com>.

[58] <p2pu.org>.

Other programs include, among others, UnCollege[59] (which "provides Gap Year programs for young adults who want to drive their own education"), The Open University,[60] University of the People (a "tuition-free online university")[61] and Udemy.[62]

VI. Credentialing

The signaling function of post-secondary education is a way of overcoming the transaction costs of evaluating individual qualifications for specific functions on an ad hoc basis, when the hiring unit is a giant bureaucracy and the hiring functionaries are bureaucrats who need a standard procedure for evaluating large numbers of people on an impersonal basis. The solution is to process workers in batch lots with bureaucratic certification of their skills.

But when most production and training units are distributed, small and local, the transaction costs for horizontal certification systems become much lower. When the entity doing the hiring is a neighborhood garage factory, and Dave is applying for a job as a machinist, his credentials might be something like this: I took these metal shop classes at the town learning center, apprenticed in Bob's machine shop, and passed the certification exam with the NE Ohio Machinists' Guild. "OK, Dave, let's try you out."

Emlyn O'Regan writes that universities provide three major sources of value, which are in the process of being de-linked from one another:

> learning (largely replaceable with free online content /study guides) networking (replaceable online, in fact a lot of why nerds built the net in the first place) credentialing—this is still the hard one
>
> Credentialing is the force behind the higher education bubble. People pay more and more to get that piece of paper. It's an unjustifiable, unproductive, exploitative money pump. If you could route around that, you'd blow this industry to pieces.
>
> Now one way to split credentialing off from the rest of the concerns of "education" is to provide something like "recognition for prior learning"… But, it's tough; you have to test people rigorously to figure out if they deserve a credential or not, and you can easily make mistakes. That's why we prefer the Unis, because we know the person had to more or less sit through X many years of study, so there's some minimal learning assumable even if everything else fails.
>
> But I'm wondering, can we crowdsource credentialing?
>
> Take a social network, or even better a professional network like LinkedIn. Let people just add "qualifications" they have ("skills"? Is there a more appropriate word?). Then, crucially, get others to rate them.
>
> To make this work, you need some kind of credibility rating for the raters.[63]

[59] <www.uotc.org>

[60] Ricardo Geromel, "Unishared: Revolution in Online Education Beyond Coursera, Edx, and Udacity," *Forbes*, September 17, 2012 <www.forbes.com>.

[61] "About," *The Open Masters Program* <www.openmastersprogram.com> (accessed March 26, 2013).

[62] <www.uncollege.org>

[63] <www.open.ac.uk>

(That last feature is sadly missing from LinkedIn's current endorsement system).

But what about voluntary certification through somewhat more formal arrangements? For example:

- Professional associations or guilds certifying the ability of members, and providing continuing education, with the incentive to avoid "grade inflation" being the need to maintain the credibility of their "brand."
- Voluntary courses in various skills, with certain course providers becoming the "gold standard" based on their reputation.
- Apprenticeship programs conducted through guilds or professional associations. The Mozilla open badges project is a good model. It's a modular, stackable system of badges that learners can collect and aggregate in any particular package or combination suits their individual needs.

  > A digital badge is an online representation of a skill you've earned. Open Badges takes that concept one step further, and allows you to verify your skills, interests and achievements through a credible organization. And because the system is based on an open standard, you can combine multiple badges from different issuers to tell the complete story of your achievements—both online and off. Display your badges wherever you want them on the web, and share them for employment, education or lifelong learning…
  >
  > Mozilla Open Badges is not proprietary—it's free software and an open technical standard. That means any organization can create, issue and verify digital badges, and any user can earn, manage and display these badges all across the web.
  >
  > Open Badges knits your skills together. Whether they're issued by one organization or many, badges can build upon each other, joining together to tell the full story of your skills and achievement.
  >
  > With Open Badges, every badge is full of information. Each one has important data built in that links back to the issuer, the criteria it was issued under and evidence verifying the credential…
  >
  > Individuals can earn badges from multiple sources, both online and offline. Then manage and share them using the Open Badges backpack…
  >
  > Open Badges makes it easy to …
  >
  > Get recognition for the things you learn, both online and off. Open Badges includes a shared standard for recognizing your skills and achievements—and lets you count them towards an education, a job or lifelong learning…
  >
  > Display your verified badges across the web. Earn badges from anywhere, then share them wherever you want—on social networking profiles, job sites or on your website.
  >
  > Verify skills. Employers, organizations and schools can explore the data behind every badge issued using Mozilla Open Badges to verify individuals' skills and competencies.[64]

[64] <www.uopeople.org

Even without state-mandated licensing or college accreditation, one's credentials would still carry weight based on the degree of public confidence in the reputation of the accreditor.

Conclusion

Let's go back now and take another look at the self-driven model of education Pirsig described in his Church of Reason piece. We're approaching a state of affairs where the widespread availability of cheap, networked educational technology coincides with the widespread availability of cheap, networked manufacturing tools—resulting in a two-pronged attack on the institutional alliance between the HR departments of large corporate employers and large educational institutions. In a world where course materials are freely available to anyone interested in them, and students (whether officially recognized as such or not) can interact with each other and contact an entire world of scholars from their own homes, the environment will be far more conducive to informal credentialing arrangements between employers or work teams and workers. Instead of a small number of accredited institutions acting as credentialing gatekeepers and providing an entire educational package (if you want any of it, you have to buy the whole thing) as a condition for certifying you to potential employers, the work team at the local garage factory or permaculture truck farm can negotiate with would-be members as to what particular course certifications are most useful.

8. The Assurance Commons

I. Introduction

This chapter examines how voluntary, networked associations would perform the function David Ronfeldt calls the "Assurance Commons." The Assurance Commons—the provision of safety, quality and other assurances in the goods and services we buy, protections against fraud, etc.—is probably the single function of existing states raised most frequently by those skeptical of the feasibility of a society built around voluntary, self-organized associations.

> For me, thinking in terms of an assurance criterion leads to supposing that people at large in advanced societies seek to include the following: Assurances not only of fresh air and water, but also that food, medicine, and other products are made safe, free of dangers. Assurances that basic health, education, and welfare services are provided in equitable ways. Assurances that one's vote counts. Assurances, in America, that the U.S. Constitution, the Bill of Rights, and law more generally, not to mention many codes and regulations, are upheld and apply to all people (including corporations in their capacity as "persons")…
>
> As I wonder about what else might be listed, it seems even clearer that the commons is no longer so much about resources. It is indeed increasingly about practices— including policies—that assure rights and responsibilities, as well as accountability; practices that assure open and abundant access and usage; practices that assure universal services and public utilities, broadly defined; practices that require strategic risk management and quality assurance for the benefit of people at large; practices that make a society more robust and resilient, on everyone's behalf…
>
> An assurance-commons approach would not make governance issues any easier to deal with, but it might help illuminate them. As Elinor Ostrom's work has shown, people are learning to manage common-pool resources in polyarchic network-like ways, without having to turn to old hierarchy- and market-like ways. But assurance commons involve more than common-pool resources. They also involve some of the knottiest governance issues around—e.g., in the field of health—requiring extensive coordination among multiple public, private, and other actors.[1]

In the networked age the assurance commons takes the form of what Andrea Saveri et al call "social accounting systems," which they define as

> mechanisms for building trust among strangers and reducing the risk of transactions. They include formal rating systems, automatic referral systems, and collaborative fil-

[1] <udemy.com>

> tering to establish the reputation of individuals and organizations as well as products and knowledge.

These accounting systems overcome the Prisoner's Dilemma by turning it into "an Assurance Game in which players win by building their reputation as trusted partners. Social accounting systems build this reputation in a variety of ways, from formal, centralized rating systems to distributed collaborative-filtering mechanisms."[2]

II. Legibility: Vertical and Horizontal

The technical basis, in network technology and the tools of individual superempowerment, already exists for supplanting regulatory state functions (assuming the regulatory state actually *does* perform its ostensible functions). But getting from here to there will involve a fundamental paradigm shift in how most people think, overcoming centuries worth of ingrained habits of thought. This involves a shift from what James C. Scott, in *Seeing Like a State*, calls social organizations that are primarily "legible" to the state, to social organizations that are primary legible or transparent to the people of local communities organized horizontally and opaque to the state.[3]

The latter kind of architecture, as described by Pyotr Kropotkin, was what prevailed in the networked free towns of late medieval Europe. The primary pattern of social organization was horizontal (guilds, etc.), with quality certification and reputational functions aimed mainly at making individuals' reliability transparent to one another. To the state, such local formations were opaque.

With the rise of the absolute state, the primary focus became making society transparent (in Scott's terminology "legible") from above. Things like the systematic adoption of family surnames that persisted from one generation to the next (and the 20th century follow-up of Social Security Numbers and other citizen ID numbers), censuses, the systematic mapping of urban addresses for postal or 911 service, etc., were all for the purpose of making society legible to the state, keeping track of its people and resources.

Before this transformation, for example, surnames existed mainly for the convenience of people in local communities, so they could tell each other apart. Surnames were adopted on an ad hoc basis for clarification, when there was some danger of confusion, and rarely continued from one generation to the next. If there were multiple Johns in a village, they might be distinguished at any particular time by trade ("John the Miller"), location ("John on the Hill"), patronymic ("John Richard's Son"), etc. By contrast, everywhere there have been family surnames with cross-generational continuity, they have been imposed by centralized states as a way of cataloguing and tracking the population—making it legible to the state, in Scott's terminology.[4]

During the ascendancy of the modern state, the horizontal institutions of the free towns were at best barely tolerated—and usually not even that. Kropotkin wrote:

> For the next three centuries the States, both on the Continent and in these islands, systematically weeded out all institutions in which the mutual-aid tendency had formerly found its expression. The village communities were bereft of their folkmotes,

[2] Emlyn O'Regan, "Crowdsourced Credentialling," *point7*, August 20, 2010 <point7.wordpress.com>.

[3] "About," *OpenBadges.org* <openbadges.org> (accessed March 26, 2013).

[4] David Ronfeldt, "Speculation: Is there an 'assurance commons'? Do societies depend on it? Should there be a U.S. Chamber of Commons?" *Visions From Two Theories*, December 3, 2012 <twotheories.blogspot.com>.

> their courts and independent administration; their lands were confiscated. The guilds were spoliated of their possessions and liberties, and placed under the control… of the State's official… It was taught in the Universities and from the pulpit that the institutions in which men formerly used to embody their needs of mutual support could not be tolerated in a properly organized State; that the State alone could represent the bonds of union between its subjects; that federalism and "particularism" were the enemies of progress, and the State was the only proper initiator of further development. By the end of the last century, the [governments of Europe] agreed in asserting that no separate unions between citizens must exist within the State… "No state within the State!" The State alone… must take care of matters of general interest, while the subjects must represent loose aggregations of individuals, connected by no particular bonds, bound to appeal to the Government each time that they feel a common need…
>
> The absorption of all social functions by the State necessarily favoured the development of an unbridled, narrow-minded individualism. In proportion as the obligations towards the state grew in numbers the citizens were evidently relieved from their obligations towards each other.[5]

Likewise, the preemption and absorption of all regulatory functions by the state favored the development of a mindset by which providers of goods and services were relieved of the obligation to provide reliable certifications of the quality of their wares to consumers, and consumers were relieved of their obligation to scrutinize their quality and the reputations of the vendors. It was the state's job to take care of that business for us.

But it's usually a false confidence that relies on the imprimatur of the state for the quality of goods and services; the average citizen consumes endless amounts of things like genetically modified organisms, pesticide and herbicide residues, and parabens, on the assumption that "they couldn't sell it if it was dangerous"—when the so-called regulatory standards are largely written by the regulated industries. And whatever minimal genuine quality and safety standards exist in the regulatory code become, in practice, more a ceiling than a floor; often corporations have successfully pressured the courts, when their competitors advertise a product quality or safety standard higher than the regulatory state requires, to treat such advertising as "product disparagement" on the grounds that it suggests products which merely meet the ordinary standard (which of course is based on "sound science") are inferior. example, Monsanto frequently goes after grocers who label their milk rBGH free, and some federal district courts have argued that it's an "unfair competitive practice" to test one's beef cattle for Mad Cow Disease more frequently than the mandated industry standard. In short the regulatory state, by supplanting selforganized reputational and certifying mechanisms, has relieved the citizen of the burden of thinking for herself—and the corporation has rushed in to take advantage of the fact.

The reason we so closely identify hierarchy and bureaucracy with progress lies in recent history: namely, the suppression of the working class's self-organized social safety net and its replacement by a state-controlled alternative. The modern welfare state was not "created by benevolent democratic elites." Far from it.

[5] Andrea Saveri, Howard Rheingold, and Kathi Vian, *Technologies of Cooperation.* SR-897 (Palo Alto: Institute for the Future, January 2005), p. 24.

> In Europe, most of the key institutions of what later became the welfare state— everything from social insurance and pensions to public libraries and public health clinics—were not originally created by governments at all, but by trade unions, neighborhood associations, cooperatives, and working-class parties and organizations of one sort or another. Many of these were engaged in a self-conscious revolutionary project of "building a new society in the shell of the old," of gradually creating Socialist institutions from below.[6]

Bismarck's conservative agenda entailed first suppressing the socialist parties and trade unions, and then creating a comprehensive state-based safety net that was to become the model for the rest of Western Europe and then the United States. His welfare state was

> a top-down alternative to the free schools, workers' associations, friendly societies, libraries, theaters, and the larger process of building socialism from below. This took the form of a program of social insurance (for unemployment, health, disability, etc.), free education, pensions, and so forth… When left-wing regimes did later take power, the template had already been established, and almost invariably, they took the same top-down approach, incorporating locally organized clinics, libraries, mutual banking initiatives, workers' education centers, and the like into the administrative structure of the state.[7]

The model for all these new bureaucracies was the German Post Office, world-renowned for its efficiency. And Lenin heartily endorsed the postal service as a model of "the socialist economic system."

> At present the postal service is a business organized on the lines of a state-*capitalist* monopoly. Imperialism is gradually transforming all trusts into organizations of a similar type…
>
> To organize the *whole* national economy on the lines of the postal service, so that the technicians, foremen, bookkeepers, as well as *all* officials, shall receive salaries no higher than "a workman's wage," all under the control and leadership of the armed proletariat—this is our immediate aim.[8]

To accomplish a shift back to horizontal transparency, it will be necessary to overcome six hundred years or so of almost inbred habits of thought, among the general public, of thinking of such things through the mind's eye of the state: if "we" (i.e. "the authorities," presumed to act on our behalf) didn't have some way of verifying compliance with this regulation or that, some business somewhere might be able to get away with something or other.

In place of this habit, we must think instead of *ourselves* creating mechanisms on a networked basis, to make us as transparent as possible to *each other* as providers of goods and services, to prevent businesses from getting away with poor behavior by informing *each other*, to prevent

[6] James Scott, *Seeing Like a State* (New Haven and London: Yale University Press, 1998).

[7] *Ibid*., pp. 64–73.

[8] Pyotr Kropotkin, *Mutual Aid: A Factor of Evolution* (New York: Doubleday, Page & Company, 1909), pp. 226–227.

each other from selling defective merchandise, to protect *ourselves* from fraud, etc. The state has attempted to coopt the rhetoric of horizontality (e.g. "We are the government."). But in fact, the creation of such mechanisms—far from making us *transparent* to the regulatory state—may well require active measures to render us *opaque* to the state (e.g. encryption, darknets, etc.) for protection *against* attempts to suppress such local economic selforganization against the interests of corporate actors.

We need to lose the centuries-long habit of thinking of "society" as a huband-spoke mechanism and viewing the world vicariously from the imagined perspective of the hub, and instead think of it as a horizontal network and visualize things from the perspective of the individual nodes which we occupy. We need to lose the habit of thought by which transparency from above even became perceived as an issue in the first place. Because the people who are seeing things "from above," in reality, do not represent us or have anything in common with us.

As Charles Johnson—aka "Rad Geek"—argued, "the market" is nothing more than a series of choices made by human beings as to how to interact with one another[9]:

> Q. In a freed market, who will stop markets from running riot and doing crazy things? And who will stop the rich and powerful from running roughshod over everyone else?
>
> A. We will…
>
> … It's convenient to talk about "market forces," but you need to remember that remember that those "market forces" are not supernatural entities that act on people from the outside. "Market forces" are a conveniently abstracted way of talking about the systematic patterns that emerge from people's economic choices. So if the question is, who will stop markets from running riot, the answer is: We will; by peacefully choosing what to buy and what not to buy, where to work and where not to work, what to accept and what not to accept, we inevitably shape and order the market that surrounds us…
>
> … [This includes] achieving harmony and order through a conscious process of voluntary organizing and activism… In a freed market, if someone in the market exploits workers or chisels costumers, if she produces things that are degrading or dangerous or uses methods that are environmentally destructive, it's vital to remember that you do not have to just "let the market take its course"—because the market is not something outside of us; we are market forces. And so a freed market includes not only individual buyers and sellers, looking to increase a bottom line, but also our shared projects, when people choose to work together, by means of conscious but non-coercive activism, alongside, indeed as a part of, the undesigned forms of spontaneous selforganization that emerge. We are "market forces," and the regulating in a selfregulating market is done not only by us equilibrating our prices and bids, but also by deliberately working to shift the equilibrium point, by means of conscious entrepreneurial action—and one thing that libertarian principles clearly imply, even though actually-existing libertarians may not stress it often enough, is that en-

[9] David Graeber, *The Utopia of Rules: On Technology, Stupidity, and the Secret Joys of Bureaucracy* (Brooklyn and London: Melville House, 2015), p. 153.

trepreneurship includes social entrepreneurship, working to achieve non-monetary social goals.

So when self-regulating workers rely on themselves and not on the state, abusive or exploitative or irresponsible bosses can be checked or plain run out of the market, by the threat or the practice of strikes, of boycotts, of divestiture, and of competition—competition from humane and sustainable alternatives, promoted by means of Fair Trade certifications, social investing, or other positive "pro-cott" measures. As long as the means are voluntary, based on free association and dissociation, the right to organize, the right to quit, and the right to put your money where your mouth is, these are all part of a freed market, no less than apple-carts or corporations. When liberals or "Progressives" wonder who will check the power of the capitalists and the bureaucratic corporations, their answer is—a politically-appointed, even less accountable bureaucracy. The libertarian answer is—the power of the people, organized with our fellow workers into fighting unions, strikes and slow-downs, organized boycotts, and working to develop alternative institutions like union hiring halls, grassroots mutual aid associations, free clinics, or worker and consumer co-ops. In other words, if you want regulations that check destructive corporate power, that put a stop to abuse or exploitation or the trashing of the environment, don't lobby—organize!

… When I say that the libertarian Left is the real Left, I mean that, and it's not because I'm revising the meaning of the term "Left" to suit my own predilections or some obsolete French seating chart. It's because libertarianism, rightly understood, calls on the workers of the world to unite, and to solve the problems of social and economic regulation not by appealing to any external authority or privileged managerial planner, but rather by taking matters into their own hands and working together through grassroots community organizing to build the kind of world that we want to live in.

It's not important that we can't answer every question about "who will prevent this or that without a state?" "How will we do the other thing without the state?" We need, as David de Ugarte argues, to think of social problem solving as something that *we* will do, by responding to the situation and using our judgment as we go along.

> And what happens if we don't have an alternative to every "solution," at every moment? Nothing. It's like free software, it doesn't matter if it's good or bad, we'll improve it; it doesn't matter if there's support or not, we'll organize it. Freedom is fundamental to what is truly alive and human. It's the starting point for all ethical thinking, not a distant objective…[10]

Such a shift in perspective will require, in particular, overcoming the hostility of conventional liberals who are in the habit of reacting viscerally and negatively, and on principle, to anything not being done by "qualified professionals" or "the proper authorities."

Arguably conventional liberals, with their thought system originating as it did as the ideology of the managers and engineers who ran the corporations, government agencies, and other giant organizations of the late 19th and early 20th century, have played the same role for the corporate-state nexus that the *politiques* did for the absolute states of the early modern period.

[10] *Ibid*. pp. 154–155.

This is reflected in a common thread, running through thinkers like Thomas Frank and Michael Moore, of nostalgia for the "consensus capitalism" of the early postwar period, in which the gatekeepers of the Big Three networks controlled what we were allowed to see and it was just fine for GM to own the whole damned economy—just so long as everyone had a lifetime employment guarantee and a UAW contract.[11] We also see it in places like Andrew Keen's *Cult of the Amateur*, where the idea of anything being done by other than "properly qualified professionals" is ridiculed without mercy.

On his old MSNBC program, Keith Olbermann routinely mocked exhortations to charity and self-help, reaching for shitkicking imagery of the nineteenth century barn-raiser for want of any other comparision sufficient to get across just how backward and ridiculous that kind of thing really was. In Olbermann's world, of course, such ideas come only from conservatives. The only ideological choice is between plain, vanilla flavored managerialist liberalism and the Right. In Olbermann's world, the decentralist Left of Ivan Illich, Paul Goodman, and Colin Ward—the recessive Left that emerges when the dominant strain of Lenin and Harold Wilson is occupied elsewhere, as one of the editors of *Radical Technology* put it—doesn't even exist.

Helping your neighbor out directly, or participating in a local self-organized friendly society or mutual, is all right in its own way, of course—if nothing else is available. But it carries the inescapable air, not only of the quaint, but of the provincial and the picayune—very much like the stigmatization of homemade bread and home-grown veggies in corporate advertising in the early twentieth century. People who help each other out, or organize voluntarily to pool risks and costs, are to be praised—with just the slightest hint of condescension—for heroically doing the best they can in an era of relentlessly downscaled social services. But that people are forced to resort to such expedients, rather than meeting all their social safety net needs through one-stop shopping at the Ministry of Central Services office in a giant monumental building with a statue of winged victory in the lobby, a la *Brazil*, is a damning indictment of any civilized society. The progressive society is one of comfortable and well-fed citizens, competently managed by properly credentialed authorities, contentedly milling about like ants in the shadows of mileshigh buildings that look like they were designed by Albert Speer. And that kind of H.G. Wells utopia simply has no room for atavisms like the barn-raiser or the sick benefit society.

Aesthetic sensibilities aside, such critics are no doubt motivated to some extent by genuine concern that networked reputational and certifying mechanisms just won't take up the slack left by the disappearance of the regulatory state. Things like *Consumer Reports*, Angie's List and Yelp are all well and good, for educated people like themselves who have the sense and know-how to check around. But Joe Sixpack, God love him, will just go out and buy magic beans from the first disreputable salesman he encounters—and then likely put them right up his nose.

Seriously, snark aside, such reputational systems really *are* underused, and most people really *do* take inadequate precautions in the marketplace on the assumption that the regulatory state guarantees some minimum acceptable level of quality. But liberal criticism based on this state of affairs reflects a remarkably static view of society. It ignores the whole idea of crowding out (the extent to which the state actively suppressed self-organized mechanisms for horizontal legibility, as recounted by Kropotkin), as well as the possibility that even the Great Unwashed may be capable of changing their habits quite rapidly in the face of necessity—and that given enough time they might even figure out how to wipe their own bottoms without supervision

[11] *State and Revolution*, cited in *ibid.* p. 157.

by state-licensed shit-removal professionals. Because people are not currently in the habit of automatically consulting such reputational networks to check up on people they're considering doing business with, and *are* in the habit of unconsciously assuming the government will protect them, conventional liberals assume that people will not shift from one to the other in the face of changing incentives, and scoff at the idea of a society that relies primarily on networked rating systems.

But the simple fact of the matter—as we saw described by Kropotkin above— is that there *was* a society in which the certification of quality and enforcement of commercial standards was achieved by horizontal legibility: the society of the free towns in the late middle ages, where such functions were performed by local, selfmanaged institutions like the guilds. These local institutions had their origins in necessity, as the new towns filled up with runaway serfs who, in continuation of the village tradition, united in guilds for mutual protection and support—and as merchants of necessity worked out mechanisms for tracking their reliability as trading partners. And it's also a simple fact—again, as recounted by Kropotkin—that this society of horizontally legible regulatory bodies was stamped out by the state.

In a society where people are aware that most licensing and safety/quality codes are no longer enforceable, and "caveat emptor" is no longer just a cliche, it would be remarkable if horizontal reputational mechanisms *didn't* rapidly grow in importance for most people. They were, after all, at one time as ingrained a part of ordinary economic behavior as reliance on the regulatory state is today.

People's habits change rapidly. Fifteen years ago, when even the most basic survey of a research topic began with an obligatory painful crawl through the card catalog, Reader's Guide and Social Science Index—and when the average person's investigations were limited to the contents of her $1000 set of Britannica—who could have foreseen how quickly Google and SSRN searches would become second nature?

Self-styled enemies of Keen's "cult of the amateur" are fond of throwing the example of the amateur brain surgeon in our faces. Oddly enough, though, as Clay Shirky points out: "The stock figure of the amateur brain surgeon comes up only in conversations that *aren't* about brain surgery. The real assertion is that every time amateurs and professionals differ, we should prefer the professionals, and brain surgery is just one illustrative example."[12] When virtually *any* kind of licensing or professional regime comes up for debate, in contexts ranging from homeschooling to unlicensed cab services, the hoary amateur brain surgeon is dragged out and dusted off. The more extreme cases, like Keen, apply it to amateur restaurant critics and books published without the benefit of a publishing house gatekeeper.

More importantly, no one—not even free market anarchists—would choose someone to perform a high-risk procedure of any kind without some form of licensing or other certification to attest to their capability. The real question at issue is whether a licensing or certification regime need be provided by the state.

Even now, where state licensing regimes exist as a barrier to entry, protects licensed practitioners from competion and thus increases the bargaining power of closed professional priesthoods relative to the consumer, the desktop regulatory state acts as a control on the authority granted to licensed professionals and holds them accountable. The rise of network technology

[12] "In a freed market, who will stop markets from running riot and doing crazy things? And who will stop the rich and powerful from running roughshod over everyone else?" *Rad Geek People's Daily*, June 12, 2009 <radgeek.com>.

is having a revolutionary effect on the possibilities of keeping professionals honest where the licensing system doesn't do so.

Previously—to take medicine as an example—a patient usually felt pressured by time constraints not to ask a doctor all the things she really wanted to know, not to question the purpose or possible side-effects of medications, and to take terse answers as final rather than asking follow-up. Even when the doctor encouraged questions and the seeking of second opinions, the culture of professionalism resulted in an asymmetric power relationship in which many perceived a doctor's advice as "doctor's orders." Of necessity, even with a doctor willing to answer questions, the doctor was the main chokepoint controlling information available to the patient—and wittingly or not, her professional culture and tacit background assumptions filtered the kinds of information she provided.

Thanks to the Internet, however, there are websites—ranging from the most mainstream like WebMD to a variety of alternative medicine sites and even information-sharing sites like Erowid for recreational drug users—providing an embarrassment of information riches to the patient. There are large online communities of people suffering from an almost infinite variety of ailments, in which it's possible to ask questions and exchange information. The patient can arm herself with better questions for the doctor, and compare the doctor's advice to a universe of independently accessible information. Even when state-mandated licensing regimes are still in effect, the balance of power between physician and patient is far less asymmetric than fifteen years ago. The layperson is empowered to question and evaluate the judgment of the professional from a more equal position.

The rise of network communications—first the Internet and then social media—has, as Willow Brugh observes, simultaneously made us less legible to the state, and *more* legible to each other. In response to a Scientific American article claiming that social media makes crowds less predictable, she argued "social media makes crowds more predictable *to themselves*."

> Crowds are only less predictable to the outside. They are becoming more predictable to themselves… This, to me, is related to the core disconnection in disaster response between official response's view on social media/The Crowd as a resource to be tapped for situational awareness, and the mutual aid of The Crowd as self-organization. Formal organizations tend to think of The Crowd as an input function to their workflows. Their concerns therefore revolve around verifiability, bad actors, and predictability. A manifestation of this are the self-mapped roads in remote places via Open Street Map being grumbled over for not fitting into the data hierarchies of official responders. That is not the point of the maps being built.
>
> … These are people using a tool to their own ends, to support themselves, to gain better understanding of their world, not as a resource to be tapped. It is a group of people talking to itself. If institutions exist to serve collective purpose, their role here is to provide institutional knowledge (with awareness and self-reflection of bias), guiding frameworks (possibly), and response at scale (upon request). In this way, we can benefit from history and iterative learnings while escaping paternalistic ends…

> As a crowd comes to know itself better, the intelligence can becomes an embedded, rather than external, component. We start to see many eyes on the bugs of society.[13]

And networked, p2p reputational systems are rapidly becoming more effective than corporate branding or mass advertising campaigns at securing consumer attention. In a world where our attention is increasingly scarce and expensive to acquire, our peers are much better at getting our attention than are corporate advertisers. The reason is that, unlike corporations, our peers can interact with us; they can reciprocate our attention. As William Gillis argues, the more effective networked, p2p reputational systems become at providing the information we desire, the harder our attention will be for corporate advertisers to get hold of:

> … *Their whole empire* [i.e. of corporations like Google and Facebook that attempt to monetize attention through advertising revenue] *is predicated on the assumption that advertising dollars are even a thing.*
>
> But openness is antithetical to a core presupposition of advertising: people are susceptible to suggestion and anecdote because they don't have enough information–or time to process that information–when it comes to purchasing choices. Forget everything you've learned about madison avenue manipulations. Those manipulations are only possible when people have any reason to pay attention. Build a box that delivers all the relevant information and perfectly sorts through it in an easily manageable way and any form of advertising starts to look like laughable shucksterism. Who are you trying to fool? Why aren't you content to let your product speak for itself?
>
> In this sense much of the fertile territory being seized by Google is detrimental in the long run to one of its core income sources. As search improves and our instincts adapt to it there's simply no reason to click on the 'featured product' getting in the way of our actual results. The more intuitive, streamlined and efficient our product comparison the less need there is to pay any attention to anything else. And if the app providing our results is tampered with then we can swap to another app. Walk into any given store with its inventory already listed and analyzed on our phone. Of course advertising covers more than just price comparisons between laundry detergents, but there's no end to what can be made immediately transparent. "How cool is this product with a certain subculture or circle of my friends?" "Give me a weighted aggregate of consumer reports highlighting the ups and downs." "List common unforeseen complexities and consequences." "How would I go about navigating the experience of changing checking accounts?" Et cetera. Every conceivable variable. With ease of interface and sufficient algorithmic rigor one can easily recognize a tipping point.
>
> Algorithms trawling for greater targeting power on the part of advertisers are jumping at comparatively trivial increases in efficiency with serious diminishing returns. (And insofar as new understandings might inform actual development/policy wouldn't that a good thing?) Further, taken in a broad view, the issues of complexity to such datatrawling and analysis leans to the favor of consumers because there's

[13] David de Uguarte, "Ethics and the State is like Freedom and Tony Soprano," *Las Indias in English*, March 4, 2013 <english.lasindias.com>.

simply far more of us than there are sellers. Relatively simple advances in consumer analysis of sellers would drastically turn the tables against advertisers and corporate bargaining advantage in general. In such light their current golden age of analysis is but one last rich gasp.

In no way do I mean to underplay the threat posed by governments themselves, who surely have a huge investment in the establishment of institutions like Facebook and or projects like that of Palantir. At the end of the day they will remain a threat and continue working on these kinds of projects. But the context they're operating in makes a big difference. The NSA isn't going to cut Facebook a check to keep it afloat. The government simply doesn't have the kind of money that the private sector is putting in to distort the development of norms in social networking /communications in the first place. Those are slippery cultural /user-interface issues that are far too complex for the state to navigate with requisite nuance.

The sooner we take it upon ourselves to kill the advertising industry the less time it'll have to build weapons for the state.

Sure, like our current struggle to kill the IP Industry, it'll be a fight that'll last a while and involve complex cultural/political campaigns alongside purely technical ones. But at core it'll be a downhill battle for us. Easier to spread information–both technologically and culturally–than to contain it.[14]

III. Networked Certification, Reputational and Verification Mechanisms.

Without the current role of the state and other centralized institutions in overcoming the transaction costs of certifying quality and credit-worthiness, what is called "goodwill," or reputational effects, would likely take on much greater importance, with the patterns of exchange coalescing around social ties. This, too, would be a beneficial social effect of economic decentralization. Adem Kupi remarks on the role of the state in artificially lowering the transaction costs involved in establishing trust, underwriting risk, etc., in the anonymous transactions that occur in large markets:

> … The Security State makes it too easy for people to stop thinking… They've done the thinking for us and pre-limited our options…
>
> In the skeptical society, on the other hand, trust has to be earned, and people will rely on their local social networks to provide them with accurate information…
>
> The current growing ratio of noise to signal is putting pressure on the world to become more skeptical, which will put pressure on societies to shift away from guaranteeing security. They just won't be able to do it effectively. The idea of managing anything larger than a local area will become preposterous.[15]

[14] For more on the ideological inclinations of the managerial-professional classes, and their hostility to decentralist ideas, see Carson, "The Thermidor of the Progressives: Managerialist Liberalism's Hostility to Decentralized Organization," Center for a Stateless Society Paper No. 9 (Second Quarter 2010) <c4ss.org>.

[15] Clay Shirky, *Cognitive Surplus* (New York: The Penguin Press, 2010), pp. 152–153.

This applies to networked platforms as well as local economies—see below for more on "communities" based on networked platforms.

Even in the present economy, organization theory blogger quasibill writes of the benefits of fraternal organizations in facilitating exchange between their members. Newsletters contain ads "from members who market their small businesses to each other (contracting, printing, landscaping, etc.)" Quasibill asked a friend in a fraternal organization whether such ads paid off. The answer was "yes":

> He noted that most members preferred doing business within the organization because there was a social peer enforcement mechanism at work. Specifically, he noted that while a vendor might be willing to "work to rule" with many customers, or even be willing to file bankruptcy against general creditors, the social peer pressure that could be exerted through the organization made dealings within the organization more fair and certain. You could win your case in court on a legal technicality, but if the members of the organization determined that you weren't acting fairly, you were going to be ostracized from the organization before you could turn your head.[16]

The same was true, to a large extent, in the old Main Street business culture, when local merchants and tradesmen depended on repeat business from people they knew. Eric Frank Russell's story of Idle Jack, in "And Then There Were None"—set in the universe of Russell's "Great Explosion" series—is relevant here. The world in which the story takes place was founded by Gandhian refuges from the Terran Empire centuries before, and is organized more or less along the lines of market anarchy suggested by Josiah Warren. Land ownership is based on occupancy and use—no landlords—and the economy is based on a sort of labor exchange system ("obligations" or "obs"). A visitor wondered what the penalties were for running up obligations and then refusing to meet them. The answer took the form of a traditional morality lesson, the tale of Idle Jack, a "scratcher" ('One who lives by accepting obs but does nothing about wiping them out or planting any of his own.').

> 'Up to age sixteen Jack got away with it all along the line. He was only a kid, see? All kids tend to scratch to a certain extent. We expect it and allow for it. But after sixteen he was soon in the soup…
>
> 'He loafed around the town gathering obs by the armful. Meals, clothes and all sorts for the mere asking. It wasn't a big town. There are no big ones on this planet. They are just small enough for everybody to know everybody—and everyone does plenty of gabbing. Within a few months the entire town knew that Jack was a determined and incorrigible scratcher…
>
> 'Everything dried up… Wherever Jack went people gave him the, "I won't." He got no meals, no clothes, no company, no entertainment, nothing. He was avoided like a leper. Soon be became terribly hungry, busted into someone's larder one night, treated himself to the first square meal in a week.'
>
> 'What did they do about that?'
>
> 'Nothing, not a thing.'

[16] Willow Brugh, "Mutual Aid and The Crowd," *willowbl00*, April 22, 2014 <blog.bl00cyb.org>.

> 'That must have encouraged him some, mustn't it?'
>
> 'How could it?' asked Seth with a thin smile. 'It did him no good. Next day his belly was empty again. He was forced to repeat the performance. And the next day. And the next. People then became leery, locked up their stuff and kept watch on it. Circumstances grew harder and harder. They grew so unbearably hard that soon it was a lot easier to leave the town and try another one… '
>
> 'To do the same again,' Harrison prompted.
>
> 'With the same results for the same reasons,' Seth threw back at him. 'On he went to a third town, a fourth, a fifth, a twentieth. He was stubborn enough to be witless.'
>
> 'But he was getting by,' Harrison insisted. 'Taking all for nothing at the cost of moving around.'
>
> 'Oh, no he wasn't. Our towns are small, as I said. And people do plenty of visiting from one to another. In the second town Jack had to risk being seen and talked about by visitors from the first town. In the third town he had to cope with talkers from both the first and second ones. As he went on it became a whole lot worse. In the twentieth he had to chance being condemned by anyone coming from any of the previous nineteen… He never reached town number twenty-eight.'[17]

Social guarantees of trust become especially important if we reject the role of the state in enforcing debts on borrowers, under bankruptcy law. Dean Baker points out, in rather colorful language, the nature of strict bankruptcy laws as a form of welfare for the rich:

> The nanny state conservatives think that it is the role of the government to act as a strong-arm debt collector for businesses that did not accurately assess the risks associated with their loans… They want the government to chase after individual debtors, following them throughout their lives, to wring out every possible cent of debt repayment…
>
> … [I]nstead of having the incompetent lenders go out of business… the conservative nanny state stepped in to bail them out with the 2005 bankruptcy law, using the force of the government to squeeze every last cent from debtors. Under the new bankruptcy laws, the government will monitor debtors for many years after they have declared bankruptcy, seizing assets or garnishing wages for debts that may have been incurred 20 or 30 years in the past…
>
> … Historically, most loans required little involvement from the government because they were attached to physical property such as land, a house, or a car. If a debtor had fallen behind on his payments, then the role of the court in the debt collection process was essentially a one-time proposition: the court would simply require the debtor to turn over ownership of the relevant asset to the creditor, and the case would be over…

[17] William Gillis, "Let's Just Kill The Advertising Industry," *Human Iterations*, December 31, 2011 <humaniterations.wordpress.com>.

> However, in the last two decades there has been an explosion of debt, mostly credit card debt, that is not secured by a physical asset…[18]

More importantly, from the perspective of any potential malfeasant, is the consideration that one's livelihood—as illustrated by Russell's story of Idle Jack— depends on a good reputation. In a world where consumers turn to networked reputational mechanisms to avoid the risks of one-off transactions, and repeat business depends on one's reputation in the network, screwing over your customers amounts to shitting where you eat.

In a genuinely free market, all the licensing and certification regimes presently in place would be replaced by voluntary alternatives. Morris and Linda Tannehill write:

> One such market protection would be consumer rating services which would test and rate various products according to safety, effectiveness, cost, etc. Since the whole existence of these rating services would depend on their being right in their product evaluations, they would be extremely thorough in their tests, scrupulously honest in their reports, and nearly impossible to bribe…
>
> Businesses whose products were potentially dangerous to consumers would be especially dependent on a good reputation. Drug manufacturers, for example, would know that if their products caused any illness or death through poor quality, insufficient research and preparation, or inadequate warnings on the labels they would lose customers by the thousands. The good reputation of a manufacturer's brand name would be its most precious asset… Besides this, drug stores would strive for a reputation of stocking only products which were high quality, safe when properly used, and adequately labeled…
>
> A good reputation would also be important to doctors in the absence of government-required licensing… [R]eputable physicians would probably form medical organizations which would only sanction competent doctors, thereby providing consumers with a guide…[19]

Sam Kazman, in a 1998 article written fairly early in the move toward federal standards for organic labeling, described the success of voluntary certification in the past:

> As demand for organic food has grown, private organic-certifying agencies have arisen. Some have stricter standards than others, and some may have standards and enforcement practices so lenient that they are practically meaningless. But to the extent that differences between them really mean something to consumers, those consumers are fully capable of distinguishing between them (or of choosing retailers who do the job for them)…
>
> The lack of any pressing necessity for [government] involvement is clear. The large organic-foodstore chains already have established connections with suppliers and

[18] Adem Kupi, "The Security State vs. the Skeptical Society," *A Pox on All Their Houses*, July 12, 2005 <poxy-houses.blogspot.com>.

[19] Quasibill, "Function Follows Form, or Vice Versa (except if either one contradicts your predetermined outcomes)," *The Bell Tower*, June 10, 2008 <the-bell-tower.blogspot.com>.

> certifying agencies; the same is true of conventional supermarket chains that carry organic products…
>
> Organic growers themselves are also capable of doing without a cumbersome federal definition. According to one organic-farming newsletter, "many growers say that if certified organic becomes too difficult, or meaningless, they will just use another word to market their produce."…
>
> Consumers who care about such issues don't need the force of law in order to obtain the information they want about food products. USDA has already announced that its eventual definition will not allow genetically modified foods, but suppose it had ruled otherwise. Producers of organic foods that were *not* genetically modified could still communicate that fact to interested consumers—through labeling, through advertising, and even through private organic-certification systems that make a point of prohibiting bioengineered products. Information that groups of consumers want will make its way to them without legal compulsion.

In fact, legal compulsion is used more often to *suppress* free commercial speech, in the interest of those whose products include bioengineered food, by prohibiting the labeling of GMO-free products. Kazman goes on to describe the free market certification regime for kosher foods:

> For [those concerned about the strictness of the standard met by the product] there are competing rabbinical inspection boards, each with a different logo. With the possible exception of guarding against outright fraud, there is little need for government involvement… Consumers seem capable of sorting things out peacefully.[20]

There have since been attempts to establish self-organized, DIY alternatives to organic certification that clearly identify produce as organic (with a wink and a nudge) without actually using the words "certified organic." Your grocer or natural foods cooperative may have some produce that's labeled as "no-spray" without actually being certified organic. Organic certification typically results in a 50% markup over no-spray produce. The organic certifying bodies amount to a cartel whose real function is to erect an entry barrier and protect greenwashed capitalist agribusiness from small producers.

In the UK, organic growers have established an I Can't Believe It's Not Organic label in competition with official organic certification.

> In July 2011, Jyoti Fernandes and Simon Fairlie were hauled up before the Soil Association tribunal for giving a few wheelbarrows of grass cuttings from a nearby vegetable garden (which is farmed 100 per cent organically but not certified) to their cows; and feeding stale bread to pigs from a bakery that had recently pulled out of organic registration. As a result they have taken the cows and pigs out of the organic certification system. Simon and Jyoti are not alone in quitting the Soil Association. Many small farmers and smallholders have discovered (either before applying or after) that the way the organic certification system is structured is both too impractical

[20] Eric Frank Russell, "And Then There Were None," *Astounding Science Fiction*, vol. XLVII, no.4 (June 1951) <www.abelard.org>.

and too expensive for small-scale local producers—particularly those who own limited amounts of land, and hence have to rely on rented land, imported hay or waste products.

… [T]e entire organic registration system… is topsy turvy—enforcing additional bureaucracy and labelling on those who farm organically, whilst farmers who resort to chemicals and poisons to increase their yields are defined as "conventional".

There are many smaller-scale alternative organisations and labelling systems in existence, supporting and promoting organic agriculture both nationally and locally, and working responsively with their members. We believe this choice makes for a healthy network amongst small producers and growers…

ICBINO will be informal. The labelling system will involve no bureaucracy, relying on trust, peer review and informed cus- tomer consent to maintain standards. Here are the proposed rules:

(1) There is a one-off charge of £5 for affiliation, to cover admin.

(2) Members will be supplied with the template for the ICBINO logo, to use on all products that comply.

(3) Members will be required to sign a guarantee that the ICBINO logo will only be used on produce sourced from land that has had no chemical fertilizers or pesticides or GM material applied in the last three years, with the following exceptions: livestock fed on waste food constituting no more than 25 per cent of their diet; livestock fed on specialist foods which are unobtainable organically (eg molasses) which constitute no more than 5 per cent of their diet; processed foods which contain modest amounts of non-organic additives because organic equivalents cannot be sourced from the UK; land manured with sewage waste, providing it conforms to current environmental standards.

(4) Members must allow other members to visit, inspect and report on their land and farming methods, by appointment.

(5) Members must organise and promote at least one open day every year when customers and the public can inspect the farm.

(6) Members will be removed from the register if their standards are deemed unacceptable.[21]

The basic idea, in the words of Arun Sundarajan, is to replace regulation with reputation.

> Because salient details are made visible not only to transacting parties but to the entire community, sellers (and buyers) have to stay honest and reliable to stay in business. In the sharing economy, *reputation* serves as the digital institution that protects buyers and prevents the market failure that economists and policy makers worry about…[22]

[21] Dean Baker, *The Conservative Nanny State: How the Wealthy Use the Government to Stay Rich and Get Richer* (Washington, D.C.: Center for Economic and Policy Research, 2000), pp. 59–61.

[22] Morris and Linda Tannehill, *The Market for Liberty* (New York: Laissez Faire Books, 1984), pp. 49–50.

The present system of regulation—of certification either by government inspectors or by one's peers in professional licensing bodies—is in principle already a reputational system. The inspector and the members of a professional association are, after all, just human beings who vouch for the quality of your goods and services. The problem is that a reputation for quality that derives from such authority is far more likely to be false than one that derives from one's actual customers.

In addition, licensing associations in practice often do less to prevent malpractice by their members than to cover it up for them.[23]

Potential Building Blocks. We already saw, in Chapter Five, the services medieval guilds performed for member enterprises, by certifying the quality of their wares. In addition, the guilds' functions of cooperative purchasing for their members would give them a great deal of collective bargaining power in negotiating quality standards on behalf of the membership. And as we saw, David de Ugarte cites tenth century Jewish merchants in the Maghreb as anticipating the reputational mechanisms ia phyle.[24]

The central function of any networked "licensing" regime, according to Nils Ipsen, is the "dissemination of information and publication of the individual reputations." This assumes the function taking place against a common social background, ranging from informational reputational mechanisms among "very small groups, such as the neighboring ranchers in Shasta County," to more formalized mechanisms in large groups like the New York Diamond Dealers Club (within which most global diamond trade takes place). The DDC, Ipsen says, "not only offers a secure trading hall but also acts as a chamber of commerce. Based on this, the DDC defines the rules governing diamond trading and provides a mandatory private arbitration system."

> But the DDC not only provides the infrastructure for the trading. It furthermore guarantees the exchange of information on the reputation of the individual dealers with various means so as to ensure compliance with the rulings of its own arbitration body. For this purpose, photographs of visitors and new traders are displayed on the walls of the common trading hall with information about their reputations and their personal references. These are complemented by photos of those who have failed to pay their debts…[25]

As another example, Ipsen mentions the Memphis Cotton Exchange, which functions much like the DDC: "historically, the members of the MCE located their offices on one street in Memphis where a shared market center enabled the rapid exchange of information."[26]

Gunnar Schuppert generalizes on these examples:

> The existence of such a social network, which I refer to as a reputation community, can involve a professional group with specific professional-ethnical standards or, as in the case of the Jewish diamond traders, a religious group. The community of Jew-

[23] Sam Kazman, "The Mother of All Food Fights," *The Freeman: Ideas on Liberty* 48:11 (November 1998) <www.fee.org>.

[24] "I Can't Believe It's Not Organic: A new DIY small producers' association is germinating," *The Land* 12 (Summer 2012) <www.thelandmagazine.org.uk>.

[25] Arun Sundararajan, "From Airbnb and Coursera to Uber: Government Shouldn't Regulate the Sharing Economy," *Wired.com*, October 22, 2012 <www.wired.com>.

[26] See Chapter Sixteen of Kevin Carson, *Organization Theory: A Libertarian Perspective* (2008).

> ish diamond traders in New York clearly exercises "reputation-based rule enforcement" as specified here…[27]

Schuppert argue that, in frameworks of this sort, trust is grounded in shared community rather than the state. And such trust networks are more likely to be stable against a background of long-term community relationships, rather than one-off dealings.

> … private regulatory systems do not arise "spontaneously" out of nothing, but build on an existing institutional infrastructure consisting of social or religious networks. [Amitai] Aviram cites as examples the Pax Dei movement and the German Hanse or Hanseatic League.
>
> In order to explain the functioning of such social and religious networks Aviram… distinguishes two different stages of the evolutionary process that results in a private legal system: "First, a network creating a centralized bonding mechanism would form (most likely, not as an end of its own, but as a side effect of some other function the network serves)." And second, "the network would undertake regulating behavior, using its enforcement ability." Social networks… facilitate centralized bonding and for this purpose use reputation bonds. Such reputation bonds would be ineffective when individuals expect the network to fail. Many social networks, however, would continue to exist over long periods of time. As an example, he refers to "one's neighbors" who "will continue to affect one's social life indefinitely."…
>
> Aviram describes the reputation and punishment mechanism of the social network as follows: "By gossiping about each other within the social network, and by reacting to the gossip according to common social norms, the social network can align most members' responses to any member's deviant behavior. When members of the same social circle are also part of another network that attempts to regulate behavior, they will care for their reputations, for while the regulating network cannot in itself harm them, the negative reputation they build will carry on to the social network, and there the centralized bonding mechanism will punish them."…
>
> Aviram's thesis is that such social and religious networks initially only fulfill functions with low implementation costs, but with the strengthening of the implementation mechanisms the aspect of cost becomes less important. Thus, according to his conclusions, when a need for regulation arises the existing networks continue to to develop so as to provide this necessary regulation. The precondition for the emergence of a private regulatory system of this kind is always the existence of a network-like demonstrable homogenous group—a close-knit community comprised of members united by similar convictions and values.[28]

The parallels to the phyle, which de Ugarte describes as emerging out of a preexisting networked cultural community, should be obvious.

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[27] David de Ugarte, *Phyles*, pp. 128–129.

[28] Gunnar Folke Schuppert, "Law Without a State? A 'New Interplay' Between State and Nonstate Actors in Governance by Rule Making," in Thomas Risse, ed., *Governance Without a State? Policies and Politics in Areas of Limited Statehood* (New York: Columbia University Press, 2011), p. 68.

There are also obvious parallels to the kinds of governance mechanisms for common pool resources that were the main focus of Elinor Ostrom's research.

Pierre Omidyar originally founded eBay on the assumption that "people are basically good"; within weeks, so many transactions had involved cheating that he introduced a reputation system based on mutual reviews for honesty, promptness, etc., between buyers and sellers.[29]

It was designed, in Clay Shirky's words, "to cast the shadow of the future over both parties, giving each an incentive to maintain or improve their standing on the site… "[30] As Arun Sundararajan argues,

> Digital technologies created the sharing economy. Simply put, this economy facilitates new markets by matching providers who have specific assets or skills with the people who need them, dramatically expanding the possibilities for private commercial exchange of services between consenting entities.
>
> This economy couldn't exist at scale in the past because transaction costs were too high. But as Hal Varian reminded us at his Ely lecture to the American Economic Association, the internet and information technologies continually reduce trading frictions over time, largely by facilitating better measurement, accountability, and verification.
>
> And now, these very technologies and the changes they engender provide the means for the sharing economy to regulate itself.
>
> Technology enables digitally mediated self-policing: the reputation systems and monitoring tools that dramatically smooth the safety and friction of peer-to-peer transacting parties without requiring centralized intervention, and which are now creating distributed digital institutions that reduce the need for government oversight.
>
> Think about eBay for a moment, even though it's largely for owning goods and not accessing services. It seemed inconceivable in the mid-1990s that it could grow into more than a marketplace for trading Beanie Babies. How, we asked ourselves, would strangers in different countries trade products of unverifiable quality and authenticity— without some form of central intermediation or control? But now, it comprises billions of dollars' worth of trade; people trustingly buy even their cars there.
>
> Because salient details are made visible not only to transacting parties but to the entire community, sellers (and buyers) have to stay honest and reliable to stay in business. In the sharing economy, reputation serves as the digital institution that protects buyers and prevents the market failure that economists and policy makers worry about.[31]

Other similar mechanisms include the ratings of service providers on Angie's list, and the ratings of guests and hosts on AirBNB.

[29] *Ibid*., pp. 68–69.
[30] *Ibid*., p. 69.
[31] *Ibid*., pp. 70–71.

In the fictional world, we already saw in an earlier chapter how people linked to the Darknet could see the reputational tags attached to other people. And in the post-scarcity world of Cory Doctorow's *Down and Out in the Magic Kingdom*, material goods like food, housing and manufactured goods are freely available at no cost. Individuals accumulate a personal reputation score called "whuffie" through reliability and willingness to undertake effort on behalf of others, and general performance in the p2p groups that dominate society. Whuffie is used to purchase things that are still scarce (mostly things requiring human attention, like service in a bar, or scarce locational goods like an apartment with a good view or use of a convenient meeting hall).

It's possible to encode a great deal of information about the sourcing and quality standards of a product into tags on the product itself. John Robb describes how it works with the Gulf Wild program:

> When you buy a fish that has a Gulf Wild ID number on it, you can find out everything about it.
>
> Simply enter this ID number on their website or (cell phone) and it will provide you with:
>
> The bio and history of the fisherman who caught the fish.
>
> What the fish is, where the fish was caught (with a map) down to 10 miles, and when it was caught.
>
> Info on fishing practices (e.g. was it caught as part of a sustainable fisheries program?)…
>
> I believe we're going to see programs like this for all of the food (and an increasing number of products) we buy, from meats to vegetables.
>
> Why? Info like this is addicting. Once you get it, you want it on everything.
>
> Fortunately, it's also really easy to put a service like this together for local producers, and that's a good thing.
>
> Here's why: This type of insight would positively differentiate fresh, high quality local produce from the generic products of indefinite age, quality, and origin we get from the global industrial system.[32]

There's also great potential for activist organizations to compile databases of corporate misbehavior, with consumers checking products against the database by simply scanning a product bar code with a smart phone application. One step in this direction is Boycott SOPA,

> an Android app that scans barcodes and tells you whether an object's manufacturer/publisher is a supporter of the much maligned Stop Online Piracy Act.
>
> If you've ever scanned a barcode on your Android phone to look up a book or CD on Amazon, Boycott SOPA works in exactly the same way: First you have to install the ZXing Barcode Scanner app, but then you simply go around pointing your phone's camera at product barcodes. Boycott SOPA gives you a big red cross if the product is distributed by a SOPA supporter, or a green tick if it's "clean."…

[32] Shirky, *Cognitive Surplus*, p. 177.

> … The idea is that you should scan everything that you buy at the supermarket, and refuse to put any SOPA-backed products into your basket. It's a very grandiose idea, and in a day and age where shoppers regularly eschew a selection of products on principle ("damn baby-killing multinationals!"), or buy entirely local produce, Boycott SOPA fits right in.
>
> Inadvertently, though, the developers of Boycott SOPA have given us a tantalizing hint of how technology empowers consumers. Imagine for a second if you chopped "SOPA" from the name of the app and simply called it "Boycott." Imagine if there was an Android app that let you boycott whatever you wanted…
>
> You could even take it one step further and make Boycott the one-stop-shop for all of your political needs. Imagine if you could scan a cereal box and find out that the company's CEO likes to hunt rhinos, ride elephants, and eat shark fin soup—at the same time. Imagine if you could scan a video game box and immediately see all of the active legislation, the Representative sponsors and supporters, and how much money they've received from industry lobbying. You could even go as far as equipping the app with facial recognition, so that you can point your phone at a Senator's face on the TV and quickly find out whether what he's saying actually jibes with his real world behavior and voting record. This isn't a futuristic concept; we could do this right now with the tech we have.[33]

An already-existing example is a mobile barcode-scanning app for boycotting Koch Industries products.[34]

One of the most promising systems to date is OpenQRS, a project aimed at developing "an open source ecosystem for open data monitoring of health care devices and empowers health care product designers to build monitoring for quality, reliability and safety data into their product's design, to ensure that these health care products do what they promise to do." It's intended to do this even—or especially—in Third World countries without a functioning regulatory state.[35]

Take this interlocking system of mobile electronics and reputational metrics a bit further, and you get something like the Collective Contracts we discussed in an earlier chapter. Doc Searls speculates on how such a system might work:

> As you prepare for your guests, you discover that your espresso machine isn't working and you need another one. So you pull [a] hand-held device from your pocket, scan the little square code on the back of the machine, and tell your hand-held, by voice, that this one is broken and you need another one… An "intentcast" goes out to the marketplace, revealing only what's required to attract offers. No personal information is revealed, except to vendors with whom you already have a trusted relationship.
>
> Within a minute offers come in, displayed on your device. You compare the offers and pick an espresso machine to rent from a reputable vendor who also can fix your

[33] Shirky, *Here Comes Everybody*, p. 284.

[34] Arun Sundararajan, "From Airbnb and Coursera to Uber: Government Shouldn't Regulate the Sharing Economy," *Wired.com*, October 22, 2012 <www.wired.com>.

[35] John Robb, "Here's How to Build a More Resilient Food System… ," *Resilient Communities*, April 10, 2003 <www.resilientcommunities.com>.

> old one. When the replacement arrives, the delivery service scans and picks up the broken machine and transports it to the vendor, who has agreed to your service conditions by committing not to share any of your data with other parties and not to put you on a list for promotional messages. The agreement happened automatically when your intentcast went out and your terms matched up with the vendor's…
>
> Since the Industrial Revolution, the only way a company could scale up in productivity and profit was by treating customers as populations rather than as individuals—and by treating employees as positions on an organization chart rather than as unique sources of talent and ideas. Anything that stood in the way of larger scale tended to be dismissed.
>
> The Internet has challenged that system by giving individuals the same power. Any of us can now communicate with anybody else, anywhere in the world, at costs close to zero…
>
> … In the not-too-distant future, you will be able, for example, to change your contact information with many vendors at once, rather than many times, over and over, at many different websites. You will declare your own policies, preferences and terms of engagement—and do it in ways that can be automated both for you and the companies you engage. You will no longer have to "accept" agreements that aren't worth reading because, as we all know, they cover the other party's butt but expose yours…
>
> Once economic signaling starts to crank up on the demand side of the marketplace, the supply side will have to start regarding customers as complex and fully empowered actors. Consider what's already happening with an early species of VRM tools: browser add-ons for blocking ads and tracking the trackers. Usage of these is on the rise.[36]

Silk Road was a paradigmatic example of what networked, horizontal reputational mechanisms could accomplish, even in a black market where sellers and buyers were forced to operate underground.

> Functioning much like a tweaked Amazon or eBay, it offered a host of useful features that helped facilitate trust between sellers and buyers, such as an Escrow payment system, seller feedback, and dispute resolution. According to their civil forfeiture complaint… , the FBI purchased samples from SR's drug listings and laboratory-tested them… , and typically found high levels of product purity matching what was advertised. The reputation-based nature of SR, combined with often accurate information on seller profile pages and the official forums, empowered buyers to make informed choices and remain safe.[37]

A recent development, the Open Value Network, has especially interesting implications for transparent supply chains and the internal transparency of networked pro-

[36] Sebastian Anthony, "Boycott SOPA: An Android app that terrifies publishers and politicians," *ExtremeTech*, January 9, 2012 <www.extremetech.com>.

[37] Clare O'Connor, "New App Lets You Boycott Koch Brothers, Monsanto And More By Scanning Your Shopping Cart," *Forbes*, May 14, 2013 <www.forbes.com>.

duction processes. www.newschallenge.org/challenge/healthdata/entries/openqrs-an-open-source-communitydeveloping-tools-to-assure-the-quality-reliability-and-safety-of-health-care-devices>.

> The economy currently works with the collaboration of multiple process around the world that coordinate their efforts to produce products.
>
> At the same time each production process has a wealth of information about its functioning that is kept away from the public eye.
>
> The OVN model proposes that each production process publishes all information about its internal functioning. That allows production methods to be copied. Provides accountability. Public view allows people to propose better solutions and to detect errors sooner. Moreover, ecological and other externalities are easily Identifiable.
>
> The OVN model also proposes that information about the supply chains be also visible. All production processes should provide information about their product and the requirements they have in tools, materials and human resources as well as the current suppliers and customers.
>
> The ability to search and analyze these data allows for different groups that were otherwise isolated and small to interconnect. This has the profound advantage that these small groups can cooperate, coproduce value and thus be able to compete with traditional companies with a higher number of capital assets. Moreover the information about the supply chains allows people to suggest more efficient supply chains and at the same time bypass the supply chain middlemen entirely.

Food networks like Fair Trade networks, Community-Supported Agriculture, buying clubs, and the like, are well suited to a transparency model similar to the Open Value Network.[38]

The blockchain ledger, originally associated with Bitcoin and other cryptocurrencies in that ecosystem, also has independent value as an internal accounting system for networks of all kinds.

> It's important to recognize that blockchain technology is not confined to digital currency applications. It can be applied to a wide variety of circumstances in which a community of players—in markets, commons or other circumstances—want reliable systems to manage their inter-relationships on network platforms.
>
> … Former FCC Chairman Reed Hundt has proposed using the block chain technology as a way to create distributed networks of solar power on residential houses. The ledger would keep track of how much energy a given homeowner has generated and shared with others, or consumed, and it would enable the efficient organization of decentralized solar grids.
>
> … In a comment to a blog post a few days ago, Primavera de Filippi, one of the leading tech/legal thinkers about blockchain technology, wrote:
>
> … It is my belief that the blockchain can help implement new forms commons-based governance that could greatly benefits the CBPP ecosystem.

[38] Kate Ettinger, "OpenQRS: Open Source Tools to Assure the Quality, Reliability and Safety of Health Care Devices," *Knight Foundation: Knight News Challenge*, September 16, 2013 <www.openqrs.org>

> For a long time, commons-based communities have been institutionalized around centralized or federated structures, which might bring a series of trade-offs in terms of democratic governance, flexibility, and ability to evolve. These institutions were built, for the most part, to facilitate the coordination of disparate groups of people that would otherwise have had a hard time coordinating themselves, because of either scale or lack of proper coordination mechanisms. They also served the purpose of establishing trust among groups that did not engage into sufficiently frequent and repeated interactions.
>
> *Today, traditional issues related to shared common-pool resources—such as the free rider problem or the tragedy of the commons—could be addressed with the implementation of blockchain-based governance, through the adoption of transparent decision-making procedures and the introduction decentralized incentives systems for collaboration and cooperation. The transparent and decentralized nature of the blockchain makes it easier for small and large communities to reach consensus and implement innovative forms of self-governance…*
>
> *Decentralized blockchain technologies bring trust and coordination to shared resource pools, enabling new models of non-hierarchical governance, where intelligence is spread on the edges of the network instead of being concentrated at the center. Flexible decentralized organizations could entirely replace the hierarchical format of current centralized formations, enabling commons-based communities to operate in an more decentralized manner. Instead of relying on traditional topdown decision making procedures, the blockchain allows for such procedures to be entirely* crowdsourced, delegating to the community's collective intelligence the responsibility to monitor and evaluate its own achievements.
>
> *While online communities will probably be the first one to experiment with these new apparatus, as the ease of creating these organization decreases through standardization, online communities could be easily brought offline to create and build new organizations that operates in the physical world.*
>
> Thus far, while commons-based peer-production communities have flourished in many fields of endeavor, they have had a hard scaling up, without turning into more bureaucratic and centralized institutions. It is my hope that, with the new opportunities provided by blockchain technologies, we can come up with new applications that can support the operation of these communities (both in the digital and physical world) in a more distributed and decentralized manner.[39]

In particular, Jutta Steiner speculates that blockchain ledgers can be used to make supply chains more transparent by providing "a true chain of custody, along even the most complex supply chains, at a very low cost."[40]

[39] Doc Searls, "The Customer as a God," *Wall Street Journal*, July 20, 2012 <online.wsj.com/article/SB10000872396390444873204577535352521092154.html>.

[40] Gabriel Amadej, "The Black Market Correction," *Center for a Stateless Society*, April 16, 2014 <c4ss.org>.

IV. Commons-Based Governance and Vernacular Law

History is replete with examples of self-organized institutions for governance outside the state, going back to the neolithic village commune with its open field system, which persisted for millennia before the rise of the state. As Pyotr Kropotkin recounts in *Mutual Aid* and *The State*, popular institutions for self-governance like mutuals, friendly societies and other manifestations of social solidarity persisted for centuries or millennia more with states and parasitic class systems superimposed on them—much of the time with the state actively hostile to them.

The commons, as described by David Bollier and Burns Weston, is a vernacular, social governance institution organized outside the state.

> The Commons is a regime for managing common-pool resources that eschews individual property rights and State control. It is a system of governance that relies on common property arrangements that tend to be self-organized and enforced in complex and sometimes idiosyncratic ways (which distinguish it from communism, a top-down, State-directed mode of governance whose historical record has been unimpressive). Today the commons can be seen in such diverse resources as the Internet, rural forests, fisheries, town squares, universities and community life.
>
> A commons is generally governed by what we call Vernacular Law—the "unofficial" norms, institutions and procedures that a peer community devises to manage its resources on its own, and typically democratically. State law and action may set the parameters within which Vernacular Law operates, but the State does not directly control how a given commons is organized and managed.[41]

Their concept of Vernacular Law borrows Ivan Illich's term "vernacular," which includes the entire range of "informal, everyday spaces in people's lives where they negotiate their own rules and devise their own norms and practices." Vernacular Law emerges from "the informal, unofficial zones of society"; its "matrix of socially negotiated values, principles and rules are what make a commons work."[42]

[41] Dimitris, "Open Value Networks," *CommonsFest*, April 3, 2015 <commonsfest.info>.

[42] David Bollier, "The Blockchain: A Promising New Infrastructure for Online Commons," *P2P Foundation Blog*, March 12, 2015 <blog.p2pfoundation.net>.

9. The Open Source Labor Board

For some eighty years, since the New Deal labor accord, the protection of worker rights has centered on the use of large, hierarchical institutions (bureaucratic unions run by the labor establishment, labor boards, OSHA, etc.), in theory, to regulate other large, hierarchical institutions (corporations) and limit their power.

The problem, as in all the other examples of "countervailing power" examined in this book, was that the relationship between institutions was at least as collusive as it was countervailing. Indeed the origins of the New Deal labor pact lie in corporate management's need for stable control of the production process.

The domesticated industrial unions of the CIO, under the Wagner Act, to a large extent served the same functions performed by company unions under the American Plan. Corporate management enlisted the labor bureaucracy as a junior member of the ruling class, in order to provide social stability in the workplace.

The New Deal business coalition centered on large, capital-intensive, massproduction industry. For such industries, labor costs were a comparatively modest part of total unit costs. And given the long planning horizons of the "technostructure" (as described by John Kenneth Galbraith)[1] and the vulnerability to output disruptions in industries where idle capacity was an enormous source of cost, it was in the interest of such companies to trade productivity-based wage increases, a grievance process and seniority-based job security in return for an end to wildcat strikes, slowdowns, walkouts and sitdowns. The Wagner regime was no doubt undertaken in response to pressure from such labor action, and required concessions from management they'd have preferred to do without in an ideal world. And labor definitely got something in return. But the single most important function of the New Deal labaccord, from the standpoint of American capitalism, was to enlist the union leadership into enforcing contracts against wildcat strikes and other disruptions by its own rank-and-file. To quote Staughton Lynd, CIO founder John L. Lewis "went out of his way to assure the business community that if they bargained with the CIO such phenomena as wildcat strikes would become a thing of the past."[2]

The "critical elements" of the Wagner model, in Lynd's words, were

> 1) Exclusive representation of a bargaining unit by a single union; 2) The dues checkoff, whereby the employer deducts dues for the union from the paycheck of every member of the bargaining unit; 3) A clause prohibiting strikes and slowdowns for the duration of the contract; 4) A "management prerogatives" clause giving the employer the right to make investment decisions unilaterally.[3]

[1] Jutta Steiner, "Blockchain Can Bring Transparency to Supply Chains," *Provenance*, June 19, 2015 <www.businessoffashion.com>.

[2] David Bollier and Burns Weston, "Green Governance: Re-imagining our Stewardship of Nature," *CSRWire*, November 29, 2013 <www.csrwire.com>.

[3] Bollier and Weston, "The Importance of Vernacular Law in Solving Ecological Problems," *CSRWire*, December 13, 2013 <www.csrwire.com>.

Indeed the central principle of the labor pact was "let management manage." Or as Erik Forman put it, such "progressive" legislation was intended to prevent

> obstructions to the free flow of commerce" by removing class struggle from the shop floors and streets and confining it to offices and courtrooms. Under the governmentrun procedure, the bare-knuckled confrontations that had previously forced bosses to negotiate would be replaced by workplace-based elections for union recognition supervised by the National Labor Relations Board (NLRB). Union organizing was to become a "gentleman's game."[4]

Again, the advantages of job security and middle class wages for workers were real. Management did have to trade something for stability and a free hand. But that's moot, because corporate America has decided these past thirty years or so that the New Deal labor accord no longer suits its needs. Union-busting is the order of the day, private sector union membership has shrunk to record lows, and unionized industries are extorting harsh concessions from surviving unions lest they close the remaining plants and shift production overseas.

The mid-20th century labor accord, under both the American New Deal and Western European social democracy, was also based on what Guy Standing calls "labourism." Unlike earlier socialist and anarchist models that looked forward to increasing leisure and autonomy and a shrinkage of both the cash nexus and the wage system, social democracy and industrial unionism presupposed universal fulltime employment at wage labor as the norm. It aimed at "full employment" with good wages, benefits and job security, with the understanding that management would be allowed to manage and labor would stay out of matters regarded as "management prerogatives" in return for these things. The "full employment" agenda meant

> all men in full-time jobs. Besides being sexist, this neglected all forms of work that were not labour (including reproductive work in the home, caring for others, work in the community, and other self-chosen activities). It also erased a vision of freedom from labour that had figured powerfully in radical thinking in previous ages.[5]

But since then—especially in the past two decades—the conventional fulltime wage employment model has become increasingly irrelevant. The size of the full time wage labor force has steadily shrunk as a portion of the total economy; both the permanently unemployed and the precariat (the underemployed, parttime workers, temporary workers, and guest workers) have grown as a share of the economy. For these workers the old model of a workplace-based social safety net does not exist, and it has been radically scaled back even for remaining full-time workers. Further, the precariat for the most part do not identify with the workplace or wage employment as their parents and grandparents, and often have value systems more in common with earlier socialists who saw their economic identity in terms of social or guild relations outside the workplace.

> Put bluntly, the proletariat's representatives demand decent labour, lots of it; the precariat wishes to escape from labour, materially and psychologically, because its

[4] John Kenneth Galbraith, *The New Industrial State* (New York: Signet Books, 1967).

[5] Andy Piascik and Staughton Lynd, "An Interview With Staughton Lynd About the Labor Movement," *ZNet*, April 1, 2014 <zcomm.org>.

> labour is instrumental, not self-defining. Many in the precariat do not even aspire to secure labour. They saw their parents trapped in long-term jobs, too frightened to leave, partly because they would have lost modest enterprise benefits that depended on 'years of service'. But in any event, those jobs are no longer on offer to the precariat. Twentiethcentury spheres of labour protection—labour law, labour regulations, collective bargaining, labourist social security—were constructed around the image of the firm, fixed workplaces, and fixed working days and work-weeks that apply only to a minority in today's tertiary online society. While proletarian consciousness is linked to long-term security in a firm, mine, factory or office, the precariat's consciousness is linked to a search for security outside the workplace.
>
> The precariat is not a 'proto-proletariat', that is, becoming like the proletariat. But the centralization of unstable labour to global capitalism is also why it is not an underclass, as some would have it. According to Marx, the proletariat wanted to abolish itself. The same could be said of the precariat. But the proletariat wanted thereby to universalize stable labour. And whereas it had a material interest in economic growth and the fiction of full employment, the precariat has an interest in recapturing a progressive vision of 'freedom of labour', so establishing a meaningful right to work.[6]

All this suggests we need a new model for labor relations.

I. Historic Models

The model of labor struggle before Wagner, which could be characterized as a form of asymmetric warfare within the workplace, centered on the kinds of activity mentioned in the old Wobbly pamphlet "How to Fire Your Boss." As that pamphlet argues, the conventional strike in its current form is about the least effective form of action available to organized labor.

> The bosses, with their large financial reserves, are better able to withstand a long drawn-out strike than the workers… And worst of all, a long walk-out only gives the boss a chance to replace striking workers with a scab (replacement) workforce.
>
> Workers are far more effective when they take direct action while still on the job. By deliberately reducing the boss' profits while continuing to collect wages, you can cripple the boss without giving some scab the opportunity to take your job. Direct action, by definition, means those tactics workers can undertake themselves, without the help of government agencies, union bureaucrats, or high-priced lawyers.[7]

Instead of conventional strikes, "How to Fire Your Boss" recommends such forms of direct action as the slowdown, "work to rule" strikes, "good work" strikes, selective strikes (brief, unannounced strikes at random intervals), whistleblowing and sick-ins. These are all ways to raise

[6] *Ibid*.

[7] Erik Forman, "Revolt in Fast Food Nation: The Wobblies Take on Jimmy John's," in Immanuel Ness, ed. *New Forms of Worker Organization: The Syndicalist and Autonomist Restoration of Class-Struggle Unionism* (Oakland: PM Press, 2014), p. 211.

costs on the job without giving the boss a chance to hire scabs. A radical British workers' daily, the *Daily Herald*, coined the apt phrase "Staying in on Strike" as an alternative to going out on strike to be starved.[8]

Networked resistance isn't a replacement, but a complement to these earlier forms of direct action. The networked asymmetric warfare model can incorporate such earlier forms of direct action into a higher synthesis.

Minority Unionism. The tactics used by workers before Wagner included what former I.W.W. General Secretary-Treasurer Alexis Buss called "minority unionism."

> … [W]e need to break out of the current model, one that has come to rely on a recipe increasingly difficult to prepare: a majority of workers vote a union in, a contract is bargained…
>
> Minority unionism happens on our own terms, regardless of legal recognition…
>
> The labor movement was not built through majority unionism—it couldn't have been.[9]
>
> … We must stop making gaining legal recognition and a contract the point of our organizing…
>
> We have to bring about a situation where the bosses, not the union, want the contract. We need to create situations where bosses will offer us concessions to get our cooperation. Make them beg for It.[10]

Joel Rogers and Richard Freeman argue for minority unionism under the term "Open Source Unionism":

> The first constitution of the American Federation of Labor, adopted at its founding in 1886, declared the new organization open to the membership of any "seven wage workers of good character, and favorable to Trade Unions, and not members of any body affiliated with this Federation." Tens of thousands of such groups applied for and received direct affiliation with the national federation…
>
> The tactic was particularly prevalent during peak periods of union organization, such as the turn of the twentieth century and again in the 1930s, when workers who did not fit well into their established forms sought to join unions. During these periods another union formation was also widespread: "minority" or "members only" unions, which offered representation to workers without a demonstrated pro-union majority at their worksite. Such nonmajority unions were critical to organizing new sectors of American industry, providing a union presence in the workplace well before an employer recognized a collective-bargaining unit. Most of the early organizing of the industrial trades, for example, and of early industrial unions like the mineworkers and steelworkers, was achieved through such minority unions.

[8] Guy Standing, *A Precariat Charter: From Denizens to Citizens* (London, New Delhi, New York, Sydney: Bloomsbury, 2014), p. 16.

[9] *Ibid*., pp. 17–18

[10] "How to Fire Your Boss: A Worker's Guide to Direct Action" <home.interlog.com>. The I.W.W. no longer endorses this pamphlet in its original form, and reproduces only a heavily toned down version at its website. It has disavowed portions of the pamphlet—particularly the section on industrial sabotage—in recent years.

After World War II, however, unions effectively abandoned both "direct affiliation" and "minority unionism" as common practices. Over the past half-century, union membership has come to mean membership in an organization that has demonstrated majority support among workers at a particular worksite, recognized by an employer as the exclusive representative of workers for purposes of collective bargaining…

Opening up to these new members would entail some administrative challenges. Many unionists will worry about the cost of servicing workers outside union security clauses and regular dues collection by employers. But the economics of the Internet have changed this cost equation in fundamental ways. At essentially zero marginal cost, unions can communicate with an ever-expanding number of new members, and they can deliver all manner of services to them through the Internet.

A labor movement that embraced this vision—taking its own historical lessons with diversified membership seriously and relying more heavily on the Internet in membership communication and servicing—would be practicing what we call "opensource unionism" (OSU)…

Under open-source unionism… , unions would welcome members even before they achieved majority status, and stick with them as they fought for it—maybe for a very long time. These "pre-majority" workers would presumably pay reduced dues in the absence of the benefits of collective bargaining, but would otherwise be normal union members. They would gain some of the bread-and-butter benefits of traditional unionism—advice and support on their legal rights, bargaining over wages and working conditions if feasible, protection of pension holdings, political representation, career guidance, access to training and so on. And even in minority positions, they might gain a collective contract for union members, or grow to the point of being able to force a wall-to-wall agreement for all workers in the unit. But under OSU, such an agreement… would not be the defining criterion for achieving or losing membership. Joining the labor movement would be something you did for a long time, not just an organizational relationship you entered into with a third party upon taking some particular job, to expire when that job expired or changed.

OSU would engage a range of workers in different states of organization rather than discrete majorities of workers in collective-bargaining agreements. There would be traditional employer-specific unions, but there would likely be more cross-employer professional sorts of union formations and more geographically defined ones. Within any of these boundaries, the goal of OSU would not be collective bargaining per se but broader worker influence over the terms and conditions of work and working life. Because OSU unions would typically have less clout inside firms or with particular employers, they would probably be more concerned than traditional unionism with the political and policy environment surrounding their employers and employment settings. They would be more open to alliance with nonlabor forces—community forces of various kinds, constituencies organized around interests not best expressed through work or even class (here think environmental, feminist, diversity or work/

> family concerns)— that might support them in this work. As a result, labor as a whole would likely have a more pronounced "social" face.[11]

Unions existed before the NLRB was even a gleam in FDR's eye, and can function in the workplace as bargaining agents exactly the same way they did then without NLRB certification.

The kinds of networked labor organization made possible by the Internet and following the "Netwar" model described by Arquilla and Ronfeldt—e.g. The Wal-Mart Workers' Association and the Coalition of Imolakee Workers—is a perfect complement to non-certified, informal minority locals in the workplace. The networked organization can provide platforms, toolkits and support for the locals.

The Social Services Model. "Associate membership" is closely related to minority unionism, and offers to realize its full potential when mated to network organization. It's especially relevant in an era of declining importance of the very concept of the "job."

The rise of the precariat, increased outsourcing, and reliance on temporary help in a growing number of industries is undermining the traditional linkage between the job and the social safety net, and creating strong pressure for workers to develop new models of economic security outside of wage employment.

> "We're going to have to evolve past the idea that the only thing a union is, is a collective bargaining agent at a workplace," says Freelancers Union founder Sara Horowitz. "There will be a lot more experimentation. You can see the shape of the future already, not just in the Freelancers' Union but the growth of the peer economy."
>
> Today networks help us find a job (LinkedIn), a place to crash (Airbnb), fund our projects (Kickstarter), or give us a place to perform and publicize our work (Behance, GitHub). Coworking spaces give startups and businesses a cooperative edge along with a desk. Websites like Glassdoor give workers important leverage in knowing about who to work for and how much to charge.
>
> Tomorrow, crowdfunded workers' networks could perform all of the above functions and more to serve as the union of the future.[12]

Robert Laubacher and Thomas Malone, writing in 1997, described the range of alternatives to the employer-based safety net which were beginning to emerge:

> Some organizations have already emerged to meet the needs of workers in sectors of the economy where free-lancing is common. For example, several such entities are attempting to serve independent professionals. The National Association of the SelfEmployed (NASE) offers health insurance and other benefits to its members at highly competitive rates. It turns out that the self-employed lose very few workdays to illness and thus constitute a very attractive risk pool for health insurers. A recently founded organization, Working Today, provides a variety of benefits at group rates, including health insurance, retirement planning, and low cost Internet access, to white collar professionals working independently. The group also sees itself as an

[11] Quoted in Geoff Brown, *Sabotage: A Study of Industrial Conflict* (Nottingham, England: Spokesman Books, 1977), p. 36.

[12] Alexis Buss, "Minority Report," *Industrial Worker*, October 2002 <www.iww.org>.

> advocate for its members and lobbies for policy changes which would place benefits paid for by selfemployed workers on the same tax footing as benefits received by traditional jobholders.
>
> Two other areas where free-lance workers are prevalent are film production and construction. In the film industry, screen actors and writers, as well as the technicians who staff crews, typically work on a sporadic basis, and the labor organizations which serve these groups are set up to accommodate the periodic nature of employment in the industry. For example, members of the Screen Actor's Guild (SAG) need to earn only $6000 in a calendar year to qualify for full health benefits for the entire subsequent year. In recognition of the short shelf-life of many actor's careers, the Guild also provides very generous pension benefits… In order to pay for these services, SAG contracts stipulate that producers must pay a large surcharge, which amounts to as much as 30 percent of actors' base pay, into the Guild's benefits fund.
>
> In the construction industry, workers are also typically employed on a project basis, often moving from firm to firm when they finish one project and go on to the next. To accommodate these circumstances, construction trade unions offer their members fully "portable" health and pension benefits…[13]

"Associate membership"

> is a mechanism for delivering some services to workers who are not in a bargaining unit represented by a union. It has been made available to prounion workers in a failed election, former union members who want to continue their affiliation with the union, and workers in antiunion settings who want some "personal affiliation with organized labor."[14]

Organized labor, under this model, would shift from seeing the dwindling, increasingly marginalized full-time industrial workforce as its primary constituency, to including the so-called "precariat" in its membership and offering services that are valuable to workers whether they are currently employed or unemployed. Under the present conventional model, unionism pursues a model of retreat in the face of encirclement. A model of unionism that served the much larger constituency of unemployed and members in non-unionized workplaces, on the other hand, might credibly threaten employers with encirclement. Some novel approaches in this direction might include organizing unions of freelance workers and the selfemployed, as well as using direct-marketing techniques to appeal directly to workers outside of existing certified locals.[15]

When combined with the networked or socially-based organization model discussed below, associate membership encourages workers "to think of labor as a social support movement… " It's also "a step back toward a preindustrial concept of unions as fraternal and benefit organizations.[16]

[13] Buss, "Minority Report," *Industrial Worker*, December 2002 <www.iww.org>.

[14] Joel Rogers and Richard B. Freeman, "A Proposal to American Labor," *The Nation*, June 6, 2002 <www.thenation.com>.

[15] Anya Kamenetz, "Unions Are Dying. What Comes Next?" *Fast Company*, January 28, 2013 <www.fastcompany.com>.

[16] Robert J. Laubacher and Thomas W. Malone, "Initiative on Inventing the Organizations of the 21st Century" Working Paper #004. Sloan School of Management (Massachusetts Institute of Technology, October 1997) <ccs.mit.edu>.

The social services model might include offering cheap mutual health insurance not only to job-based union members, but to individual, socially-based members in workplaces without certified union locals.

A related model for serving workers on an individual basis, whether it be in bargaining units with no certified union or among the unemployed, is a resurrected guild that offers insurance and other services. Malone and Laubacher wrote about it fifteen years ago:

> These guilds could provide a stable home for their members as they moved from job to job. They could, for example, help their members by:
>
> - ensuring their financial security,
> - providing placement and professional training services,
> - becoming a locus of social interaction and identification..... Given the current U.S. health care system, one of the most important services guilds can offer to American workers will be access to health insurance at reasonable cost. Guilds can accomplish this by bringing together their members to create risk pools of their own, which will allow for the purchase of group health coverage at competitive rates. Group life and disability insurance and group retirement plans could be purchased in a similar manner.
>
> Another important aspect of financial security is protection against being unemployed—or under-employed.
>
> Workers who are on their own... assume all of the risk of economic downturns themselves. Guilds could help mitigate this risk by establishing "income smoothing" plans. For example, imagine that members paid a fraction of their income to the guild in good times, in return for a guaranteed minimum income in the bad times...
>
> In the realm of placement, guilds could play an active part in assisting their members to find work. One simple mechanism might be the establishment of electronic clearinghouses to match workers with projects according to their skills and experience...
>
> Another role guilds could play in helping members find work would be in establishing and verifying their members' reputations. One approach might be the creation of a set of standards outlining various skill levels and recommended pay bands for each. Another could involve collecting evaluations, in an agreed-upon format, based on a worker's performance on prior projects...
>
> In the area of professional development, guilds could organize series of formal training programs and sponsor apprenticeship programs...
>
> Finally, in the social realm, guilds could provide a meeting place, either actual or virtual, where workers with similar interests and experiences might gather on a regular basis to trade stories and share advice... These kinds of interactions are notable not only for the social bonds they reinforce, but also for the sharing of tacit knowledge which they can promote.

> If guilds become the vehicle through which workers maintain daily social connections, they are also likely to become the primary institution with which those workers come to identify…[17]

The broader social economy and various forms of commons are also likely to serve as support bases for precarious or freelance work. Ana Silva argues that such a broad-based social economy—including the household as income-pooling unit and various institutions for sharing capital goods *between* hosueholds—is becoming necessary in an age of increased freelance work.

> But if the notion of working project-based/freelance-like can provide the freedom to pursue other interests [how many of us dream of a sabbatical year?!], and the opportunity to develop new skills and seek new ventures, working on different projects for different organizations and with diverse people, we usually look at freelance work as unstable and financially insecure, often requiring a shift in mindset when it comes to ensuring a steady paycheck and managing the family's budget…
>
> Which got me thinking: if work is changing and freelance-like work is on the rise, bringing with it increased freedom, autonomy and diversity but also probably added unpredictability in terms of steady incomes, then we'll probably also need a societal change and start questioning our need to own things (a car, a house, and some of the stuff customary in modern households) and how we approach borrowing and lending money (freelancer friends always complain how hard, and increasingly harder, it is to get a loan).
>
> For many, facing all this change, especially when they already have kids and a mortgage, can seem daunting, which was probably why at some point of our interesting dinner conversation my friend suggested that for a couple maybe one could pursue a project-based/entrepreneurial activity of some sort while the other could guarantee some "stability" from a "traditional" job.[18]

And in an economy where the total need for labor is rapidly falling, but the overhead costs of craft production by skilled trades are also falling, revived guilds are a good way of evenly distributing available craft-based work among the pool of workers. Guild organizations are especially relevant in a time of the cheapening of the means of production, and the explosion of technologies in many industries that permit higher quality in the home than in the wage-labor workplace. And it suggests the organization of work itself by P2P means, or via Hardt's and Negri's Multitude:

> A return to guilds as an organizing force for the worker of the future will bring with it another medieval institution: a return of ownership of means of production to the individual. In our surveys of distributed workers over the years, we have noted a consistent finding. Workers report that the technology they have in their home offices is more advanced and sophisticated than what their employers provide in the central office.

[17] Hoyt Wheeler, *The Future of the American Labor Movement* (Cambridge University Press, 2002), pp. 76–77.

[18] Peter Hall-Jones, "Precariat meet'n'greet," *New Unionism Blog*, November 22, 2009 <newunionism.wordpress.com>.

> In fact, many report that they 'save the toughest jobs for home' because they have better tools. As technology has become commoditized, individuals can afford to own the fastest, latest and most robust equipment. No longer must a worker depend on his employer giving him/her the tools they need to do their job. They have their own. So, if these creatives have their own telecommunications, computers, databases, cell phones and meeting places; what do they need in terms of infrastructure from an 'employer'?
>
> Expecting workers to bring their own tools to the job could radically re-shape how corporations look at the management of hard assets. Why should they purchase and maintain them, when perhaps 30% of the workforce can be assumed to have their own?
>
> The return to guilds, as a way of organizing work communities, has tremendous implications for the provision of services to workers. Our old industrial model has been that companies provide workers with everything they need to do the job: office space, technology, and management support—including health care, pensions and training. But guilds provide all that for workers.
>
> So, if our scenario plays out then companies will find themselves in the envious position of shedding the responsibility of providing human resource services, technology infrastructure and facilities. Think of the impact this could have. You could literally cut your operational expenses in half for 30–40% of the workforce. All this and community too! But wait, what's the dark side for companies and what will they have to do to counteract loosening their social ties with workers?
>
> In short, their death. Loosening these community's ties implies a growing lack of engagement between worker and companies. These companies have historically existed to find, organize and focus the energy and talent of people who add value in the process of innovation, manufacture and distribution of goods and services. Some form of human organization will be required to step in and fill that gap. As we have suggested above, that organization we believe will be a re-birth of guild structures…[19]

Restaurant Opportunities Centers are one possible example of guild organization for precariat.

> In the lexicon of labor studies, organizations such as Philly ROC are known as worker centers. They are not tied to a specific employer, the way a union might be through a collective-bargaining contract.
>
> Unions tend to represent restaurant workers in larger entities, such as Windows, which employed hundreds. But many restaurants have just a handful of employees.
>
> "It's really tough for unions to organize these workplaces that are really small and where there's a lot of turnover," said Lonnie Golden, a professor of economic and labor studies at Pennsylvania State University's Abington campus.

[19] Wheeler, *The Future of the American Labor Movement*, p. 77.

> "The alternative is to negotiate a floor for the whole occupation," he said.
>
> That became the goal of Windows workers who survived the terrorist attacks.
>
> Initially, the 350 surviving Windows employees, suddenly jobless, were helped by their union. But, after about six months, that assistance ended. After all, these workers were no longer employed in a union restaurant.
>
> Instead Unite Here Local 100, helped them organize their own group, the Restaurant Opportunities Center, the organization that now runs Colors as a workerowned restaurant.
>
> The group protested when the former Windows owner tried to open a nonunion restaurant. After the news media picked up the story, the fledgling organization was flooded with calls from restaurant employees who wanted help with their work issues.
>
> Then, in 2005, when Hurricane Katrina blew away New Orleans' tourist industry, workers from there contacted New York's ROC to help them build a similar organization in the Big Easy.
>
> Now there are ROCs in Washington and Detroit, among other cities. Funding comes from dues, from foundations, and in New York, from government workforce training grants. The national organization is bankrolling the Philadelphia operation for a few years…[20]

The guild model is ideal for the exercise of bargaining rights by the precariat. In New Zealand, the Together movement enlists workers from the precariat who are not represented in conventionally organized workplaces.

> "Together aims to connect workers in un-unionised work places with the union movement and the union experience."
>
> In order to do this, it provides " … help with issues like workplace bullying, sick leave, holiday pay, employment agreements and sexual harassment".
>
> Together is a national service that is being developed for the "precariat"—that rapidly growing cohort of workers who do not fit into the standard labourist model of industrial capitalism… In particular, it aims to bring together:
>
> People on casual contracts;
>
> Those in industries like IT, tourism or in small shops, or driving taxis;
>
> Contractors and workers in remote areas and small towns who don't currently have access to a union;
>
> The families of current union members.
>
> Membership costs just $NZ 1 per week, which is roughly 20% of typical union fees in New Zealand. (One kiwi dollar is equivalent to about $US0.87 or £UK0.53 or ¥68). Family membership is also on offer, bringing a still larger audience back into unionism's traditional orbit. In fact, the word they use here is "whanau", which is a Maori

[20] Laubacher and Malone, *op. cit.*

> word suggesting something more like "extended family". So, for instance, if mum or dad is a union member, they can also arrange union support for their children, uncles and aunts, cousins, nephews and nieces and grandchildren.[21]

Worker Cooperatives. Another way of moving beyond the conventional labor movement's laborist emphasis on "jobs" is for radical networked unions to organize worker cooperatives, and encourage production for barter networks among unemployed workers. We've already seen, in a previous chapter, that Owenite trade unions employed workers on strike and marketed the product cooperatively, and that the same practice was common among striking craft workers in America. And as we saw, the main reason the union cooperative model failed was the lack of capital to buy expensive machinery as the factory system supplanted craft production.

But the worker cooperatives organized in the era of artisan labor paralleled, in many ways, the forms of work organization that are arising today. Networked organization, crowdsourced credit and the implosion of capital outlays required for physical production, taken together, are recreating the same conditions that made artisan cooperatives feasible in the days before the factory system. In the artisan manufactories that prevailed into the early 19th century, most of the physical capital required for production was owned by the work force; artisan laborers could walk out and essentially take the firm with them in all but name. Likewise, today, the collapse of capital outlay requirements for production has created a situation where human capital is the main source of value for many firms. The growing importance of human capital relative to physical capital as a source of equity and revenue streams, and the shift from expensive machinery back to affordable generalpurpose tools as the primary form of physical capital, open possibilities for reviving worker cooperatives as a tool of labor resistance that existed before the triumph of the factory system.

The same principle applies to the expansion of all kinds of self-directed labor. According to Michael Hardt and Antonio Negri:

> … the trend toward the hegemony or prevalence of immaterial production in the processes of capitalist valorization… Images, information, knowledge, affects, codes, and social relationships … are coming to outweigh material commodities or the material aspects of commodities in the capitalist valorization process. This means, of course, not that the production of material goods … is disappearing or even declining in quantity but rather that their value is increasingly dependent on and subordinated to immaterial factors and goods… Living beings as fixed capital are at the center of this transformation, and the production of forms of life is becoming the basis of added value. This is a process in which putting to work human faculties, competences, and knowledges--those acquired on the job but, more important, those accumulated outside work interacting with automated and computerized productive systems--is directly productive of value. One distinctive feature of the work of head and heart, then, is that paradoxically the object of production is really a subject, defined … by a social relationship or a form of life.[22]

[21] Ana Silva, "The future of work: on to a freelance model?" *The Future of Life and Work*, September 8, 2013 <artlifework.wordpress.com>.

[22] Charles Grantham (with contributions from Norma Owen and Terry Musch), "Future Working Together Blog: The Rebirth of Guilds—Ownership of the Means of Preservation (Part 4 of 5)," *Sloconference.com*, January 24, 2012 <blog.sloconference.com>.

This means that "[c]apitalist accumulation today is increasingly external to the production process, such that exploitation takes the form of *expropriation of the common.*"[23] And knowledge, rather than being embedded in a process organized by those managing the physical capital owned by an alien class, is embedded in the workers themselves—"knowledge that is widespread across society" as "a central productive force, out of reach of the system of control."[24]

Labor's revolutionary struggle, accordingly, under these conditions—under the new technical composition—takes the form of "exodus":

> By exodus here we mean… a process of *subtraction* from the relationship with capital by means of actualizing the potential autonomy of labor-power. Exodus is thus not a refusal of the productivity of biopolitical labor-power but rather a refusal of the increasingly restrictive fetters placed on its productive capacities by capital. It is an expression of the productive capacities that exceed the relationship with capital achieved by stepping through the opening in the social relation of capital and across the threshold. As a first approximation, then, think of this form of class struggle as a kind of maroonage. Like the slaves who collectively escape the chains of slavery to construct self-governing communities and quilombos, biopolitical labor-power subtracting from its relation to capital must discover and construct new social relationships, new forms of life that allow it to actualize its productive powers. But unlike that of the maroons, this exodus does not necessarily mean going elsewhere. We can pursue a line of flight while staying right here, by transforming the relationship of production and mode of social organization under which we live.[25]

Current technological changes amount to a singularity in which it is becoming impossible for capital to prevent a shift in the supply of an increasing proportion of the necessities of life from mass produced goods purchased with wages, to small-scale production in the informal and household sector and in low-overhead microenterprises of all kinds.

As already suggested, organization of production for barter by the unemployed or underemployed, perhaps within union-sponsored networks, is another idea that falls under the headings of both social services and worker cooperatives. Unions might sponsor small, independent workshops, equipped with affordable tools, in which laid-off or unemployed workers could reduce their dependence on wage labor by producing directly for consumption or barter. They might also put household producers in touch with one another to match up skills with consumption needs within barter networks.

Most households possess producer goods like kitchen appliances, garage power tools, sewing machines, rototillers and gardening implements, and cars which might provide transportation to neighbors, as well as members with cooking, sewing, babysitting, hairdressing, woodworking or metal shop skills. And the productive capacity of such machinery and skills is typically far beyond the consumption needs of the individual household. If the spare capacity of such machinery and skills were used for production for direct consumption or barter with other households, a major part of what we consume could be produced within the households of the unemployed and

[23] Jane M. von Bergen, "Workers find a new way to organize," *Philadelphia Inquirer*, July 24, 2011 <articles.philly.com>.

[24] <www.together.org.nz>; "Together at Last," *New Unionism Blog*, July 26, 2011; <newunionism.wordpress.com>.

[25] Michael Hardt and Antonio Negri, *Commonwealth* (New York, 2009), p. 132.

underemployed. So the network effects of association for barter would increase the total value of household production capability. And labor unions are a promising platform for organizing such network effects.

The effect on the bargaining power of workers vis-a-vis wage employers should be obvious. Workers who barter babysitting time with the neighbor need a lot less work time than those who spend half their paychecks on daycare.

Community and Comprehensive Campaigns. Comprehensive campaigns unite two traditional forms of anti-corporate action: the community campaign and the corporate campaign. The community campaign (one notable practitioner of which was Saul Alinsky) was, as its name implied, a community-based campaign against a corporate malefactor, rather than one carried out mainly on the initiative of the company's own workforce. The corporate campaign, although conducted mainly on the initiative of workers in the targeted company and to achieve their workplace goals, might employ a wide range of direct action and public sympathy tactics outside the formal scope of the Wagner Act. The comprehensive campaign fuses both.[26]

II. Networked Labor Struggle

Negri and Hardt, in *Multitude*, argue that the networked labor movement must cease to limit itself to conventional wage employees, and thereby become coextensive with the social organization of production in society at large. In so doing, it will leverage the productive capacity of social production as a whole as a basis of bargaining power in support of wage workers.

> Our claims of the wealth, productivity, and commonality of the poor have immediate implications for trade union organizing… First of all… the old trade unions are not able to represent the unemployed, the poor, or even the mobile and flexible post-Fordist workers with short-term contracts, all of whom participate actively in social production and increase social wealth… Finally, the old unions have become purely economic, not political, organizations… In the paradigm of immaterial labor., and as production becomes increasingly biopolitical, such an isolation of economic issues makes less and less sense.
>
> What is necessary and possible today is a form of labor organizing that overcomes all the divisions of the old unions and manages to represent the becoming common of labor in all its generality—economically, politically, and socially. Whereas traditional trade unions defend the economic interests of a limited category of workers, we need to create labor organizations that can represent the entire network of singularities that collaboratively produce social wealth. One modest proposal that points in this direction, for example, involves opening up trade unions to other segments of society by merging them with the powerful social movements that have emerged in recent years in order to create a form of "social movement unionism."… In any case, a union worthy of the name today… must be the organized expression of the multitude, capable of engaging the entire global realm of social labor…[27]

[26] *Ibid*., p. 137.
[27] *Ibid*., p. 267.

> The central aspect of the paradigm of immaterial production we have to grasp here is its intimate relation with cooperation, collaboration, and communication—in short, its foundation in the common. Marx insists that one of the great progressive elements of capital historically is to organize armies of workers in cooperative productive relationships. The capitalist calls workers to the factory. for example, directing them to collaborate and communicate in production and giving them the means to do so. In the paradigm of immaterial production, in contrast, labor itself tends to produce the means of interaction, communication, and cooperation for production directly… The production of ideas, images, and knowledges is not only conducted in common… but also each new idea and image invites and opens new collaborations… In all these ways, in immaterial production the creation of cooperation has become internal to labor and thus external to capital.[28]

> … [W]e have begun to recognize… how the singular figures of postmodern labor do not remain fragmented and dispersed but tend through communication and collaboration to converge toward a common social being… The important question at this point is what kind of body will these common singularities form? One possibility is that they will be enlisted in the global armies at the service of capital, subjugated in the global strategies of servile inclusion and violent marginalization. This new social flesh, in other words, may be formed into the productive organs of the global social body of capital.[29]

This last is the model of capitalism variously termed "cognitive capitalism," "green capitalism," "progressive capitalism," and (by Paul Romer) "new growth theory." It aims to enclose the information commons, to capitalize innovation as a source of rents, and make innovation and information—thus transformed into "property"—into a new "engine of accumulation" or the basis of a new Kondratiev long-wave. Johann Soderberg has pointed to the role of draconian digital copyright laws and drastic increases in the terms of patents in enforcing this regime of information enclosure, and compared the system of information control embodied in Western digital copyright control to the totalitarian lockdown of photocopiers and fax machines in the old Soviet Union.

This is not, in my opinion, a serious possibility. No matter how strongly the dominant interests in global capitalism would like to enforce such enclosure of digital information, technologies of digital reproduction, encryption and anonymization are rendering it impossible. So the only remaining possibility is Hardt's and Negri's second alternative of social labor organizing itself autonomously and "creat[ing] a new world."[30]

The power of the multitude is rooted in its productivity, its ability to produce a surplus beyond the power of capital and institutional hierarchies to appropriate:

> the production of the common always involves a surplus that cannot be expropriated by capital or captured in the regimentation of the global political body. This

[28] *Ibid*., pp. 152–153.

[29] Kenneth A. Jenero and Mark A. Spognardi, "Defending against the Corporate Campaign: Selected Legal Responses to Common Union Tactics," *Employee Relations Law Journal* Vol. 22 No. 2 (Autumn 1996).

[30] Michael Hardt and Antonio Negri, *Multitude: War and Democracy in the Age of Empire* (New York: Penguin, 2004), pp. 136–137.

> surplus, at the most abstract philosophical level, is the basis on which antagonism is transformed into revolt. Deprivation… may breed anger, indignation, and antagonism, but revolt arises only on the basis of wealth, that is, a surplus of intelligence, experience, knowledges, and desire. When we propose the poor as the paradigmatic subjective figure of labor today, it is not because the poor are empty and excluded from wealth but because they are included in the circuits of production and full of potential, which always exceeds what capital and the global political body can expropriate and control.[31]

Capital's dependence on labor in a sense holds it hostage, and leaves it vulnerable to an attempt by the networked multitude to secede from hierarchy, and shift the meeting of a growing share of its needs to social production outside the sphere of capital.

> In politics as in economics, one weapon that is constantly at the disposal of the ruled… is the threat to refuse their position of servitude and subtract themselves from the relationship. This act of refusing the relationship with the sovereign is a kind of exodus, fleeing the forces of oppression, servitude, and persecution in search of freedom… Without the active participation of the subordinated, sovereignty crumbles.
>
> … One new aspect of the present global order is that, in step with the processes of globalization, it tends to blur the boundaries between political, economic, social, and cultural forms of power and production… Economic production… is increasingly biopolitical, aimed not only at the production of goods, but ultimately at the production of information, communication, cooperation—in short, the production of social relationships and social order. Culture is thus directly both an element of political order and economic production. Together, in a sort of concert or convergence of the various forms of power, war, politics, economics, and culture in Empire become finally a mode of producing social life in its entirety and hence a form of biopower…
>
> Once we recognize this convergence in biopower, we can see that imperial sovereignty is completely dependent on the productive social agents over which it rules… The circuits of social producers are the lifeblood of Empire, and if they were to refuse the relationship of power, to subtract themselves from the relationship, it would simply collapse in a lifeless heap…
>
> … Empire creates and rules over a truly global society that becomes ever more autonomous while Empire relies on it ever more heavily…
>
> In the era of imperial sovereignty and biopolitical production, the balance has tipped such that the ruled tend to be the exclusive producers of social organization. This does not mean that sovereignty immediately crumbles and the rulers lose all their power. It does mean that the rulers become ever more parasitical and that sovereignty becomes increasingly unnecessary. Correspondingly, the ruled become increasingly autonomous, capable of forming society on their own… Indeed when the products of labor are not material goods but social relationships, networks of

[31] *Ibid*., p. 147.

> communication, and forms of life, then it becomes clear that economic production immediately implies a kind of political production, or the production of society itself…[32]

Broad-based coalitions have been employed by various social justice movements for decades. Saul Alinsky's community organizing model is a good example. Networked organization of the sort described by Arquilla and Ronfeldt, made possible by the Internet, is simply the same phenomenon on steroids. When integrated into earlier models of direct action, it offers to increase their impact enormously.

The other models mentioned above—minority unionism, the social services model, worker cooperatives—can all achieve a higher synergy by coordinating their mutual support through networked organizations and using platforms based on such organizations. Networked organizations can offer support services to a variety of minority locals and cooperatives on a modular basis. The networks can serve as the vehicle for offering standard packages of low-cost insurance to affiliated locals and cooperatives and small workshops, providing specialized help to startup cooperatives, organizing barter networks and currency systems for trade between members, negotiating with suppliers and providing marketing outlets, etc., as well as coordinating media swarming in support of local struggles.

One partial suggestion for the form a networked labor movement might take is the French model of unionism, which is at least as much socially-based as workplace-based. Charles Derber wrote, over a decade ago:

The real constituency of the new labor movement… is the American public as a whole, as well as workers throughout the world. As the old social contract unravels, the great majority of those in jeopardy are not American union members but unrepresented American workers, as well as workers in the third world. Beyond organizing new members, labor must transform itself into a voice speaking mainly for these expansive constituencies who are not already American union members. Ironically, this will be the most effective way to service its own duespaying members. In France, for example, less than 10 percent of the workforce is in unions, but the French people as a whole support union work stoppages to protect wages or benefits. In 1997, a majority of the French population virtually closed down the country in support of transportation workers' efforts to protect retirement and vacation benefits.[33]

Parallel to the social services model of serving members who are not part of a certified union in their workplace, unions can organize outside the workplace and network with other organizations in society at large in order to bring pressure to bear on employers. In this model, the union uses the community as a whole as its power base.[34]

Hoyt Wheeler, in *The Future of the American Labor Movement*, treats the Knights of Labor as the paradigmatic case of this form of organization. If a union is a collection of local bodies comprising the majority of workers in their workplaces, and having as their main purpose collective bargaining with their employers, then the Knights were less than a union. But they were also more. Their Local Assemblies served as umbrella organizations for social justice and reform

[32] *Ibid*., p. 159
[33] *Ibid*.
[34] *Ibid*., p. 212.

movements in each community.[35] Their motto, "An injury to one is the concern of all," is especially meaningful in this light.

Although the Wobblies, who borrowed the K. of L. motto, put more emphasis on workplace organizing, they also began as an umbrella organization of labor and social justice groups. When Big Bill Haywood gaveled the I.W.W. founding convention to order in 1905, he referred to it with some justification as "the Continental Congress of the working class." It included representatives of the American Railway Union, the Western Federation of Miners, the Socialist Party USA, the Socialist Labor Party, the radical priest Fr. Thomas Haggerty, and the allaround moral authority Mary "Mother" Jones.

Today, unions might augment their power within the workplace—or exert power which they altogether lack within workplaces with no certified bargaining agent—by putting together a coalition of civil rights and social justice organizations, clergy, the larger labor movement, etc., in the employer's community.[36] At a time when only a small fraction of private sector workers still belong to certified workplace unions, the mutual moral support of a number of high-profile community organizations may be of inestimable value.

The kinds of open mouth sabotage we consider later on in this chapter are especially well suited to networked organization. As part of a corporate campaign, it's essentially the "culture jamming" used by activists like Charles Kernaghan, but specifically in support of labor disputes. It was used by the Amalgamated Clothing and Textile Workers Union in their 1976 campaign against J.P. Stevens. Corporate campaigns can be used in conjunction with an organizing campaign, in support of a strike, or in place of a strike.[37] The third item is of special relevance to us today, when organizing a conventional union is more difficult than it's been in decades.

Like the isolated individual worker or group of workers within the workplace planning a campaign of open-mouth sabotage against their employer, the corporate campaign is "based upon extensive research on a company to identify fruitful pressure points." Directors, lenders, and other business associates are targeted with a view to inflicting maximum public embarrassment.[38]

Ironically, Wheeler wrote in 2002 that the corporate campaign had declined in importance.[39] This was at a time when campaigns like Kernaghan's were in their early ascendancy, before the Walmart Workers' Association, and before the Coalition of Imolakee Workers conducted one of the most effective corporate campaigns in history.

Workers' main bargaining agent may not be a certified union in their own workplace at all, but what Wheeler calls a "workers' rights group."[40] Such labor advocacy groups, while they may not meet the standards for an NLRB-certified union, are for all intents and purposes unions if one defines a union as an organization of wage-earners who seek to improve their working lives.

> However, they do not do what we usually think of unions as doing—engage in collective bargaining. Neither do they ordinarily strike. Their weapons are much more likely to be political pressure, social protest, and publicity.[41]

[35] *Ibid*., pp. 333–336.

[36] Charlers Derber, *Corporation Nation: How Corporations are Taking Over Our Lives and What We Can Do About It* (New York: St. Martin's Griffin, 1998), p. 291.

[37] *Ibid*., p. 59.

[38] Hoyt Wheeler, *The Future of the American Labor Movement*, p. 101.

[39] *Ibid*., pp. 60–61.

[40] *Ibid*., pp. 78–79.

[41] *Ibid*., p. 79.

Although the Walmart Workers' Association was not in existence at the time he wrote, Wheeler might as well have had them specifically in mind. It acts as an unofficial union, and has repeatedly obtained concessions from store management teams in several publicity campaigns designed to embarrass and pressure the company.[42] As Ezra Klein noted,

> This is, of course, entirely a function of the pressure unions have exerted on WalMart—pressure exerted despite the unions having almost no hope of actually unionizing Wal-Mart. Organized Labor has expended tens of millions of dollars over the past few years on this campaign, and while it hasn't increased union density one iota, it has given a hundred thousand Wal-Mart workers health insurance, spurred Wal-Mart to launch an effort to drive down prescription drug prices, drove [sic] them into the "Divided We Fail" health reform coalition, and contributed to the company's focus on greening their stores (they needed good press to counteract all the bad).[43]

Charles Johnson points to the Coalition of Imolakee Workers as an example of an organizing campaign outside the Wagner framework, relying heavily on the open mouth:

> They are mostly immigrants from Mexico, Central America, and the Caribbean; many of them have no legal immigration papers; they are pretty near all mestizo, Indian, or Black; they have to speak at least four different languages amongst themselves; they are often heavily in debt to coyotes or labor sharks for the cost of their travel to the U.S.; they get no benefits and no overtime; they have no fixed place of employment and get work from day to day only at the pleasure of the growers; they work at many different sites spread out anywhere from 10–100 miles from their homes; they often have to move to follow work over the course of the year; and they are extremely poor (most tomato pickers live on about $7,500–$10,000 per year, and spend months with little or no work when the harvesting season ends). But in the face of all that, and across lines of race, culture, nationality, and language, the C.I.W. have organized themselves anyway, through efforts that are nothing short of heroic, and *they have done it as a wildcat union with no recognition from the federal labor bureaucracy and little outside help from the organized labor establishment.* By using creative nonviolent tactics that would be completely illegal if they were subject to the bureaucratic discipline of the Taft-Hartley Act, the C.I.W. has won major victories on wages and conditions over the past two years. They have bypassed the approved channels of collective bargaining between select union reps and the boss, and gone up the supply chain to pressure the tomato buyers, because they realized that they can exercise a lot more leverage against highly visible corporations with brands to protect than they can in dealing with a cartel of government-subsidized vegetable growers that most people outside of southern Florida wouldn't know from Adam.
>
> The C.I.W.'s creative use of moral suasion and secondary boycott tactics have already won them agreements with Taco Bell (in 2005) and then McDonald's (this past spring), which almost doubled the effective piece rate for tomatoes picked for these

[42] *Ibid*., p. 79.
[43] *Ibid*., p. 63.

> restaurants. They established a system for pass-through payments, under which participating restaurants agreed to pay a bonus of an additional penny per pound of tomatoes bought, which an independent accountant distributed to the pickers at the farm that the restaurant bought from. Each individual agreement makes a significant but relatively small increase in the worker's effective wages… [,] but each victory won means a concrete increase in wages, and an easier road to getting the pass-through system adopted industry-wide, which would in the end nearly *double* tomato-pickers' annual income.

Burger King held out for a while, following Taco Bell's earlier successive strategies of ignoring, stonewalling, slick PR, slander (denouncing farm workers as "richer than most minimum-wage workers," consumer boycotts as extortion, and C.I.W. as scam artists), and finally even an attempt at federal prosecution for racketeering.[44] But in the end they caved.[45] In 2014, Walmart became the latest to sign an agreement with the CIW and join the Fair Food Program.[46]

Hoyt Wheeler's "associative" model of unionism among white collar workers links the network model with the social services model we discussed earlier. As much a professional association as a conventional union, it focuses on providing benefits to members as much as a collective voice against the employer. As a bargaining unit it is loose and relatively non-bureaucratic, and tends to negotiate minimum standards with the employer while leaving members free to negotiate better terms individually. When it is necessary to promote the members' collective interests against the employer, the hybrid white collar union/association does so more through negative publicity to pressure the employer than through conventional strikes.[47]

Steven Lerner of the SEIU argues that traditional unions try to veto radical actions by other players in community campaigns, for the sake of preserving peace with employers and in hopes their members will be "eaten last." The rise of networked movements can shift the balance of power against traditional unions and deprive them of their veto power.

> Unions with hundreds of millions in assets and collective bargaining agreements covering millions of workers won't risk their treasuries and contracts by engaging in largescale sit-ins, occupations, and other forms of non-violent civil disobedience that must inevitably overcome court injunctions and political pressures…
>
> In city after city, a project labor agreement—or a collective bargaining agreement covering a small percentage of a corporation's total workforce—can make a union want to veto any demonstrations and actions that might upset its relationship with a particular employer…
>
> In Ohio, a set of unions actively worked against a recent multi-state mobilization at a JP Morgan Chase shareholder meeting. The unions said the planned demonstrations seemed "too anti-corporate," with the potential to turn off independents and buoy conservative fundraising efforts…

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[44] *Ibid*., p. 64.

[45] Nick Robinson, "Even Without a Union, Florida Wal-Mart Workers Use Collective Action to Enforce Rights," *Labor Notes*, January 2006. Reproduced at Infoshop, January 3, 2006 <www.infoshop.org>.

[46] Ezra Klein, "Why Labor Matters," *The American Prospect*, November 14, 2007 <www.prospect.org>.

[47] Charles Johnson, "Coalition of Imolakee Workers marches in Miami," *Rad Geek People's Daily*, November 30, 2007 <radgeek.com>.

> … Instead of seeing this as an opportunity to connect efforts to destroy public employee unions with the broader economic problems caused by the Big Banks (and the resulting loss of jobs and revenue in Ohio), the unions unnecessarily chose a narrow path that weakens them in the short and long term. If our goal is to offend no one, we're in danger of doing next to nothing. It is understandable that unions don't want to risk their own relationships with certain employers or politicians. But that shouldn't restrain a broader effort to hold those corporations and politicians accountable. Unions continue to act as though they represent 30 percent of the private sector workforce and that bargaining for those workers drives wages for the whole economy. Decisions are made based on how to protect the 7 percent of private sector workers who are unionized (instead of the 93 percent of private sector workers who aren't in unions). The last thirty years prove that this strategy doesn't make sense for the remaining unionized workers or the overwhelming majority of workers who aren't in unions.
>
> … We need to develop a movement-based organizational model that taps into and builds on union resources—both financial and organizational—but denies unions' "veto power" over campaign activities. Unions should support, help set up, launch, finance, and ultimately engage directly in campaigns based on their comfort level—but they shouldn't have the ability to control or shut down activity because of legal risk or pressure from an employer or politician.
>
> If our strategy is to turn the tables so workers and regular people feel more secure, hopeful, and powerful—and so the elite feels less sure of its control over the country's politics and the economy—we can't tamp down momentum when someone wins a victory or gets pressured to back off… Far from being a threat to winning smaller fights and victories, open-ended escalating activity that can't be shut down is exactly what will force powerful corporate interests to make real concessions. This doesn't mean individual unions or organizations shouldn't make settlements that arise in the context of bigger battles; they just can't shut down the broader fight.[48]

III. Open Mouth Sabotage

In particular, network technology creates previously unimaginable possibilities for the Wobbly tactic of "open-mouth sabotage." As described in "How to Fire Your Boss":

> Sometimes simply telling people the truth about what goes on at work can put a lot of pressure on the boss. Consumer industries like restaurants and packing plants are the most vulnerable. And… you'll be gaining the support of the public, whose patronage can make or break a business.
>
> Whistle Blowing can be as simple as a face-to-face conversation with a customer, or it can be as dramatic as the P.G.&E. engineer who revealed that the blueprints to the Diablo Canyon nuclear reactor had been reversed…

[48] Coalition of Immokalee Workers. "Burger King Corp. and Coalition of Immokalee Workers to Work Together," May 23, 2008 <www.ciw-online.org>. Charles Johnson, "¡Sí, Se Puede! Victory for the Coalition of Imolakee Workers in the Burger King penny-per-pound campaign," *Rad Geek People's Daily*, May 23, 2008 <radgeek.com>.

> Waiters can tell their restaurant clients about the various shortcuts and substitutions that go into creating the faux-haute cuisine being served to them…[49]

Jesse Walker quotes another old pamphlet:

> Workers on the railroads can tell of faulty engines, unsafe trestles. Marine transport workers would do well to tell of the insufficient number of lifeboats, of inferior belts, and so forth. The textile worker can tell of the shoddy which is sold as 'wool.' … The workers carry with them the secrets of the masters. Let them divulge these secrets, whether they be secret methods of manufacture that competitors are striving to learn, or acts of repression directed against the workers.[50]

A central theme of *The Cluetrain Manifesto* was the potential for frank, unmediated conversations between employees and customers as a way of building customer relationships and circumventing the consumer's ingrained habit of blocking out canned corporate messages.[51] It characterized the typical corporate voice as "sterile happytalk that insults the intelligence," "the soothing, humorless monotone of the mission statement, marketing brochure, and your-call-is-important-tous busy signal."[52]

When employees engage customers frankly about the problems they experience with the company's product, and offer useful information, customers usually respond positively. *Cluetrain* is full of anecdotes, many from the authors' experience, of employees acting as customer advocates and thereby defusing situations in which customers were frustrated to the point of going ballistic by official arglebargle and runaround.

What the *Cluetrain* authors *don't* mention is the potential for disaster, from the company's perspective, when disgruntled workers see the customer as a potential ally against a common enemy. What would happen if employees decided, not that they wanted to help their company by rescuing it from the tyranny of PR and the official line and winning over customers with a little straight talk—but that they hated the company and wanted to punish its management? What if, rather than simply responding to a specific problem with what the customer had needed to know, they'd aired all the dirty laundry about management's asset stripping, gutting of human capital, hollowing out of long-term productive capability, gaming of its own bonuses and stock options, self-dealing on the job, and logrolling with directors?

As the *Cluetrain* authors said, "customers talk." But even more important for our purposes, employees talk. It's just as feasible for the corporation's workers to talk directly to its customers, and for workers and customers together to engage in joint mockery of the company, as it is for customers alone to do so.

In an age when unions have virtually disappeared from the private sector workforce, and downsizings and speedups have become a normal expectation of working life, the vulnerability

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[49] "BREAKING NEWS: Walmart joins CIW's Fair Food Program!" *CIW Online*, January 16, 2014 <ciw-online.org>.

[50] Wheeler, *The Future of the American Labor Movement*, p. 57.

[51] Stephen Lerner, "A New Insurgency Can Only Arise Outside the Progressive and Labor Establishment," *New Labor Forum*, Fall 2011 <newlaborforum.cuny.edu>.

[52] "How to Fire Your Boss: A Worker's Guide to Direct Action" <www.iww.org> (originally a Wobbly Pamphlet, it is reproduced in all its essentials at the I.W.W. Website under the heading of "Effective Strikes and Economic Actions"—although the Wobblies no longer endorse it in its entirety).

of employer's public image may be the one bit of real leverage the worker has. If they go after that image relentlessly and systematically, they've got the boss by the short hairs.

Web 2.0, the "writeable web," is fundamentally different from the 1990s vision of an "information superhighway" (one-way, of course). The latter was just a more complex version of the old unidirectional hub-and-spoke architecture of the broadcast era—or as Tapscott and Williams put it, "one big content-delivery mechanism—a conveyor belt for prepackaged, pay-per-use content" in which "publishers… exert control through various digital rights management systems that prevent users from repurposing or redistributing content."[53] Most large corporations still see their websites as sales brochures, and Internet users as a passive audience. But under the Web 2.0 model, the Internet is a platform in which users are the active party. We can talk back.

Given the ease of setting up anonymous blogs and websites (just think of any company and then look up the URL EmployerNameSucks.com), the potential for using comment threads and message boards, the possibility of anonymous saturation emailing of the company's major suppliers and customers and advocacy groups concerned with that industry, and the ability to engage in "search engine pessimization" through creative use of semantic tagging… well, let's just say the potential for "swarming" and "netwar" is corporate management's worst nightmare.

It's already become apparent that corporations are quite vulnerable to bad publicity from dissident shareholders and consumers. For example, Luigi Zingales writes,

> shareholders' activist Robert Monks succeeded [in 1995] in initiating some major changes at Sears, not by means of the norms of the corporate code (his proxy fight failed miserably) but through the pressure of public opinion. He paid for a full-page announcement in the *Wall Street Journal* where he exposed the identities of Sears' directors, labeling them the "non-performing assets" of Sears… The embarrassment for the directors was so great that they implemented all the changes proposed by Monks.[54]

There's no reason to doubt that management would be equally vulnerable to embarrassment by such tactics from disgruntled production workers, in today's networked world. We've already seen how it worked in the case of Wake Up Walmart and the CIW.

Consider the earlier public relations battle over Walmart "open availability" policy. Corporate headquarters in Bentonville quickly moved, in the face of organized public criticism, to overturn the harsher local policy announced by management in Nitro, West Virginia.

> A corporate spokesperson says the company reversed the store's decision because WalMart has no policy that calls for the termination of employees who are unable to work certain shifts, the Gazette reports.
>
> "It is unfortunate that our store manager incorrectly communicated a message that was not only inaccurate but also disruptive to our associates at the store," Dan Fogleman tells the Gazette. "We do not have any policy that mandates termination."[55]

[53] Jesse Walker, "Wobblies, 'open mouth sabotage,' and the history of American whistleblowing," *National Post*, October 7, 2013 <arts.nationalpost.com>.

[54] "Markets are Conversations," in Rick Levine, Christopher Locke, Doc Searls and David Weinberger, *The Cluetrain Manifesto: The End of Business as Usual* (Perseus Books Group, 2001) <www.cluetrain.com>.

[55] "95 theses," in *Ibid.*

Another example is the IWW-affiliated Starbucks union, which publicly embarrassed Starbucks Chairman Howard Schultz. It organized a mass email campaign, notifying the Co-op Board of a co-op apartment he was seeking to buy into of his union-busting activities.[56]

In late 2004 and 2005, the phenomenon of "Doocing" (the firing of bloggers for negative commentary on their workplace, or for the expression of other nonapproved opinions on their blogs) began to attract mainstream media attention, and exemplified a specialized case of the Streisand Effect. Employers, who fired disgruntled workers out of fear for the bad publicity their blogs might attract, were blindsided by the far worse publicity–far, far worse–that resulted from news of the firing (the term "Doocing" itself comes from Dooce, the name of a blog whose owner was fired). Rather than an insular blog audience of a few hundred reading that "it sucks to work at Employer X," or "Employer X gets away with treating its customers like shit," it became a case of tens of millions of readers of the major newspapers of record and wire services reading that "Employer X fires blogger for revealing how bad it sucks to work at Employer X." Again, the bosses are learning that, for the first time since the rise of the giant corporation and the broadcast culture, workers and consumers can talk back—and not only is there absolutely no way to shut us up, but we actually just keep making more and more noise the more they try to do so.[57]

There's a direct analogy between the Zapatista netwar and asymmetric warfare by labor and other anti-corporate activists. The Zapatistas turned an obscure and low-level military confrontation within an isolated province into a global political struggle. They waged their netwar with the Mexican government mostly outside Chiapas, isolating the authorities and pitting them against the force of world opinion. Similarly, networked labor activists turn labor disputes within a corporation into society-wide economic, political and media struggle, isolating corporate management and exposing it to swarming from an unlimited number of directions. Netwarriors choose their own battlefield.

Whether it be disgruntled consumers, disgruntled workers, or networked public advocacy organizations, the basic principles are the same. Jon Husband, of *Wirearchy* blog, writes of the potential threat network culture and the free flow of information pose to traditional hierarchies.

> Smart, interested, engaged and articulate people exchange information with each other via the Web, using hyperlinks and web services. Often this information… is about something that someone in a position of power would prefer that other people (citizens, constituents, clients, colleagues) not know…
>
> The exchanged-via-hyperlinks-and-web-services information is retrievable, reusable and when combined with other information… often shows the person in a position of power to be a liar or a spinner, or irresponsible in ways that are not appropriate. This is the basic notion of transparency…
>
> Hyperlinks, the digital infrastructure of the Web, the lasting retrievability of the information posted to the Web, and the pervasive use of the Web to publish, distribute and transport information combine to suggest that there are large shifts in power ahead of us. We have already seen some of that . we will see much more unless the powers that be manage to find ways to control the toings-and-froings on the Web.

[56] Tapscott and Williams, p. 271.

[57] Luigi Zingales, "In Search of New Foundations," *The Journal of Finance*, vol. lv, no. 4 (August 2000), pp. 1627–1628.

> … [T]he hoarding and protection of sensitive information by hierarchical institutions and powerful people in those institutions is under siege…[58]

Of course corporations are not entirely oblivious to these threats. The corporate world is beginning to perceive the danger of open-mouth sabotage, as well. For example, one Pinkerton thug almost directly equates sabotage to the open mouth, to the near exclusion of all other forms of direct action. According to Darren Donovan, a vice president of Pinkerton's eastern consulting and investigations division,

> [w]ith sabotage, there's definitely an attempt to undermine or disrupt the operation in some way or slander the company… There's a special nature to sabotage because of the overtness of it—and it can be violent… Companies can replace windows and equipment, but it's harder to replace their reputation… I think that's what HR execs need to be aware of because it is a crime, but it can be different from stealing or fraud.[59]

As suggested by both the interest of a Pinkerton thug and his references to "crime," there is a major focus in the corporate world on identifying whistleblowers and leakers through surveillance technology, and on the criminalization of free speech to combat negative publicity.

The eBossWatch "Boss's Tip of the Day" for August 11, 2010 warned against the possibility of employees using the Internet for "cyberlibel":

> - Cyberlibel: Disgruntled employees vent their anger by making false and harmful statements about their employers and disseminate them using the Internet. A former CFO was accused of posting messages that his employer's future was "uncertain and unstable" on an investment message board. An Internet post falsely claimed that electronic greeting cards made by Blue Mountain Arts contain a virus that destroys the recipient's computer system when they're opened.[60]

But a much more serious threat to employers is when disgruntled employees vent their anger by making *true* statements about their employers and disseminate them using the Internet.

It's also starting to dawn on employers that the Wikileaks model, specifically, can be used against them just as easily as against the national security state.

> More than anything, WikiLeaks underscores the ease at which employees can expose massive amounts of internal documents to the public anonymously, with a simple click of the mouse. Instead of stealing boxes of paper documents, employees today only need a thumb drive, which they can easily slip in their pocket and walk out the door. Worse still, they can upload several gigabytes of sensitive data to online storage sites or remote computer servers without ever leaving their desks…

[58] "Wal-Mart Nixes 'Open Availability' Policy," *Business & Labor Reports* (Human Resources section), June 16, 2005 <hr.blr.com>.

[59] "Say No to Schultz Mansion Purchase," *Starbucks Union* <www.starbucksunion.org>.

[60] Todd Wallack, "Beware if your blog is related to work," *San Francisco Chronicle*, January 25, 2005 <www.sfgate.com>.

> Bill Prachar, a partner with the law firm Compliance Systems Legal Group, says he worries that sites like WikiLeaks will start to dictate the way companies operate for fear that the public may perceive certain decisions the wrong way. "One hopes that companies can operate without the paranoia of how it may appear on WikiLeaks," says Prachar. But there's always the risk that something will be taken out of context, he says.

Or that they'll change the way they operate, rather, out of fear the public may perceive their decisions entirely correctly. Interestingly Keith Darcy, quoted in the same article, suggests that one way for organizations to immunize themselves against the Wikileaks threat is to "create a culture of trust, one in which employees feel a sense of shared ownership in the reputation and the brand of the organization." In other words, the corporation needs to behave in a less authoritarian manner—change the way it operates—to reduce the threat of having its public image destroyed by disgruntled workers.

Even more interestingly, Darcy mentions responding quickly and fairly to internal whistleblower complaints as part of that culture of trust:

> Companies should also communicate that whistleblowers will be protected and treated with respect. Whistleblowers will often report a problem internally before they go to authorities if they feel like the company won't retaliate against them. "The burden is on us to make sure when people speak to us internally that we act as quickly as possible to resolve and settle those investigations," Darcy says.[61]

This is another example of the general phenomenon, described earlier, by which competition with networks either destroys hierarchies or forces them to become less hierarchical and authoritarian.

The problem with an authoritarian approach to punishing "cyber-smears," from the standpoint of the bosses and their state, is that before you can waterboard open-mouth saboteurs at Gitmo you've got to *catch them* first. And attempts to suppress negative speech are the best way to guarantee a much wider audience for it. If the litigation over Diebold's corporate files and emails teaches anything, it's that court injunctions and similar expedients are virtually useless against guerrilla netwar. The era of the SLAPP lawsuit is over, except for those cases where the offender is considerate enough to volunteer her home address to the target. Even in the early days of the Internet, the McLibel case turned into "the most expensive and most disastrous public-relations exercise ever mounted by a multinational company."[62] As we already noted, the easy availability of web anonymity, the "writeable web" in its various forms, the feasibility of mirroring shut-down websites, and the ability to replicate, transfer, and store huge volumes of digital information at zero marginal cost, means that it is simply impossible to shut people up. The would-be corporate information police will just wear themselves out playing whack-a-mole. They will be exhausted and destroyed in exactly the same way that the most technically advanced army in the world was defeated by a guerrilla force in black pajamas.

[61] Jon Husband, "How Hard is This to Understand?" *Wirearchy*, June 22, 2007 <blog.wirearchy.com>.
[62] Jennifer Kock, "Employee Sabotage: Don't Be a Target!" <www.workforce.com>.

IV. Networked Labor Platforms

Alexander White argues that networked activist movements in general are eclipsing traditional advocacy organizations in importance, driven largely by the disruptive explosion of network communications technologies and social media— and this is nowhere more true than in the labor movement. He points to a 2013 victory over Brisbane Airport management by United Voice, an airport workers' union, resulting from an online petition on CoWorker.or (an online support platform for labor campaigns) that drew publicity and embarrassed management. The key takeway: "Although it was the union who had done most of the organisation behind the scene, there was nothing union-specific about the tactic which had resulted in the win. Anyone could have set up that petition."

> In fact, the CoWorker site is filled with examples of everyday people organising actions in the workplace where there is a union vacuum. People within and outside a workplace are coming together very quickly to take action on a specific issue. Union campaigners should be both heartened and worried at this.
>
> If workers don't need a union institution to win change in their workplace, what will cause them to join in the future?[63]

"Godfrey," an Australian who blogs on labor issues, proposes the "direct union" as an expedient by which union organizations can be detached from individual workplace locals, and workers in a given industry can network through participatory union websites. He wants to separate unionism from the workplace. In an era of declining work hours, unemployment and underemployment, and outsourcing to temp agencies, a model of unionism centered on those directly employed in the workplace is vulnerable to strategic encirclement, as workers still employed in old-line union industries are pitted against the unemployed.

> However, the technological development of the capitalist economy has reached a stage where it just needs less workers per unit of output. In other words, more and more of us will experience not being in paid employment—whether through a sheer lack of available jobs, being physically broken by the intensity of work, or just having the bad luck to live in a ecologically exhausted community. Thus, as a matter of theory, for a *direct* Union act as a vehicle to get us safely through the danger of barbarism/collapse it needs a mechanism to organise the workforce that is necessarily locked out of work. The community membership is one such solution.
>
> The first reason the community membership has the capacity to have a transformational impact is the focus on activist training. It takes those who feel the hardest blow of corporate power and gives them the theory, tools and capacity to fight. This alone opens up possibilities. The second reason, is the emphasis on establishing community branches. Many unions already have retired members associations, and they've hardly shook the world. But this system embeds people into their local community and allows for meaningful cooperation between community members and traditional union members who live in the local community. It can either network

[63] "Boss's Tip of the Week #28: The Internet: How to Keep an Asset from Becoming a Liability (or a Lawsuit)," *eBossWatch*, August 11, 2010 <blog.ebosswatch.com>.

into or form the beginnings of direct democracy neighbourhood assemblies. This means it can provide the platform for working people to engage directly in the political process without becoming captive to the party system. Community branches can come together to work out whether to run, endorse or support any candidates for political office (or not), or what direct campaigns to push in the local area such as a rent strike/direct interventions against evictions. It's here the interactive capacity of the overall Union website gets interesting because it allows for effective local and radical solutions to very quickly become national or even international in scope.[64]

This community-based unionism includes, first of all, Alexis Buss's *minority unionism*:

> Minority membership may, at first, not appear to be so inspirational. It is a recognition that a worker is in a workplace where the employer holds significant power and there is no immediate prospect that a majority of the workers at the site will bind together as a union. But look beneath its modest outer layers and you will find a radical centre with an insurrectional beginning. Minority membership is a way of, in the IWW tradition, encouraging workers to start to act together on the job regardless of whatever the contemporary legal strictures around collective bargaining or majority union recognition…
>
> There is no *Direct* unionism without minority membership. Minority membership provides the structural foundation for a worker to remain a member while moving from places covered by a union agreement to those that do not have a union agreement… And when more and more of us can only find temporary or insecure work, joining the union movement must be about more than a transactional relationship tied to a particular employer. This leads, however, to two further questions.
>
> First, what sort of infrastructure would a union require to implement a successful minority membership program? … [An] interactive website that provides both legal and organising advice and assistance would be useful. Another component would be a well-staffed membership service centre, so that a minority member may have the opportunity at least to speak with a trained union organsier to get some remote assistance or identify an opportunity for a group of minority members to push for majority status…
>
> Minority membership is a step towards taking the basic power of union recognition away from the hands of employers. Recognise us or not but we are everywhere, and we are rising.[65]

V. Examples of Networked Labor Struggle in Recent Years

We've already discussed one example of networked unionism: the Coalition of Imolakee Workers. Here are some more.

[64] Jaclyn Jaeger, "Wikileaks: The Other Whistleblower Problem," *AllBusiness.com*, April 1, <www.allbusiness.com>.

[65] "270-day libel case goes on and on… ," *Daily Telegraph*, June 28, 1996 <www.mcspotlight.org>.

Restaurant Opportunities Center. The Restaurant Opportunities Center is a networked labor organization for restaurant workers who are not represented by traditional workplace-based unions.

> On a warm evening in July, the Chrysler Center Capital Grille in Midtown Manhattan had more than customers to contend with. Inside, diners feasted on a $35 prix fixe dinner as part of the city's Restaurant Week promotion. Outside, protesters handed out mock "menus": "First course: Wage Theft. Second course: Racial discrimination." Some passersby rolled their eyes; others pumped their fists. Dishwasher Ignacio Villegas yelled: "No more exploitation of workers!" His fellow demonstrators—a few coworkers and a couple of dozen staffers and activists from the Restaurant Opportunities Center (ROC)—picked up the chant, Occupy-style.
>
> The protest was one of many the center has mounted since 2011 against the Capital Grille and its corporate parent, the restaurant giant Darden Inc. (It owns the Olive Garden and Red Lobster chains, among others.) Villegas helped sign up nearly half of the Capital Grille's staff to join a class-action lawsuit the ROC filed against Darden, alleging that the company violated minimum-wage laws and forced employees to work off the clock…
>
> Helping aggrieved dishwashers, cooks, and waitstaff take legal action against companies that violate the law, and organizing street actions to pressure management, are the hallmarks of the ROC's efforts to improve working conditions in the low-wage restaurant business. "Our approach," says ROC deputy executive director Sekou Siby, "is to surround the industry." Nationally, the center has won settlements against 13 employers, winning about $6.5 million in back wages and penalties, since its inception in 2001…
>
> The ROC is a labor group. But it's not a union. It represents a new face of the U.S. labor movement—an often-ignored, little-understood array of groups organizing workers without the union label. As unions face declining membership these workers' groups—like the mostly union-free job sectors they organize—are on the rise, particularly in New York. Because of their efforts, more restaurant workers in the city get paid sick days, domestic workers receive overtime pay, and taxi drivers will soon have health insurance.
>
> Twenty years ago, when Rutgers labor professor Janice Fine first set out to count the nonunion groups that were organizing and mobilizing workers, she found just five in the entire country. Today, her tally stands at 214… They go by names like "workers' centers" and "workers' alliances." Some are rooted in the immigrant-rights movement as much as the labor movement. Lacking the ability to engage in collective bargaining or enforce union contracts, these alternative labor groups rely on an overlapping set of other tactics to reform their industries. The ROC teaches workers their rights and also restaurant skills; advises and publicizes model employers; and helps organize protests like the ones at Capital Grille, making customers aware of what goes on behind the dining room. The ROC also lobbies state and local lawmakers for reforms and helps workers take legal action when all else fails.

> "Workers come to us with specific complaints," says ROC founder Saru Jayaraman. "Then we're able to talk to them about all of the things that they'd like to see change in their workplace. That's what we base our campaigns on." While the center only goes after companies that have allegedly broken the law, its legal settlements often require those companies to go above and beyond the law, by instituting new benefits like paid time off or creating formal procedures for workers to register grievances. Employers who violate the settlements risk both legal penalties and the resumption of pressure campaigns.[66]

OUR Walmart and the Fast Food Strikes. On October 4, 2012 dozens of Walmart workers walked out of a store in Pico Rivera, California for a one-day strike. They were joined by supporters in a rally outside the store. The walkout reflected behind-the-scenes organizing by OUR Walmart, an organization which is supported by the United Food and Commercial Workers but has never sought official recognition as a bargaining agent under the terms of the Wagner Act. The mostly quiet activism of OUR Walmart in local stores was met by management retaliation against worker complaints—one of the main grievances behind the walkout.[67]

This kind of campaign is apt to be far more effective as a means of redressing grievances than a traditional NLRB certification campaign.

> … University of California labor historian Nelson Lichtenstein predicted that in the event of a Wal-Mart employee strike, public relations would play a bigger role in restricting Wal-Mart's response than any legal restrictions. If a work stoppage mustered "a substantial number of the workers" in a store, he said, then "a tougher response would be a PR disaster."
>
> Lichtenstein, the author of "The Retail Revolution: How Wal-Mart Created a Brave New World of Business," said that if workers at one Wal-Mart store went on strike indefinitely, "they'd just close the store, period. And it would be open with a whole new workforce in a week or two. And then it would be litigated for the next three years … " On the other hand, he said, "If every month or so, the workers at a Wal-Mart store walked out, like a three-hour walkout, and then they went back in, that would have tremendous impact." Brief walk-outs have happened at U.S. WalMart stores in the past, but they've never involved multiple stores.[68]

The walkout resumed the next week, starting with a Walmart store in Los Angeles, on Oct. 9 and spreading to 28 stores in a dozen cities by the next day. Hundreds of Walmart workers (er, excuse me, "associates") protested outside company headquarters in Bentonville. Spokespersons for striking workers around the country took advantage of the publicity to expose the dirt on working conditions in Walmart stories, including cuts in hours and other reprisals against workers who raised concerns against local management.[69]

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[66] Alexander White, "Is this the future of unions?" *Alex White*, March 19, 2014 >alexwhite.org>.

[67] Godfrey, "An Indestructible Union (Part 9)," *Godfrey's Blog of Claims*, July 22, 2012 <tradeunion.wordpress.com>.

[68] Godfrey, "An Indestructible Union (Part 10)," *Godfrey's Blog of Claims*, August 5, 2012 <tradeunion.wordpress.com>.

[69] Josh Eidelson, "Alt.Labor," *The American Prospect*, January 29, 2013 <prospect.org>.

OUR Walmart threatened to "make Black Friday memorable for them" if Walmart did not address protesters demands and cease retaliation against workers attempting to organize. The statement was backed by the National Consumers League, the National Organization of Women, and the Labor Council for Latin American Advancement. Activities suggested for Black Friday included strikes, leafleting, and flash mobs. Protesting workers outside stores would ask customers "whether they really want to spend their dollars on a company that treats workers this way."[70]

Here are some examples of the open mouth sabotage carried out on the back of publicity generated by the campaign:

> Since its founding last year, OUR Walmart has called for improvements in pay, benefits, and staffing. At an OUR Walmart forum for financial analysts last week, 13-year worker Lori Amos, a former salaried manager and current backroom receiving associate, charged that systemic understaffing is undermining operations at her store in Washington state. Over the summer, said Amos, her store threw out 2,000 pounds of Halloween candy that never made it from the backroom to the shelves for Halloween. "The really sad part?" added Amos. "Management tried to sell the candy first. It was expired … the chocolate had kind of turned to a white sheen."
>
> OUR Walmart isn't calling for union recognition. But members allege that Walmart has still responded to their organizing with a classic union-busting campaign: Threatening and punishing workers for organizing (this is illegal, and Walmart denies it's happened) and mandatory meetings bashing OUR Walmart (these are legal, and Walmart doesn't deny them). OUR Walmart and its members have filed dozens of charges against the company with the National Labor Relations Board.[71]

In subsequent weeks, Walmart workers continued to carry out labor actions in anticipation of the Black Friday Strike. For example, on Nov. 2, 2012, workers from a Richmond Walmart, along with representatives of OUR Walmart and the UFCW, spoiled the grand reopeninof their store.[72]

The actual Black Friday strike itself had mixed results. It involved up to a thousand Walmart stores in over a hundred cities in 46 states, with somewhere over 500 Walmart employees participating. The typical local action was a handful of striking workers picketing a Walmart store, backed by up to several hundred sympathizers (sometimes including prominent social justice activists or politicians). The effects on staffing or volume of business at most stores appeared to be negligible.[73]

Even so, it was by far—in Josh Eidelson's words—"the strongest ever North American challenge to Walmart." Eidelson describes, in retrospect, the new pattern taken by the movement:

> The new campaign faces daunting odds and extreme versions of the hurdles facing US workers everywhere… But with a new organizing strategy and a savvy focus on Walmart's supply chain vulnerability, this attempt has come closer than any at forcing change from the dominant player in our economy…[74]

[70] Eidelson, "Walmart Workers on Strike," *Salon*, October 4, 2012 <www.salon.com>.

[71] Eidelson, "Walmart Workers on Strike."

[72] *Ibid*.; Steven Greenhouse, "Wal-Mart Labor Protests Grow, Organizers Say," *New York Times*, October 10, 2012 <www.nytimes.com>; Eidelson, "Walmart's Black Friday Ultimatum," *Salon*, October 10, 2012 <www.salon.com>.

[73] *Ibid*.

[74] *Ibid*.

The weeks leading up to the campaign saw the creation of a nationwide networked communications infrastructure designed to outlast the first tentative flexing of its muscle. Even the first, relatively modest campaign drew unprecedented nationwide publicity and embarrassment to the retail giant. What's particularly promising is OURWalmart's focus on supply chain vulnerabilities. Also promising that Walmart was deterred, by and large, from firing any of the hundreds of participating workers in the aftermath of the strike, emboldening workers in many local stores to double the membership of OURWalmart.[75]

Taken all together, with actions by warehouse workers and workers in Walmart's suppliers, Eidelson calls what Walmart experienced "an unprecedented wave of work stoppages throughout the retail giant's US supply chain."[76]

This kind of grassroots unionism, outside the National Labor Relations Board's certification process, involves a return to many of the practices—sociallybased unionism, minority unionism, etc.—that we discussed above in this chapter.

> OUR Walmart transcends the union/non-union dichotomy… It sets up an immediate structure that is available for Walmart workers that is not dependent on collective bargaining procedures. It does not need to win recognition or engage in a complicated ballot process. It can start directly campaigning and acting on the issues that matter for the workers…
>
> It introduces the concept of the membership continuum—OUR Walmart members pay a contribution of $5/month. This is a lot less than regular contributions but it's enough to set them up with a campaign and a functioning organisation until they have sufficient power to win union contracts.
>
> It allows for direct engagement between workers through North America. The forrespect.org website has a series of discussion boards and policy wikis where members can talk about issues of importance to them and swap critical information.
>
> It has avenues for direct and official international solidarity. Walmart is a massive global company so to win justice OUR Walmart workers need to be able to draw on a well of global solidarity. The campaign's use of social media to allow the campaign and its actions to play out in front of a global audience is part of this, but moreover that audience is encouraged to participate by funding striking workers. On an official level the global union federation that includes retail workers in its coverage, UNI Global, has launched an international organising campaign targeting Walmart called Alliance @ Walmart.
>
> … It cannot be defeated by closing a store, or scaring workers in a given area into voting down union recognition…
>
> What this all adds up to is a permanent campaigning structure, while it may ebb and flow in terms of momentum, that can never be stopped. It will keep flowing on towards victory.[77]

[75] Jennifer Baires and Tawanda Kanhema, "Protests mar Walmart Supercenter's re-opening in Richmond," *Richmond Confidential*, November 2, 2012 <richmondconfidential.org>.

[76] Steven Greenhouse, "Wal-Mart Dismisses Labor Protests at its Stores," *New York Times*, November 23, 2012 <www.nytimes.com>.

[77] Josh Eidelson, "The Great Walmart Walkout," *The Nation*, December 19, 2012 <www.thenation.com#>.

According to David Moberg,

> OUR Walmart strategists describe their organization as "open source," meaning that it provides resources for workers to self-organize, rather than waiting for a paid staff organizer. The Internet and social media have proven crucial in this effort, says Schlademan. "We're trying to create as many pathways as possible for people to self-organize," he says. "If we tried to do this in the conventional way, we'd never get there."[78]

OUR Walmart's focus on wildcat strikes attacking the supply chain at its most vulnerable points is a return to pre-Wagner precedents. Global just-in-time supply chains are extremely vulnerable to disruption. Walmart's revolutionary model of computer inventory management and "warehouses on wheels" is the weapon by which it achieved dominance in the retail sector and displaced older retail giants like K-Mart and Sears. But that model also leaves it wide open to attack. As Matthew Cunningham-Cook puts it, workers are "using globalization against Walmart."

> … [T]hese wildcat strikes are a reminder that, if American workers are to have a better-organized future, they will have to better understand where their corporate opponents are vulnerable.
>
> … [S]uch wildcat strikes on multiple levels of the supply chain at Walmart are unprecedented, and groups like OUR Walmart and Warehouse Workers for Justice are planning to escalate the campaign in the coming weeks…
>
> Workers at key points in the supply chain can create massive disruptions in the process. A report conducted in 2002 found that a West Coast longshoremen lockout cost the U.S. economy $2 billion daily. And, in the recent strike of just two dozen subcontracted Walmart warehouse workers in Elwood, Illinois, the strikers heard reports from allies at Walmart retail stores in the region that there were already shortages of goods. This occurred less than 10 days into the strike, Elwood warehouse worker Mike Compton told me.
>
> By focusing on key links in the supply chain, and by using a strike at the beginning of an organizing campaign instead of at the end, Walmart workers are not only taking advantage of the company's 21st-century weaknesses. They're also harkening back to an earlier form of union organization, which was far more common prior to the passage of the Wagner Act of 1935…
>
> … The magazine *Labor Notes* … has been analyzing the trends taking place on the supply chain and the global organization of labor for the past two decades.
>
> "Here we have a company, Walmart, that's not producing anything, but is selling things," says Jane Slaughter, its co-founder and co-editor. "Walmart is the master of lean supply, they are known for squeezing every cent out of their suppliers. Walmart depends on daily deliveries, and if workers can throw a monkey wrench in that, it will cause them significant problems."

[78] *Ibid*.

> A report by Warehouse Workers for Justice explains why it makes sense for organizers to focus on a place like Elwood in particular, given its location on the outskirts of Chicago:
>
> The Chicago area is the only place in North America where six Class I railroads meet. Warehouses, distribution centers, container storage locations and intermodal facilities dot the landscape. The strategic node of transportation that exists in the greater Chicago area, dubbed the "Midwest Empire," is a crucial link in the intermodal movement of goods in the United States…
>
> That the two-dozen workers were able to get back to work after their time on strike—with full back-pay—is a far cry from most labor organizing campaigns, in which there is a one-in-three chance that an employer will retaliate by firing, and in which there are usually rampant threats and interrogations leading up to an election. But in Elwood managers seem to be terrified.
>
> The importance of this link on the Walmart supply chain was indicated quite clearly by the response of the state of Illinois to a protest by Warehouse Workers for Justice and its community allies: police in riot gear, along with threats of deploying long-range acoustic devices and projectiles. The fact that a small minority of workers at a warehouse were able to cause such fear from management leads one to think that such links in the supply chain are just as tenuous as labor researchers have thought them to be.
>
> The first strike of this autumn of discontent was among warehouse workers in Mira Loma, and workers went back to work with safety improvements. But the significant victory in Elwood—caused in part by its key location on the supply chain—now gives Walmart workers across the country a real and concrete victory to point to and to work from as they escalate toward a national day of protest on Black Friday.[79]

And this kind of supply chain vulnerability is hardly limited to Walmart. Apple's inventory, for example, turns over every five days.[80] Imagine the implications for Chinese sweatshop workers, longshoremen, etc., who want to bring the company to their knees. Imagine day six, when the American shelves are bare, and cable news shows labor leaders calling for solidarity from American consumers against their sweatshop working conditions.

Global Picketline, a 2015 publication by Australia-Asia Worker Links, recommends systematic attacks at the most vulnerable points of corporate supply chains as part of a comprehensive strategy.

> A production map shows
>
> - where the raw materials or assembly products come from,
> - how they reach a company,
> - where critical assembly or processing happens, and

[79] Eidelson, "Alleging a New Wave of Retaliation, Walmart Workers Will Strike a Day Earlier," *The Nation*, November 13, 2012 <www.thenation.com>.

[80] "#Walmartstrike and the union resurgence | Godfrey's Blog of Claims," *Social Network Unionism*, November 26, 2012 <snuproject.wordpress.com>.

- how products are shipped out… A production map is developed to identify critical points where a company is vulnerable to disruption, and where their profits can be affected most easily. For example a mine may use a particular dock to ship goods, or a particular machine may be essential to the final product.

Once identified, these critical points can be targets of solidarity actions like pickets or occupations.[81]

Workers can't afford long disputes with no pay, but companies can't live without profit either. Coordinated campaigns need to cause companies maximum loss of profits and prestige, so workers win disputes.[82]

Workers solidarity becomes stronger when joint actions are undertaken. These will be planned, co-ordinated activities in more than one country that target a particular company or industry directly. These protests and actions then form part of an ongoing, mutual solidarity campaign involving workers with agreed objectives in different countries.[83]

Supply chain disruption has a venerable place in American labor history. National and regional general strikes have generally had transportation worker strikes at their core. Grover Cleveland's military intervention in the Pullman Strike probably prevented it from becoming the largest—and most successful—general strike in American history. The National Railway Labor Relations Act was passed to prevent that from ever happening again. In the 1930s regional general strikes centered on St. Louis, Detroit and California only achieved general strike status when teamsters or longshoremen entered the picture. Taft-Hartley's mandatory cooling off provisions, and its prohibitions on sympathy strikes, were intended to prevent transport workers from turning strikes in particular industries into general strikes.

Most recently, in December 2012, there was widespread business press discussion of how badly a looming strike at fourteen East and Gulf Coast ports—which was averted at the last minute—might hurt the U.S. Economy. A similar strike on the West Coast in 2002 resulted in a 4% reduction in output for the period it was in effect.[84] But that probably underestimates the effect on a company like Walmart, if such a transport strike were part of a larger coordinated campaign with Walmart suppliers and workers in Walmart stores and distribution centers themselves.

And finally the overwhelming success of the Block the Boat campaign against the Israeli shipping company Zim in Fall 2014, in protest against the Israeli assault on Gaza, demonstrates the vulnerability of global corporations to disruption of their just-in-time model.

The Walmart Black Friday action seemed to give impetus to other labor actions following the networked model of the CIW and other organizations. On November 29, workers in a number of fast food chains in New York walked off the job at dozens of stores.

> New York Communities for Change organizing director Jonathan Westintold Salon the current effort is "the biggest organizing campaign that's happened in the fast

[81] David Moberg, "The Walmart Revolt," *In These Times*, January 1, 2013 <inthesetimes.com>.

[82] Matthew Cunningham-Cook, "How Workers are Using Globalization Against Walmart," *Waging Nonviolence*, October 24, 2012 <wagingnonviolence.org>.

[83] Mikey Campbell, "Apple turns over entire inventory every five days," *AppleInsider*, May 31, 2012 <appleinsider.com>.

[84] *Global Picketline: How Workers Can Win* (Australia Asia Worker Links, May 2015), p. 11.

> food industry." A team of 40 NYCC organizers have been meeting with workers for months, spearheading efforts to form a new union, the Fast Food Workers Committee. NYCC organizers and fast food workers have been signing up employees on petitions demanding both the chance to organize a union without retaliation and a hefty raise, from near-minimum wages to $15 an hour.[85]

And labor action in the fast food industry continued to pick up steam in the spring of 2013. Dozens of employees walked off the job at McDonald's, Wendy's, Hardee's and Domino's in St. Louis, following similar strikes in New York City on April 4 and Chicago on April 24. Workers participating in all of the strikes demanded a $15/hour wage and recognition of their right to organize a union without intimidation.

> "It's clearly getting national traction," said Ed Ott, a lecturer in labor studies for the City University of New York, consultant for unions, and board member of New York Communities for Change, the group spearheading fast food organizing in the nation's largest city. "This is potentially the largest organizing drive in decades."

All the strikes have been backed by local coalitions of unions and community organizing groups.

> The limits of some of labor's other tactics—working through the governmentsupervised union election process; relying on P.R. campaigns to compel companies to negotiate; backing Democrats in hopes they'll fix labor law—help explain why organizers are taking up the strike, despite all of the challenges that come with it.
>
> Some of the features these recent strikes share in common can best be understood as strategies for dodging those obstacles: striking for just one day in order to draw more workers, and more attention, at less risk; citing labor law violations as a cause for the strikes in order to bolster workers' legal protection; staging actions with a minority of the workforce in hopes that it will inspire more of their co-workers to get involved.
>
> None of these strikes has so far brought their targets to the table. "It's not something you can do in six months," said Ott, a consultant for unions and former executive director of the New York Central Labor Council. "They're laying siege to an industry, and they're going to change it."
>
> There's no reason to think such a victory is anywhere close to happening. To win, organizers would need to convince CEOs (not the individual franchisees who own stores on paper) that negotiating with workers would be less painful than fighting with them. Whether that's possible depends in part on how effectively these efforts cultivate leaders ready to organize their co-workers—and on how many more cities see strikes.
>
> In the meantime, the campaign says that the strikes have achieved some local victories—individual stores where managers have responded by improving pay or scheduling. More significant is what *hasn't* happened: Organizers say that in

[85] *Ibid*., p. 13.

> the vast majority of cases, workers who struck in New York and Chicago haven't been punished for it. After each strike, workers returning to work have been accompanied into their stores by clergy, politicians or other community supporters, in actions meant to emphasize that the coalitions aren't depending on labor law alone to keep bosses from cracking down on activists.[86]

In any case, they're a dramatic trend, and their possible implications have been drawing a lot of attention from labor movement analysts.

> These strikes have been the defining tactic of a new movement of low-wage service workers… Small groups of workers have launched sudden strikes against big chains such as Wal-Mart and McDonald's, as well as small employers such as car washes, laundries and taxi companies. In many cases, only a minority of employees were involved, sometimes from multiple workplaces. The strikes have typically been sudden and short, lasting just long enough to broadcast their message. A few campaigns have won union recognition; more have won small victories like a pay raise or a scheduling change. But taken together, the campaigns have surprised experts like Kate Bronfenbrenner, director of labor education research at Cornell University, who says she could not have imagined such an upsurge even two years ago.[87]

In anticipation of the 2013 Black Friday protests, Walmart workers on November 6 walked off the job in stores throughout Los Angeles, protesting the punitive firing of organizers and demanding the company pay all full-time workers at least $25,000 a year.[88] About fifty of five hundred protesters outside the Chinatown Walmart were arrested for sitting down in the street and ignoring a police order to disperse.[89]

At Alternet, Alyssa Figueroa expressed optimism for the ultimate outcome of the movement, pointing out not only its unprecedented nature but also the speed of its growth as evidence that Walmart workers were shaking off the company's culture of fear.[90]

What Josh Eidelson called "the largest fast-food strike in history" began August 29, 2013.

> Fast food workers today plan to mount one-day walkouts against nearly a thousand stores in over fifty cities—the largest-ever mobilization against their growing, lowwage, non-union industry, which until last fall had never faced a substantial U.S. strike. The work stoppage comes four weeks after a four-day, seven-city strike wave in which organizers say thousands walked off the job.[91]

A Detroit McDonald's was forced to close when its work force walked out and a crowd of 200 supporters gathered outside.[92]

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[86] *Ibid*., p. 14.

[87] Brad Plumer, "Could a port strike really cripple the U.S. economy?" *Wonkblog*, December 27, 2012 <www.washingtonpost.com>.

[88] Josh Eidelson, "In rare strike, NYC fast-food workers walk out," *Salon.com*, November 29, 2012 <www.salon.com>.

[89] Eidelson, "Surprise fast food strike planned in St. Louis," *Salon*, May 8, 2013 <www.salon.com>.

[90] David Moberg, "Thank You, Strike Again," *In These Times*, July 25, 2013 <inthesetimes.com>.

[91] "LA Walmart Workers Go On Strike," *Popular Resistance*, November 7, 2013 <www.popularresistance.org>.

[92] Kathleen Miles, "Largest Civil Disobedience In Walmart History Leads To More Than 50 Arrests," *Huffington Post*, November 8, 2013 <www.huffingtonpost.com>.

After so many fast food strikes in major cities, on increasingly larger scales, the tactic seems to be becoming habit-forming.

> For Chicago strikers, many of whom have walked off the job three times this year, confronting management and informing them of the decision to strike is less nervewracking than it once was.
>
> Strikers strode up to a manager at a downtown Walgreens and, without so much as blinking, delivered a letter explaining they were walking off the job; at a Bed, Bath and Beyond in the Loop, workers strode around the store encouraging coworkers to strike with them, seemingly unconcerned about what the watching manager thought…
>
> The strikes also seem to have legitimated walking off the job as a tactic for workers, even those without a union.[93]

The movement organized a one-day strike in a hundred cities for December 5, 2013.[94]

One shortcoming of the growing fast food movement is that it appears to be driven to a large extent by top-down efforts of the conventional labor establishment. According to Adam Weaver of the I.W.W.,

> This is significant in that this is helping to popularize the use of strikes as a tactic, even for workers who are not formally part of a union, and the idea of the tactic and the experience gained can be built upon. But at the same time an on the ground analysis is needed by folks on that left that doesn't mistake this for what this is not—SEIU isn't building a movement to organize workers and fight bosses.
>
> Instead of a 'march on the boss' directed towards the corporations robbing workers daily, rather this is a 'march on the media' where the strikes serve as the visuals in a narrative of worker protest crafted by professional media consultants. Actions are scripted and run by the staff (themselves young, overworked, underpaid and working to meet difficult mobilization quotas) and the ultimate shots are called by officials in Washington, DC, not spontaneously by workers from below like the picture painted would lead you to believe.
>
> Speaking to workers involved in the campaign in several cities on the condition of anonymity I was told stories of how when important shifts in the public direction of the campaign were made they were instructed to state publicly "the workers made this decision." A national conference was held in Detroit August 15–16 by the campaign with 7–800 attendees from the core cities of the campaign, a large number being campaign staff as well. Here workers were guided through a rapid fire pep rally, where they were handed a pre-written agenda and presented with the pre-packaged plan of the August 29 strike as the only decision of the meeting. No further discussion of the direction of the campaign was had. As one worker who was involved the

[93] Alyssa Figueroa, "7 Signs the National Outcry Against Walmart Will Lead to Big Changes," *Alternet*, November 22, 2013 <www.alternet.org>.

[94] Josh Eidelson, "Largest fast food strike ever today: 58 cities will be affected," *Salon*, August 29, 2013 <www.salon.com>.

> past strikes and who attended the conference as a member of the staff selected steering committee said, that this is when they realized "maybe this isn't our movement, but this is really their [SEIU's] movement."
>
> As to where the campaign is headed the rumors leaked so far are that SEIU is still up in the air about which direction to take this effort. One possible route is a focus on major chains aimed towards a neutrality or industry standards agreement and would likely include SEIU agreeing to lobby for some sort of pro-restaurant industry tax breaks similar to what SEIU did in the California nursing home industry in promising to lobby the heavily Democratic state government for pro-industry legislation in exchange for industry wide union recognition which included agreements barring workers from striking or speaking out on their working conditions. I think this route is unlikely and not very realistic.
>
> The second and I believe more likely route would be a move towards a range of legislative efforts including state ballot initiatives allowing cities and counties to set their own minimum wage. A third potential direction might be a combination of both employer agreements and legislation such as previous efforts of unions such as HERE to raise wages through legislation but which exempted workers covered by union agreements.[95]

May 15, 2014 saw the first coordinated global one-day strike against fast food chains around the world. Largely inspired by the recent US movement, it kicked off in New Zealand. "There were protests across Asia, in South Korea, India, Indonesia, Hong Kong and Japan, in 150 US cities, and across Europe: in Ireland, Denmark, Italy, Belgium, Switzerland and more. In all, workers in 30 countries participated."[96] And in August fast food workers across the US launched protests demanding a $15/hour wage that included nonviolent civil disobedience, with home health workers also participating.[97]

A year later, Steven Greenhouse and Jana Kasperkevic at *The Guardian* described the Fight For $15 demonstrations on April 15 of 2015 as "the largest protest by low-wage workers in US history."[98]

Global Solidarity. With the globalization of supply chains comes the need for global solidarity between the workers at different points in these supply chains around the world. From the standpoint of the American labor movement this means, rather than seeing sweatshop workers in the Third World not as competitors threatening our jobs, but as comrades and fellow victims we should encourage to organize. The proper approach to offshoring is not to erect new trade barriers, but to encourage direct action by workers producing for Walmart vendors and suppliers in China or Vietnam. And in fact that sort of thing seems to be on the upswing.[99]

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[95] "Local McDonald's Forced To Close Amid Protest For Higher Wages," *CBS Detroit*, August 29, 2013 <detroit.cbslocal.com>.

[96] Micah Uetricht, "Fast Food Strike Tactics Are Debated," *In These Times*, August 30, 2013 <portside.org>.

[97] Steven Greenhouse, "Wage Strikes Planned at Fast Food Outlets," *New York Times*, December 1, 2013 <www.nytimes.com>.

[98] Adam Weaver, "Fast Food Workers Strike: What is and what isn't the Fight for Fifteen campaign," *Machete 408*, August 29, 2013 <machete408.wordpress.com>.

[99] "Global strike by fast food workers," *Union Solidarity International*, May 15, 2014 <usilive.org>.

And as Emmanuel Wallerstein argues, the kind of networked activism made possible by new communications technology has seriously eroded the earlier advantages presented by the mobility of capital.

> Ever since there has been a capitalist world-economy, one essential mechanism of its successful functioning has been the runaway factory…
>
> … What this means is that the site of production was transferred to some other part of the world-system that had "historically lower wage levels."…
>
> The problem for the multinationals is that the incredible expansion of communications has caused the end of the win-win situation. Workers in Cambodia today have begun syndical action after only a few years… There are strikes and pressure for higher wages and benefits, which they are receiving. This of course reduces the value for the multinationals of moving to Cambodia, or Myanmar, or Vietnam, or the Philippines. It now turns out that the savings of moving from China are not all that great…
>
> The bottom line is that the combination of already enormous and still increasing deruralization and the rapidity with which workers can learn of their relatively low wages and therefore begin to take syndical action has resulted in a continuing rise in the pay levels of the least skilled workers, and therefore a worldwide negative pressure of the possibilities of accumulating capital. This is not good news for the large multinationals.[100]

There has been a drastic upswing in spontaneous strikes in China, organized directly through social media so that leaders cannot be arrested. Compared to 1100 strikes in the 31 months from June 2011 through December 2013, there were 200 strikes in a two-month period of Spring 2014.[101]

Sara Horowitz and Freelancers Unions. As we saw above, Godfrey proposed adapting the old pre-Wagner model of minority unionism to the network era. Many other aspects of pre-Wagner historical unionism can be revived, in new and improved form, with the help of network communications. For example Sara Horowitz has proposes reviving the guild model of providing benefits and training, as well as the services of worker-owned temp agencies, for temporary workers. It's not surprising her first area of activity was the Bay area, because her cooperative employment agencies resemble nothing so much as the old Longshoremen's hiring halls.—

She went on to create a Freelancers Union centered in New York City.

> The labor movement needs to make sure workers can see the tangible value of union membership—not just in a bigger paycheck and stronger job protections, but also in their networked economic power.
>
> Unions need to get back in the business of building banks, insurance companies, day care centers, affordable vacation destinations—and even dreaming up new 21st

[100] Steven Greenhouse, "Fast-Food Workers Seeking $15 Wage Are Planning Civil Disobedience," *New York Times*, September 1, 2014 <www.nytimes.com>.

[101] Chris Wright, "Fight for $15 marks a new era of workers' struggle in the US," *ROAR Magazine*, May 1, 2015 <roarmag.org>.

> century institutions, like union-owned urban farms. They should be a welcoming home for social-purpose venture capitalists and entrepreneurs.[102]

By 2013, the Freelancers Union was in rapid expansion mode.

> Today, the Freelancers Union is one of the nation's fastest-growing labor organizations, with more than 200,000 members, over half of them in New York State. Ms. Horowitz, who has never lacked audacity, says she expects to expand the organization to one million members within three years…
>
> The Freelancers Union, which is based in Brooklyn, doesn't bargain with employers, but it does address what is by far these workers' No. 1 concern, by providing them with affordable health insurance. Its health insurance company covers 23,000 workers in New York State and has $105 million in annual revenue.[103]

In June 2014 the Freelancers Union offered a benefits package to freelancers nationwide in the U.S.

> 401(k) plans Health insurance Dental plans Disability insurance Term life insurance Liability insurance[104]

In October they announced a plan to open fifteen primary care health centers for freelancers over the next five years, starting in "Upper Manhattan and Jersey City, eventually expanding into Los Angeles, Philadelphia, Portland, Austin, and San Francisco."[105]

Another, similar approach is to form cooperatively-owned temp agencies—an excellent model in industries where human capital is the main source of value and overhead from physical capital outlays are minimal. A good example is New York City's Cooperative Home Care Associates, a cooperatively owned staffing agency for home care aides with 2300 workers.[106]

GNUnion. GNUnion is an offshoot of the Social Network Unionism project.[107] It's organized on a module/platform architecture, in which the network exists simply as a platform to empower the nodes. Its projects include LabourLeaks, whose initial goal is to index existing data from Wikileaks relevant to labor struggle and evolve into a specialized whistleblowing site specifically for workers to leak information about their employers. "LabourLeaks is designed to provide the means for workers—be they full time, contracted, precarious, migrant, the unemployed, men and women, old and young, to make their grievances—and documentation or other evidence that supports this—public."[108]

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[102] Jake Olzen, "How the Walmart labor struggle is going global," *Waging Nonviolence*, January 15, 2013 <wagingnonviolence.org>.

[103] Immanuel Wallerstein, "End of the Road for Runaway Factories?" Commentary No. 351, April 15, 2013 <www2.binghamton.edu>.

[104] Dan Levin, "Plying Social Media, Chinese Workers Grow Bolder in Exerting Clout," *New York Times*, May 2, 2014 <www.nytimes.com>.

[105] Sara Horowitz, "How Do You Build a Union for the 21st Century? (Step 1: Learn From History)," *The Atlantic*, September 3, 2012 <www.theatlantic.com>.

[106] Steven Greenhouse, "Freelancers Union Tackles Concerns of Independent Workers," *New York Times*, March 24, 2013 <www.nytimes.com>.

[107] Kelly McCartney, "Freelancers Union Launches National Benefits Platform," *Shareable*, June 24, 2014 <www.shareable.net>.

[108] McCartney, "Freelancers Union to Expand Health Centers Nationally," *Shareable*, October 2, 2014 <www.shareable.net>.

It also includes a Transnational Solidarity for Occupied Factories group, to provide occupied and recuperated factories with "resources, actions, exchanges, social media skill-sharing and self-education campaigns" on a networked basis.[109]

[109] Laura Flanders, "How America's Largest Worker Owned Co-Op Lifts People Out of Poverty," *Yes! Magazine*, August 14, 2014 <www.yesmagazine.org>.

10. Open Source Civil Liberties Enforcement

I. Protection Against Non-State Civil Rights Violations

In May 2010 Republican Senatorial candidate Rand Paul raised some hackles during an appearance on the Rachel Maddow show, when he confessed he'd have voted against the private discrimination provisions of the Civil Rights Act. Maddow's response was revealing:

> Maddow was baffled: "But isn't being in favor of civil rights, but against the Civil Rights Act like saying you're against high cholesterol but in favor of fried cheese?" She's begging the question; you may as well ask how someone could be for patriotism but against the PATRIOT Act. But while mistaken, the question isn't cheap rhetoric. It's revealing of Maddow's premises about law and social progress.
>
> As she insisted later, "Let's say there's a town *right now*… [T]he owner of the bowling alley says, 'we're not going to allow black patrons.' … You may think that's abhorrent and you may think that's bad business. *But unless it's illegal, there's nothing to stop that*—nothing under your worldview to stop the country from resegregating."
>
> *Unless it's illegal anything could happen*; nobody can stop it; a just social order can only form through social control. Private segregation should stop and only government can stop it; hence, Title II.[1]
>
> But Sheldon Richman challenges these assumptions:
>
> Why assume that legislation was the only way to stop segregation and today is the only thing preventing resegregation? We can easily imagine scenarios in which private nonviolent action could pressure bigots into changing their racial policies.
>
> But we don't need to imagine it. We can consult history. Lunch counters throughout the South were integrating years—years!—before the civil rights bill was passed. It happened not out of the goodness of the racists' hearts—they had to be dragged, metaphorically, kicking and screaming. It was the result of an effective nongovernment social movement.
>
> Starting in Greensboro, North Carolina, in 1960, lunch counters throughout the South began to be desegregated through direct but peaceful confrontation—sit-ins—staged by courageous students and others who refused to accept humiliating secondclass citizenship. Four years before the Civil Rights Act passed, lunch counters in downtown Nashville were integrated within four months of the launch of the Nashville Student Movement's sit-in campaign.

[1] <snuproject.wordpress.com>.

> Students were beaten and jailed, but they won the day, Gandhi-style, by shaming the bigots with their simple request to be served like anyone else. The sit-ins then sparked sympathy boycotts of department stores nationwide…
>
> To acknowledge that young people courageously stood down the bigots long before the patronizing white political elite in Washington scurried to the front of the march would be to confess that government is not the source of all things wonderful. Recall Hillary Clinton's belittling of the grassroots civil rights movement when she ran against Barack Obama: "Dr. King's dream began to be realized when President Lyndon Johnson passed the Civil Rights Act of 1964… It took a president to get it done."[2]
>
> History says she is wrong. People were realizing the dream directly.

Or as he writes elsewhere: "The libertarian answer to bigotry is community organizing."[3] Charles Johnson, similarly, posed the rhetorical question and answer: "In a freed market, with no government anti-discrimination laws, what will stop bigoted business owners from resegregating America? A. We will."[4] (It's odd, by the way, that people who say "the goverment is us" seem to think "we" are utterly powerless to do anything *except* through the state.)

Kirkpatrick Sale argues that the Civil Rights Act simply ratified, after the fact, the achievements of self-organized protestors.[5]

John Keane traces the beginnings of the civil rights movement, in large part, to two actions by individuals and self-organized groups. The first was the decision by the mother of Emmett Till, a teenage boy who was abducted and tortured to death for whistling at a white woman during a visit to Mississippi, to display his badly mutilated body in an open casket at his funeral in Chicago. Around fifty thousand mourners attended, and subsequent outrage over the acquittal of his murderers by an all-white jury blossomed into a protest movement. The second was Rosa Parks' arrest for refusing to vacate her seat to a white person on a bus, which led to the famous Montgomery bus boycott. The boycott was organized by a loose coordinating committee of like-minded citizens, which inspired similar coordinating committees in cities across the United States. The coordinating committee became an important organizational model for the civil rights movement in subsequent boycott and civil disobedience campaigns like the sit-ins; the Student Nonviolent Coordinating committee was itself an application of that model on a national scale. Some direct action tactics, in particular the use of "jail no bail" pledges as a swarming technique to overwhelm the capabilities of local police and jails, were reminiscent of earlier free speech campaigns by the Wobblies.[6]

Historically, activists have successfully fought for liberties in cases where even "progressives" in the state hesitated to act.

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[2] "Welcome to LabourLeaks—LabourLeaks.org," *GNUnion*, May 19, 2014 <gnunion.wordpress.com>.

[3] <gnunion.wordpress.com>.

[4] Charles Johnson, "Opposing the Civil Rights Act Means Opposing Civil Rights?" *The Freeman: Ideas on Liberty*, September 2010 <www.thefreemanonline.org>.

[5] Sheldon Richman, "Rand Paul and the Civil Rights Act: Was He Right?" *Christian Science Monitor*, May 26, 2010 <www.csmonitor.com>.

[6] Richman, "Context Keeping and Community Organizing," *Cato Unbound*, June 18, 2010 <www.cato-unbound.org>.

> Plans for a march on Washington for jobs and freedom on August 28 organised by the black union leader A Philip Randolph, were already under way. Kennedy was preparing a civil-rights bill that would antagonise white southerners in his own party who were opposed to integration. "I may lose the next election because of this," he told them. "I don't care."
>
> The truth is that he cared very deeply. He asked them to call the march off. "We want success in Congress," said Kennedy. "Not just a big show at the Capitol." Randolph refused. "The negroes are already in the streets," he told Kennedy.
>
> King, who deferred in age and experience to Randolph did not speak until the end of the meeting. "It may seem ill-timed," he said. "Frankly, I have never engaged in a direct-action movement that did not seem ill-timed." The march went ahead. By the time Kennedy came back from Europe he had decided that he would try to co-opt what he could not cancel. He declared his support for the march, hailing it as a "peaceful assembly for the redress of grievances".[7]

II. When the State IS the Civil Liberties Violator

So much for the question of how to defend people's civil rights without the state. But the very way the question is phrased is misleading; it implicitly limits the issue of the state's current role to one of whether or not the state *prevents* civil rights violations by private actors. But what if the state, under the present system, is *itself* an active violator of rights?

After the discussion of the Civil Rights Movement in the previous section, we can hardly move on without at least mentioning that slavery, Jim Crow and segregation were all state-enforced policies, going back to the Virginia servile code of the 17th century.

Considering that so much of this book is addressed to concerns about the effectiveness of voluntary organizations in providing protections that are now supposedly provided by the state, it seems appropriate to raise the rather awkward counter-question of what to do when the state itself is the danger to be protected against. Charles Johnson points out the difference,

> … aside from the gang colors, … between an official armed robbery like this one [a raid on a med pot dispensary, followed by civil forfeiture, as described in a Radley Balko column], and the stereotypical armed robbery carried out by freelancers… [W]hen gangsters without badges rob you, you could in principle go to the police about it and try to get the robbers arrested. But when the gangsters who robbed you *are* the police, and are happy to arrest *you* if you complain about the robbery, then who do you go to?[8]

We are ostensibly protected from the state's abuses of its own power (stipulating for the sake of argument that the initiation of force can ever be non-abusive) by all sorts of formal legal restraints: federal and state bills of rights, local police commissions, whistleblower protection laws, freedom of information laws, etc.

[7] Charles Johnson, "In a freed market, with no government anti-discrimination laws, what will stop bigoted business owners from resegregating America?" *Rad Geek People's Daily*, June 18, 2010 <radgeek.com>.

[8] Kirkpatrick Sale, *Human Scale* (New York: Coward, McCann & Geoghegan, 1980), p. 478.

The problem is, such legal restrictions are not self-enforcing. Restrictions on government abuses of power depend on government functionaries for their enforcement.

The first line of defense is self-restraint by apparatchiks in the agency ostensibly subject to a given legal protection—the "cover-your-ass" instinct may be sufficient to deter the most egregious abuses by bureaucratic drones, if there is a significant possibility that a citizen "customer" may become a squeaky wheel. But how many of us have dealt with a petty bureaucratic functionary who, despite the most superficial knowledge of her agency's actual policy, confidently told us we weren't allowed to do this or that because "it's just policy," or that we had to get this or that additional form and then get back in line in another office in another building—only to be told by the petty functionary in the other office that the first bureaucrat was wrong? It's clearly legal in most jurisdictions to record alleged "public servants" in a public place, in the performance of their official tax-funded duties; but actually *doing* it (as regularly recounted by Balko in appalling detail) is usually a good way to get your camera broken and yourself behind bars if the cops see you.

In many cases the policy itself is abusive, as in administrative law proceedings capable of tying people up for years and exhausting their life savings, without any of the common law protections like prosecutorial burden of proof that we normally think of as protecting the individual against the state.

The second line of defense is review by bureaucratic superiors who, ideally, are afraid of public embarrassment, or outside review agencies like police commissions. But how often has (say) a police commission, after reviewing the most egregious violations, found that "all policies were followed" and "there is no evidence of wrongdoing," and restored the cop (on paid administrative leave) to duty?

The third, and last, official line of defense is the courts, if you have the enormous sums of time and money required to fight a case through the legal system. You know—the same courts that have found, time and time again, that "Congress shall make no law" doesn't *really* mean "Congress shall make no law," if there happens to be a "compelling state interest" in making such a law. Or that the plain words of the Fourth Amendment don't really mean what they say because there's no "reasonable expectation of privacy." Or that an assumption of dictatorial power by the President is a "political question" on which they refuse to rule. For those who can't afford to pay for justice, there are alternatives like the plea bargain (to escape the enormous stack of frivolous charges thrown at the defendant to make sure she accepts the deal), SLAPP lawsuits, and the "loser pays" provisions included in most so-called tort "reforms."

As we saw in an earlier chapter in regard to regulatory state functions, it's sometimes hard to distinguish the state from the "bad guys" it's ostensibly regulating. The same is true of civil liberties violations. For hundreds of millions of people in the world, the question "what will we do when the United States government no longer protects us from violations of our rights?" would evoke nothing but bitter laughter. The question, for those people, is how to *stop* the United States government from supporting the dictators and death squads that violate their rights.

According to Rudolf Rocker, states have never granted or recognized civil liberties out of their own generosity, but rather have been forced to recognize them by pressure—often violent—from below.

> Political rights do not originate in parliaments; they are, rather, forced on parliaments from without. And even their enactment into law has for a long time been

> no guarantee of their security… Political rights do not exist because they have been legally set down on a piece of paper, but only when they have become the ingrown habit of a people, and when any attempt to impair them will meet with the violent resistance of the populace…
>
> The peoples owe all the political rights and privileges which we enjoy today in greater or lesser measure, not to the good will of their governments, but to their own strength.[9]

There are two viable ways of forcing the state to recognize our liberties. The first is by circumventing its enforcement capabilities, so that its claims of authority and threatened sanctions for disobedience become a paper tiger. The second is to subject it to public scrutiny and pressure from outside, so that the political cost of enforcement becomes more than it's worth.

III. Circumventing the Law

You'll notice I didn't list "change the law" or "change the government" among my viable alternatives. Reformist requires navigating a series of procedural hurdles rigged in favor of the interests with the most money and lobbyists. Consider the fruitless effort to liberalize in some small way the draconian new copyright legislation being railroaded through by the Copyright Nazis of the proprietary content industries. Endless hearings, mostly closed to the public and announced as a fait accompli. Representatives of public advocacy groups like the Electronic Frontier Foundation show up for hundreds of hours of meetings, only to see a bill or treaty which was actually drafted by RIAA/MPAA lobbyists get passed essentially unchanged—in many cases rubber-stamped by national parliaments with nobody outside a few committee leaders even allowed to read it.

To the extent that it *does* focus on influencing the state, a political movement is useful mainly for running interference, defending safe spaces in which we can build the *real* revolution—the one that *matters*. If the goal is to influence the state so as to create breathing room for counter-institutions, there's a lot more bang for the buck in mobilizing popular pressure from outside through deft propaganda and framing, than actually trying to participate in the policy process from inside. If violence is used at all, it should not be perceived by the public at large as a way of conquering anything, but as defensive force that raises the cost of government attacks on the counter-economy in a situation where the government is clearly the aggressor. Whether violent or nonviolent, any form of public effort can benefit from the example of Martin Luther King's masterful framing in the Birmingham demonstrations. To the greatest extent possible, the state's functionaries should be cast in the role of Bull Connor.

Rather than focusing on ways to seize control of the state, or to shift the correlation of forces between the state's capabilities for violence and ours, it makes far better sense to focus on ways to increase our capabilities of living how we want below the state's radar. We undermine the old corporate order, not by the people we elect to Washington, or the policies those people make, but by how we do things where we live.

Evegeny Morozov—as usual—misses the point in this regard.

[9] John Keane, *The Life and Death of Democracy* (New York and London: W.W. Norton & Company, 2009), pp. 722–725.

> There are two ways to be wrong about the Internet. One is to embrace cyberutopianism and treat the Internet as inherently democratizing. Just leave it alone, the argument goes, and the Internet will destroy dictatorships, undermine religious fundamentalism, and make up for failures of institutions.
>
> Another, more insidious way is to succumb to Internet-centrism. Internet-centrists happily concede that digital tools do not always work as intended and are often used by enemies of democracy. What the Internet does is only of secondary importance to them; they are most interested in what the Internet means. Its hidden meanings have already been deciphered: decentralization beats centralization, networks are superior to hierarchies, crowds outperform experts. To fully absorb the lessons of the Internet, urge the Internet-centrists, we need to reshape our political and social institutions in its image.[10]

These are, indeed, two ways to be wrong about the Internet. They're wrong because they share Morozov's own fundamental assumption: that the goal is to reform or compensate for the failings of existing institutions—not to supersede them. He evaluates network organization on the basis of whether, as a supplement to existing institutions, it can provide the State Department with better information for deciding whether to intervene in Syria. "Many of our political institutions regularly confront problems that are not the result of knowledge deficiencies." But for those of us who see networks as the kernel or basic organizing principle of the successor society, we could care less about reforming the State Department.

Morozov, of course, promotes "the virtues of centralization."

> Without well-organized, centralized, and hierarchical structures to push back against entrenched interests, attempts to make politics more participatory might stall, and further disempower the weak, and coopt members of the opposition into weak and toothless political settings. This was the case before the Internet, and, most likely, it will be the case long after.[11]

Decentralized networks, he says, are useless because they lack the scale for taking over existing institutions. But our goal is not to take over leadership of existing institutions, but to render them irrelevant.

The focus on securing liberty primarily through political organization— organizing "one big movement" to make sure everybody is on the same page, before anyone can put one foot in front of the other—embodies all the worst faults of 20th century organizational culture. What we need, instead, is to capitalize on the capabilities of network culture.

The best way to change "the laws," in practical terms, is to make them irrelevant and unenforceable through counter-institution building and through countereconomic activity outside the state's control. States claim all sorts of powers they're utterly unable to enforce. It doesn't matter what tax laws are on the books, if most commerce is in encrypted currency of some kind and invisible to the state. It doesn't matter how industrial patents enforce planned obsolescence, if a garage factory produces generic replacements and modular accessories for proprietary corporate

[10] Gary Younge, "I have a dream: Forty years on," *The Guardian*, August 21, 2003 <www.guardian.co.uk>.

[11] Charles Johnson, "Dr. Anarchy Answers Your Rhetorical Questions," *Rad Geek People's Daily*, January 24, 2011 <radgeek.com>.

platforms, and sells to such a small market that the costs of detecting and punishing infringement are prohibitive. It doesn't matter that local zoning regulations prohibit people doing business out of their homes, if their clientele is so small they can't be effectively monitored.

One benefit of the implosion of capital requirements for manufacturing is that the number of producers increases and the average market size shrinks to the point that they are operating below the regulatory state's radar. Traditionally, patent law (and other regulatory) enforcement depended on the low transaction costs resulting from a small number of large producers marketing a relatively small number of goods through a small number of nationwide retailers.

Without the ability to enforce their claimed powers, government commands are about as relevant as the edicts of the Emperor Norton. It''s far more costeffective to go directly after the state's enforcement capabilities than to try to change the law. This coincides to a large extent with what Dave Pollard calls "incapacitation": "rendering the old order unable to function by sapping what it needs to survive."[12]

> But suppose if, instead of waiting for the collapse of the market economy and the crumbling of the power elite, we brought about that collapse, guerrilla-style, by making information free, by making local communities energy self-sufficient, and by taking the lead in biotech away from government and corporatists (the power elite) by working collaboratively, using the Power of Many, Open Source, unconstrained by corporate allegiance, patents and 'shareholder expectations'?[13]

Incapacitation, in particular, includes undermining the public's willingness to obey the corporate state: what Gene Sharp calls "cutting off sources of political power":

> … nobody understands political power. All power has its sources. And if you can identify the sources you can cut them off…
>
> There is moral authority: Do the people giving the orders have the right to give them? There is economic power. There is control of the masses. Hitler didn't have three brains, you know; he got other people convinced that what he was doing was important and that they should help.
>
> Rather than protest the actions of those with political power, you can cut off the sources of their power…[14]

What Sharp describes as moral authority is closely related to what John Robb calls the state's "plausible promise": the credibility of its claims to offer benefits in return for allegiance as well as punishment, and specifically to serve the material interests of the average person.

In Robb's terminology, the state's enforcement capability is its *Systempunkt*— its weak point— in a systems disruption strategy. It's based on the term *Schwerpunkt* from the theory of *Blitzkrieg* warfare. The Schwerpunkt was

[12] Rudolf Rocker, *Anarcho-Syndicalism* (1938). Marked up by Chuck Munson for Spunk.org <www.spunk.org>.

[13] Evgeny Morozov, "Why Social Movements Should Ignore Social Media," *The New Republic*, February 5, 2013 <www.newrepublic.com#>.

[14] *Ibid*.

> the point of greatest emphasis… , where the enemy front lines may be pierced by an explosive combination of multiple weapons systems (tanks, artillery, airpower, and so forth). Once the line is pierced, armored forces can drive deep into enemy territory to disrupt command, control, and logistical systems. When these systems are disrupted, the top-heavy military units they support collapse in confusion.[15]

Just as important, the majority of the enemy's combat forces can be bypassed and rendered ineffective by systems disruption, without the attrition cost of defeating them piecemeal.

And the *Systempunkt*

> is the point in a system (either an infrastructure system or a marketplace), usually identified by one of the many autonomous groups operating in the field, that will collapse the target system if it is destroyed. Within an infrastructure system, this collapse takes the form of disrupted flows that result in financial loss or supply shortages. Within a market, the result is a destabilization of the psychology of the marketplace that will introduce severe inefficiencies and chaos.[16]

According to Robb, traditional strategic bombing of the kind used in WWII measured success by a metric based on the total percentage of an infrastructure's capacity which was destroyed. But by that standard—destroying a majority of the actual miles of transmission lines or rails within a network—success was extremely costly. Al Qaeda Iraq, in contrast, achieves enormous force multipliers disabling entire networks by destroying a few key nodes. A small attack on a single critical oil pipeline out of an entire network, at a cost of $2000, cost the Iraqi government $500 million in lost oil revenue.[17] In addition, the $8/barrel "terror premium" it added to the price of oil cost the global economy $640 million.[18] An attack on Shell Oil's Forcados loading dock platform in Nigeria, which cost roughly $2000 to execute, cost Shell $400,000 in lost oil exports and another $50 million from the shutdown of an adjacent oil field.[19] In the case of an electrical power grid, attacks on two percent of the high-load nodes can shut down 60% of an infrastructure's capacity, and attacks on one percent can shut down 40% of capacity.[20] Small attacks on the *Systempunkt* of any complex system can generate ROIs of several million percent. A system can be put out of operation, as if its entire physical infrastructure were destroyed, at the cost of destroying only a tiny fraction of its actual physical assets. The key is to find the key nodes whose destruction will disable the entire system.

Likewise, actually taking control of the state's policy-making apparatus, through conventional politics, is extremely costly. But by attacking the state at its *Systempunkt*—enforcement—we can render it ineffective against us at a tiny fraction of the cost. As Charles Johnson argues:

> A law that cannot be enforced is as good as a a law that has been repealed…

[15] David Pollard, "All About Power and the Three Ways to Topple It (Part 1)," *How to Save the World*, February 18, 2005 <blogs.salon.com>.

[16] Pollard, "All About Power—Part Two," *How to Save the World*, February 21, 2005 <blogs.salon.com>.

[17] Jeff Severns Guntzel, "Lessons from the Godfather: Interview with Gene Sharp," *Utne Reader*, July-August 2010 <www.utne.com.aspx>.

[18] John Robb, *Brave New War: The Next Stage of Terrorism and the End of Globalization* (Hoboken: John Wiley & Sons, 2007), p. 96.

[19] *Ibid*., p. 96.

[20] *Ibid*., p. 7.

> If you put all your hope for social change in legal reform, and if you put all your faith for legal reform in maneuvering within the political system, then to be sure you will find yourself outmaneuvered at every turn by those who have the deepest pockets and the best media access and the tightest connections. There is no hope for turning this system against them; because, after all, the system was made for them and the system was made by them. Reformist political campaigns inevitably turn out to suck a lot of time and money into the politics—with just about none of the reform coming out on the other end. But if you put your faith for social change in methods that ignore or ridicule their parliamentary rules, and push forward through grassroots direct action—if your hopes for social change don't depend on reforming tyrannical laws, and can just as easily be fulfilled by widespread success at bypassing those laws and making them irrelevant to your life—then there is every reason to hope that you will see more freedom and less coercion in your own lifetime. There is every reason to expect that you will see more freedom and less coercion tomorrow than you did today, no matter what the law-books may say.[21]

One of the benefits of stigmergic organization is that individual problems are tackled by the self-selected individuals and groups best suited to deal with them— and that their solutions are then passed on, via the network, to everyone who can benefit from them. DRM may be so hard to crack that only a handful of geeks can do it; but that doesn't mean, as the music and movie industries had hoped, that that would make "piracy" economically irrelevant. When a handful of geeks figure out how to crack DRM today, thanks to stigmergic organization, grandmas will be downloading DRM-free "pirated" music and movies at torrent sites next week.

What is the cost of systems like bittorrent, encryption and Web anonymizers, compared to the cost of fighting the RIAA's lobbyists in Washington? What is the cost of publicizing ideas of jury nullification—until the risk of a hung jury from a single rogue juror becomes so common that prosecutors decide that prosecuting simple pot possession is not worth it—compared to the cost of fighting decriminalization and medpot battles on the ballots year after year after year?

Each individual innovation in ways of living outside the control of the corporate-state nexus creates a demonstration effect: You can do this too! And with each new hack to the system, the more the counter-economy becomes a coherent whole opaque to the corporate state.

In light of all this, the most cost-effective "political" effort is simply making people understand that they don't need anyone's permission to be free. Start telling them right now that the law is unenforceable, and disseminating knowledge as widely as possible on the most effective ways of evading it. Publicize examples of ways we can live our lives the way we want, with institutions of our own making, under the radar of the state's enforcement apparatus: local currency systems, free clinics, ways to protect squatter communities from harassment, home-based microenterprises quietly trading with friends and neighbors in defiance of zoning and licensing laws, micromanufacturers producing knockoffs on such a small scale that patent enforcement costs more than it's worth, and so on. Educational efforts to undermine the state's moral legitimacy, educational campaigns to demonstrate the unenforceability of the law, and efforts to develop and circulate means of circumventing state control, are all things best done on a stigmergic basis.

Thomas Knapp provides a good practical example of Eric Raymond's Bazaar in operation when it comes to techniques of resistance—the G-20 protests in Philadelphia:

[21] *Ibid*., p. 13.

> During the G-20 summit in the Pittsburgh area last week, police arrested two activists. These particular activists weren't breaking windows. They weren't setting cars on fire. They weren't even parading around brandishing giant puppets and chanting anticapitalist slogans.
>
> In fact, they were in a hotel room in Kennedy, Pennsylvania, miles away from "unsanctioned" protests in Lawrenceville … listening to the radio and availing themselves of the hotel's Wi-Fi connection. Now they stand accused of "hindering apprehension, criminal use of a communication facility and possessing instruments of crime."
>
> The radio they were listening to was (allegedly) a police scanner. They were (allegedly) using their Internet access to broadcast bulletins about police movements in Lawrenceville to activists at the protests, using Twitter…
>
> Government as we know it is engaged in a battle for its very survival, and that battle, as I've mentioned before, looks in key respects a lot like the Recording Industry Association of America's fight with peer-to-peer "file-sharing" networks. The RIAA can—and is—cracking down as hard as it can, in every way it can think of, but it is losing the fight and there's simply no plausible scenario under which it can expect to emerge victorious. The recording industry as we know it will change its business model, or it will go under.
>
> The Pittsburgh Two are wonderfully analogous to the P2P folks. Their arrest boils down, for all intents and purposes, to a public debugging session. Pittsburgh Two 2.0 will set their monitoring stations further from the action (across jurisdictional lines), use a relay system to get the information to those stations in a timely manner, then retransmit that information using offshore and anonymizing proxies. The cops won't get within 50 miles of finding Pittsburgh Two 2.0, and anything they do to counter its efficacy will be countered in subsequent versions.[22]

Two more recent examples are the use of Twitter in Maricopa County to alert the Latino community to raids by Sherrif Joe Arpaio, and to alert drivers to sobriety checkpoints.[23]

One especially encouraging development is the stigmergic sharing of innovations in the technologies of resistance between movements around the world, aiding each other across national lines and bringing combined force to bear against common targets. Both the Falun Gong and the Tor project have played major roles in distributing encryption and proxy server technology to dissidents in Iran and elsewhere around the world.[24]

Statism will ultimately end, not as the result of any sudden and dramatic failure, but as the cumulative effect of a long series of little things. The costs of enculturing individuals to the state's view of the world, and of dissuading a large enough majority of people from disobeying when they're pretty sure they're not being watched, will result in a death of a thousand cuts. More and more of the state's activities, from the perspective of those running things, will just cost more (in terms not only of money but of just plain mental aggravation) than they're worth. The decay

[22] *Ibid*., p. 99.

[23] *Ibid*., p. 105.

[24] Johnson, "Counter-economic optimism," *Rad Geek People's Daily*, February 7, 2009 <radgeek.com>.

of ideological hegemony and the decreased feasibility of enforcement will do the same thing to the state that file-sharing is now doing to the RIAA.

IV. Circumvention: Privacy vs. Surveillance

Evgeny Morozov, in *The Net Delusion*, almost exclusively emphasizes the Internet's potential for ubiquitous surveillance by authoritarian states. Activists who use Facebook and Twitter to coordinate their subversion, he argues, are just lumping themselves into a single target for easy identification and arrest.

But Morozov writes as though it were a static situation in which only the state is capable of reacting to ongoing events; in so doing, he ignores one of the most important benefits of network organization: the way it facilitates rapid response to and circumvention of state attempts at surveillance and repression.

As Cory Doctorow writes: "of the world's most ingeniously paranoid experts have spent 20-plus years thinking up plausible technological nightmare scenarios, all of which are more frightening than Morozov's efforts… " And these people have spent the same 20-plus years developing countermeasures.

> This failure to engage with the best thinking and writing on the subject of the internet's special power to connect and liberate is Net Delusion's most serious demerit. When Morozov talks about the security risks arising from dissidents' use of Facebook— which neatly packages up lists of dissidents to be targeted by oppressive nations' secret police—he does so without ever mentioning the protracted, dire warnings of exactly this problem that have come from the "cyber-utopian" vanguard as embodied by groups such as the Electronic Frontier Foundation, NetzPolitik, Knowledge Ecology International, Bits of Freedom, Public Knowledge, and dozens of other pressure groups, activist organisations and technical projects around the world.
>
> Indeed, there is hardly any mention at all of history's most prominent internet freedom fighters, such as the venerable cypherpunks movement, who have spent decades building, disseminating and promoting the use of cryptographic tools that are purpose-built to evade the kind of snooping and network analysis he (rightly) identifies as being implicit in the use of Facebook, Google and other centralised, private tools to organise political movements.
>
> Though Morozov is correct in identifying inherent security risks in the use of the internet by dissidents, his technical analysis is badly flawed. In arguing, for example, that no technology is neutral, Morozov fails to identify one crucial characteristic of cryptographic systems: that it is vastly easier to scramble a message than it is to break the scrambling system and gain access to the message without the key.
>
> Practically speaking, this means that poorly resourced individuals and groups with cheap, old computers are able to encipher their messages to an extent that they cannot be deciphered by all the secret police in the world, even if they employ every computer ever built in a gigantic, decades-long project to force the locks off the intercepted message. In this sense, at least, the technological deck is stacked in favour of

dissidents—who have never before enjoyed the power to hide their communiques beyond the reach of secret police—over the state, who have always enjoyed the power to keep secrets from the people.

Morozov's treatment of security suffers from further flaws. It is a truism among cryptographers that anyone can design a system so secure that he himself can't think of a way of breaking it… This is why serious information security always involves widespread publication and peer-review of security systems. This approach is widely accepted to be the best, most effective means of identifying and shoring up defects in security technology.

And yet, when Morozov recounts the tale of Haystack, a trendy, putatively secure communications tool backed by the US state department that was later found to be completely insecure, he accepts at face value the Haystack creator's statement that his tool was kept secret because he didn't want to let Iranian authorities reverse-engineer its workings (real security tools work even if they have been reverse-engineered).

Instead, Morozov focuses his criticism on the "release early, release often" approach to free and open source software, and mocks the aphorism "with enough eyeballs, all bugs are shallow," though if these had been applied to Haystack, it would have been revealed as a failure long before it got into the hands of Iranian activists. Here, Morozov is as wrong as he could possibly be: if you want to develop secure tools to allow dissidents to communicate beneath the noses of oppressive regimes, you must widely publish the workings of these tools and revise them frequently as your peers identify new vulnerabilities in them…

The picture Morozov paints of information security is misleadingly static. Noting that the web has allowed an alarming amount of surveillance by commercial actors such as ad-networks, Morozov concludes that this kind of tracking will come to the world's censorious, spying governments. But internet users who perceive a threat from advertisers face few difficulties in limiting this spying with ad blockers and the like. Lamentably, relatively few people take advantage of these countermeasures, but to assume that dissidents in oppressive regimes will have the same sanguine trust of their governments that punters have towards Google's tracking cookies is a rather titanic leap. In Morozov's analysis, your vulnerability on the web remains the same whether you're in a friendly or adversarial relationship to the site you're visiting or the snoop you're worrying about.

Morozov is also willing to assume an improbable mien of credulity when it suits his argument—for example, he worries that the Chinese government proposed to install a mandatory censorware program on every PC called Green Dam, even though this move was ridiculed by security experts around the world, who correctly predicted that it would be a dismal failure (if censorware can't prevent your 12-year-old from looking at porn, it won't stop educated Chinese internet users from finding out about Falun Gong)…

Everyone I know in this movement—from donors to toolsmiths to translators to front-line activists to UN wonks—knows that the internet presents a risk as well

> as an opportunity. But unlike Morozov, these people have a program for minimising the risks arising from internet use (which is why there is so much campaign activity around the privacy and censorship problems arising from proprietary software, social networking services, and centralised data-collection systems such as Google) and maximising its efficacy as a tool for liberation, through the development of software and training that provides better anonymity, better communications security, and even abstract tools like zero-knowledge networking system that allow for the broad dissemination of information among large groups of people without revealing their identities.

Morozov's unconscious agenda seems to have a lot in common with Malcolm Gladwell's, as Doctorow observes.

> It seems that Morozov wants to see the chaos of popular, grassroots movements replaced with a kind of orderly, top-down style of regimented activism led by intellectuals whose thoughts can't be pithily expressed in 140-character tweets. Whether or not Morozov sees himself as one of those intellectuals is never explicitly stated.[25]

Seeing Like a State *and* The Art of Not Being Governed. The work of James Scott is relevant here. In *Seeing Like a State*, he develops the concept of "legibility": i.e.,

> a state's attempt to make society legible, to arrange the population in ways that simplified the classic state functions of taxation, conscription, and prevention of rebellion… The premodern state was, in many crucial respects, partially blind; it knew precious little about its subjects, their wealth, their landholdings and yields, their location, their very identity. It lacked anything like a detailed "map" of its terrain and its people. It lacked, for the most part, a measure, a metric, that would allow it to "translate" what it knew into a common standard necessary for a synoptic view. As a result, its interventions were often crude and self-defeating.
>
> … How did the state gradually get a handle on its subjects and their environment? Suddenly, processes as disparate as the creation of permanent last names, the standardization of weights and measures, the establishment of cadastral surveys and population registers, the invention of freehold tenure, the standardization of language and legal discourse, the design of cities, and the organization of transportation seemed comprehensible as attempts at legibility and simplification. In each case, officials took exceptionally complex, illegible, and local social practices, such as land tenure customs or naming customs, and created a standard grid whereby it could be centrally recorded and monitored…[26]
>
> Each undertaking also exemplified a pattern of relations between local knowledge and practices on one hand and state administrative routines on the other… In each

[25] Thomas L. Knapp, "The Revolution Will Not Be Tweeted," *Center for a Stateless Society*, October 5, 2009 <c4ss.org>.

[26] Katherine Mangu-Ward, "The Sheriff is Coming! The Sheriff is Coming!" *Reason Hit & Run*, January 6, 2010 <reason.com>; Brad Branan, "Police: Twitter used to avoid DUI checkpoints," *Seattle Times*, December 28, 2009 <seattletimes.nwsource.com>.

> case, local practices of measurement and landholding were "illegible" to the state in their raw form. They exhibited a diversity and intricacy that reflected a great variety of purely local, not state, interests. That is to say, they could not be assimilated into an administrative grid without being either transformed or reduced to a convenient, if partly fictional, shorthand. The logic behind the required shorthand was provided… by the pressing material requirements of rulers: fiscal receipts, military manpower, and state security. In turn, this shorthand functioned… as not just a description, however inadequate. Backed by state power through records, courts, and ultimately coercion, these state fictions transformed the reality they presumed to observe, although never so thoroughly as to precisely fit the grid.[27]

Scott's concept of legibility is closely related to—and appears to have been influenced by—what Michel Foucault called "panopticism." Consider how he describes legibility in operational terms:

> Legibility is a condition of manipulation. Any substantial state intervention in society— to vaccinate a population, produce goods, mobilize labor, tax people and their property, conduct literacy campaigns, conscript soldiers, enforce sanitation standards, catch criminals, start universal schooling—requires the invention of units that are visible… Whatever the units being manipulated, they must be organized in a manner that permits them to be identified, observed, recorded, counted, aggregated, and monitored. The degree of knowledge required would have to be roughly commensurate with the depth of the intervention. In other words, one might say that the greater the manipulation envisaged, the greater the legibility required to effect it.
>
> It was precisely this phenomenon, which had reached full tide by the middle of the nineteenth century, that Proudhon had in mind when he declared, "To be ruled is to be kept an eye on, inspected, spied on, regulated, indoctrinated, sermonized, listed and checked off, estimated, appraised, censured, ordered about… To be ruled is at every operation, transaction, movement, to be noted, registered, counted, priced, admonished, prevented, reformed, redressed, corrected."
>
> From another perspective, what Proudhon was deploring was in fact the great achievement of modern statecraft. How hard-won and tenuous this achievement was is worth emphasizing. Most states, to speak broadly, are "younger" than the societies that they purport to administer. States therefore confront patterns of settlement, social relations, and production, not to mention a natural environment, that have evolved largely independent of state plans. The result is typically a diversity, complexity, and unrepeatability of social forms that are relatively opaque to the state, often purposefully so…
>
> If the state's goals are minimal, it may not need to know much about the society… If, however, the state is ambitious—if it wants to extract as much grain and manpower as it can, short of provoking a famine or a rebellion, if it wants to create a literate, skilled, and healthy population, if it wants everyone to speak the same language or

[27] Eli Lake, "Hacking the Regime," *The New Republic*, September 3, 2009 <www.tnr.com>.

> worship the same god—then it will have to become both far more knowledgeable and far more intrusive.[28]

In the same book he mentioned the concepts of "state spaces and nonstate spaces"; state spaces are geographical regions with high-density population and high-density grain agriculture, "producing a surplus of grain… and labor which was relatively easily appropriated by the state." The conditions of nonstate spaces were just the reverse, "thereby severely limiting the possibilities for reliable state appropriation."[29]

In *The Art of Not Being Governed*, Scott surveys the populations of "Zomia," the highland areas spanning all the countries of Southeast Asia, which are largely outside the reach of the governments there. He suggests areas of commonality between the Zomians and people in nonstate areas around the world, upland and frontier people like the Cossacks, Highlanders and "hillbillies," as well as runaway slave communities in inaccessible marsh regions of the American South.

States attempt to maximize the appropriability of crops and labor, designing state space so as "to guarantee the ruler a substantial and reliable surplus of manpower and grain at least cost… " This is achieved by geographical concentration of the population and the use of concentrated, high-value forms of cultivation, in order to minimize the cost of governing the area as well as the transaction costs of appropriating labor and produce.[30] State spaces tend to encompass large "core areas" of highly concentrated grain production "within a few days' march from the court center," not necessarily contiguous with the center but at least "relatively accessible to officials and soldiers from the center via trade routes or navigable waterways."[31] Governable areas are mainly areas of high-density agricultural production linked either by flat terrain or watercourses.[32]

In Zomia, as Scott describes it:

> Virtually everything about these people's livelihoods, social organization, ideologies, … can be read as strategic positionings designed to keep the state at arm's length. Their physical dispersion in rugged terrain, their mobility, their cropping practices, their kinship structure, their pliable ethnic identities, and their devotion to prophetic, millenarian leaders effectively serve to avoid incorporation into states and to prevent states from springing up among them.[33]

In order to avoid taxes, draft labor and conscription, they practiced "escape agriculture: forms of cultivation designed to thwart state appropriation." Their social structure, likewise, "was designed to aid dispersal and autonomy and to ward off political subordination."[34]

The nonstate space is a direct inversion of the state space: it is "state repelling," i.e. "it represents an agro-ecological setting singularly unfavorable to manpower- and grain-amassing strategies of states. States "will hesitate to incorporate such areas, inasmuch as the return, in manpower and grain, is likely to be less than the administrative and military costs of appropriating

[28] Cory Doctorow, "We need a serious critique of net activism," *The Guardian*, January 25, 2011 <www.guardian.co.uk>.

[29] James Scott, *Seeing Like a State*, p. 2.

[30] *Ibid*., p. 24.

[31] *Ibid*., pp. 183–184.

[32] *Ibid*., p. 186.

[33] James C. Scott, *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia* (New Haven & London: Yale University Press, 2009), pp. 40–41.

[34] *Ibid*., p. 53.

it."[35] Nonstate spaces benefit from various forms of "friction" that increase the transaction costs of appropriating labor and output, and of extending the reach of the state's enforcement arm into such regions. These forms of friction include the friction of distance[36] (which amounts to a distance tax on centralized control) and the friction of terrain or altitude.[37]

I suggest that the concepts of "state space" and "nonstate space," if removed from Scott's immediate spatial context and applied by way of analogy to spheres of social and economic life that are more or less amenable to state control, can be useful for us in the kinds of developed Western societies where to all appearances there are no geographical spaces beyond the control of the state.

State spaces in our economy are sectors which are closely allied to and legible to the state. Nonstate spaces are those which are hard to monitor and where regulations are hard to enforce.

Based on the state's preferences for "legibility, appropriation, and centralization of control," it will tend to promote "institutional arrangements [that] can be readily monitored and directed from the center and can be easily taxed… "

> The principles of standarization, central control, and synoptic legibility to the center could be applied to many… fields. If we were to apply them to education, for example, the most illegible education system would be completely informal, nonstandardized instruction determined entirely by local mutuality. The most legible educational system would resemble Hippolyte Taine's description of French education in the nineteenth century, when "the Minister of Education could pride himself, just by looking at his watch, which page of Virgil all schoolboys of the Empire were annotating at that exact moment."[38]

State spaces, especially, are associated with legible forms of production. That means, among other things, an economy dominated by large business units like oligopoly corporations and large-scale agribusiness. Marx rightly described the state as the executive committee of the ruling class, which is dominated by the leaders of the corporate economy and finance capital. But the relationship is two-way. The large corporation and the state exist in a symbiotic relationship. The state itself, in the narrow sense of the apparatus of functionaries who are actually on the public payroll, has a preference for large-scale units of economic organization because they are most amenable to being used as extensions of the state's taxing and enforcement functions. Scott points to the tendency by which "large units are favored over small factories or artisanal production," citing Jeffrey Sachs' observation that "Central planners had no desire to coordinate the activities of hundreds or thousands of small firms in a sector if one large firm could do the job. A standard strategy, therefore, was to create one giant firm wherever possible."[39] More broadly, the state prefers large-scale property to small, petty bourgeois property, large farms to small peasant holdings, and formalized economic activity in the cash nexus to informal exchange, barter or gifting.[40]

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[35] *Ibid*., p. 58.
[36] *Ibid*., x.
[37] *Ibid*., p. 23.
[38] *Ibid*., p. 178.
[39] *Ibid*., p. 51.
[40] *Ibid*., p. 61.

The same effects achieved through spatial distance and isolation and the high costs of physical transportation in Scott's Zomia can be achieved in our economy, without all the inconvenience, through such expedients as encryption and darknets. Recent technological developments have drastically expanded the potential for non-spatial, non-territorial versions of the nonstate spaces that Scott describes. People can remove themselves from state space by adopting technologies and methods of organization that make them illegible to the state, without any actual movement in space.

The transaction costs of overcoming opacity and illegibility, and enforcing obedience in an atmosphere of non-compliance, function as a tax in a manner analogous to John Robb's "terrorism tax" which we discussed in an earlier chapter. It makes some "spaces" (i.e. sectors or areas of life) more costly to govern than they're worth. The greater an area's distance from the center, the higher the concentration of value or value-to-weight ratio a unit of output must have to be worth appropriating and carrying off to the capital. The further from the center an area is, the larger the share of its economy will cost more than it's worth to exploit.[41] It's somewhat analogous to the concept of EROEI in the field of energy; if the purpose of the state is to extract a surplus on behalf of a privileged class, the "governance tax" reduces the amount of surplus which is extracted per input of enforcement effort.

Anything that reduces the net "EROEI" of the system, the size of the surplus which the state is able to extract, will cause it to shrink to a smaller equilibrium scale of activity. The more costly enforcement is and the smaller the revenues the state and its corporate allies can obtain per unit of enforcement effort, the more hollow they become and the more areas of life they retreat from as not worth the cost of governing.

Our strategy, in attacking the state's enforcement capabilities as the weak link of state capitalism, should be to create metaphoric nonstate spaces like darknets, forms of physical production which are so small-scale and dispersed as to present serious surveillance and enforcement costs, etc., and to shift the correlation of forces between nonstate and state "spaces."

From our standpoint, technologies of liberation reduce the cost and inconvenience of evasion. In Scott's work, for people in state spaces the labor they have sunk into their fields over generations, the more reluctant they are to leave in order to escape the state's taxation.[42] In Zomia, "not being governed" frequently entailed adopting "subsistence strategies aimed to escape detection and maximize their physical mobility should they be forced to flee again at a moment's notice." This could involve a real sacrifice in quality of life, in terms of the categories of goods which could not be produced, the categories of food that were unavailable, etc.[43] Historically, when not being governed required spatial distance and inaccessibility, creating a nonstate space meant a choice of technologies of living based on the need to be less legible. In many cases this translated into "abandoning fixed cultivation to take up shifting agriculture and foraging," the deliberate choice of a more "primitive" lifestyle for the sake of autonomy, and the conscious choice of less productive methods of cultivation and a smaller surplus.[44]

Liberatory technologies now offer the potential to eliminate the necessity for this tradeoff between autonomy and standard of living. We want to render ourselves as ungovernable as the people of Zomia, without the inconvenience of living in the mountains and swamps or living

[41] *Ibid*., p. 219.
[42] *Ibid*., p. 402n. 74.
[43] *Ibid*., p. 220 table.
[44] *Ibid*., p. 73.

mostly on root crops. The more areas of economic life that are rendered illegible to the state through liberatory technology, the less the differential in standard of living between state and nonstate areas.

Scott names mobility as his "second principle of evasion." Mobility, "the ability to change location," renders a society inaccessible through the ability to "shift to a more remote and advantageous site." It is "a relatively frictionless ability to shift location… "[45] In terms of our analogous nonspatial "nonstate spaces" in Western societies, this is mirrored by the agility and flexibility of networks.

V. Exposure, Embarrassment and Shifting the Terms of Debate

One especially important variant of the stigmergic principle is educational and propaganda effort. Even though organized, issue-oriented advocacy groups arguably can have a significant effect on the state, in pressuring the state to cease or reduce suppression of the alternative economy, the best way to maximize bang for the buck in such efforts is simply to capitalize on the potential of network culture: that is, put maximum effort into just getting the information out there, giving the government lots and lots of negative publicity, and then "letting a thousand flowers bloom" when it comes to efforts to leverage it into political action. That being done, the political pressure itself will be organized by many different individuals and groups operating independently, spurred by their own outrage, without their necessarily even sharing any common libertarian ideology.

A good recent example is the role of Wikileaks in sparking the Tunisian revolt. Wikileaks made the American ambassador's private assessment of the regime's corruption publicly available, and local dissident groups leveraged the information into a revolution. The demonstration effect of the "Twitter Revolution" in Tunisia started a chain of dominoes throughout the Arab world—most notably in Egypt.

In the case of any particular state abuse of power or intervention into the economy, there are likely to be countless subgroups of people who oppose it for any number of idiosyncratic reasons of their own, and not from any single ideological principle. If we simply expose the nature of the state action and all its unjust particular effects, it will be leveraged into action by people in numbers many times larger than those of the particular alternative economic movement we are involved in.

Consider, in the field of civil liberties, what Radley Balko does every day, just through his own efforts at exposing the cockroaches of law enforcement to the kitchen light. When Woodward and Bernstein uncovered Watergate, they didn't try to organize a political movement to capitalize on it. They just published the info and a firestorm resulted. A good example in the networked information era is the case of the Diebold emails. Bev Harris simply published the information, and a whole range of advocacy groups made their own use of it.

This is an example of what Robb calls "self-replication": "create socially engineered copies of your organization through the use of social media. Basically, this means providing the motivation, knowledge, and focus necessary for an unknown person (external and totally unconnected to

[45] *Ibid*., p. 65.

your group) to conduct operations that advance your group's specific goals (or the general goals of the open source insurgency)."[46]

It's because of increased levels of general education and the diffusion of more advanced moral standards that countries around the world have had to rename their ministries of war "ministries of defense." It's for the same reason that, in the twentieth and twenty-first centuries, governments could no longer launch wars for reasons of naked *Realpolitik* on the model of the dynastic wars of two centuries earlier; rather, they had to manufacture pretexts based on "self-defense." Hence pretexts like the mistreatment of ethnic Germans in Danzig to justify Hitler's invasion of Poland, and the Tonkin Gulf incident and Kuwaiti incubator babies as pretexts for American aggressions. That's not to say the pretexts had to be very good to fool the general public; but network culture is changing that as well, as witnessed by the respective levels of anti-war mobilization in the first and second Gulf wars.

More than one thinker on network culture has argued that network technology and the global justice movements piggybacked on it are diffusing more advanced global moral norms and putting increasing pressure on governments that violate those norms.[47] Global activism and condemnation of violations of human rights are an increasing source of embarrassment and pressure. NGOs and global civil society are emerging as a powerful countervailing force against both national governments and global corporations. Governments and corporations frequently can find themselves isolated and exposed in the face of an intensely hostile global public opinion quite suddenly, thanks to networked global actors.

This manifests itself in such operations as Copwatch, which provides a national database of citizen complaints against individual local cops and whose local patrols regularly record police activity. Video footage of police riots at antiglobalization demonstrations, as well as beatings and other malfeasance by individual cops, frequently winds up going viral. The possibilities for recording police and other official misbehavior, in recent years, have exploded thanks to smart phones with video capability.

The police, naturally, generally don't take kindly to being recorded. People recording the police, as often as not, can expect to be arrested for "interfering with police business" or have their cameras seized and footage deleted—despite the fact that it's expressly legal in 47 states to record police in the performance of their public duties. As you might expect, this has simply led to police censorship being treated as damage and routed around. Innovation in technology and techniques is rapidly increasing the difficulty of police interference with citizen surveillance. Radley Balko writes:

> Twenty years after George Holiday's grainy video of Los Angeles police officers beating motorist Rodney King spawned worldwide outrage and later incited riots across the city, last year's protests in Iran, this year's protests all across the Arab world and now the Occupy movements have all demonstrated just how far personal technology has come to empower citizens to combat government abuse. Political leaders, police and security officials around the world now crack down on protests with the knowledge that their actions could and quite likely will be beamed around the globe. It's not only altering the balance of power and bringing new transparency and ac-

[46] *Ibid*., p. 181.
[47] *Ibid*., p. 188.

> countability to police and public officials, it may even be altering how police and governments react to dissent…
>
> Carlos Miller, who runs the Photography Is Not a Crime blog and has himself been wrongly arrested for recording or photographing police on a number occasions, has been documenting the way technology is moving power to people (and the government's push back) for several years. "The amazing thing about these videos is that as soon as the police start to use force, you see 15 cellphone cameras go up in the air," Miller says. "It's pretty amazing."
>
> Smartphone apps like "Qik" and "UStream" now not only allow users to stream video in real time, but they also then archive the video. That means a copy of every user's video is preserved off-site. If police or other government officials destroy a phone or confiscate a memory card, there's still a copy of the video elsewhere. Users can also set up accounts to notify email lists or post updates to their Twitter or Facebook accounts the moment they stream a new video. Which means that even if police are later able to get into a protester's phone, access a "Qik" or "UStream" account, and delete an incriminating video, by that time dozens of people may have already downloaded it.
>
> The power-shifting nature of cellphone video may be most prominent in the court proceedings that take place after the protests are over. In the past, courts, prosecutors and juries have mostly accepted police accounts of altercations with protesters as the official narrative. Now, in both criminal proceedings of protesters charged with crimes and in civil suits brought by protesters alleging police abuse, it's likely that any significant protest will have independent video shot from multiple angles to ferret out what actually happened.[48]

Balko, writing elsewhere, reinforces his earlier point about the moral effects of citizen video:

> … it's hard to overstate the power of streaming and off-site archiving. Prior to this technology, prosecutors and the courts nearly always deferred to the police narrative; now that narrative has to be consistent with independently recorded evidence. And as examples of police reports contradicted by video become increasingly common, a couple of things are likely to happen: Prosecutors and courts will be less inclined to uncritically accept police testimony, even in cases where there is no video, and bad cops will be deterred by the knowledge that their misconduct is apt to be recorded.[49]

Another project, OpenWatch, is "a global participatory counter-surveillance project which uses cellular phones as a way of monitoring authority figures." OpenWatch, whose apps "secretly record media and then anonymously upload it," is "the web counterpart to the Cop Recorder and OpenWatch Recorder applications for Android and iPhone.[50] Police Tape, an Android app from the American Civil Liberties Union, is designed to allow citizens to covertly record the police.

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[48] *Ibid*., p. 184.

[49] John Robb, "STANDING ORDER 8: Self-replicate," *Global Guerrillas*, June 3, 2009 <globalguerrillas.typepad.com>.

[50] Paul Hartzog, "Panarchy: Governance in the Network Age," <www.panarchy.com>.

When activated, it hides itself from casual inspection, and it has a mode that causes it to send its recording to an ACLU-operated server, protecting against police seizure and deletion.[51]

Citizen video has had a revolutionary effect, both on public perceptions of the police and on police self-perception.

> [New York ACLU Director Donna] Lieberman noted that video evidence had led to the dismissal of charges against 227 protesters from one location alone during the tumultuous week of demonstrations. "We've already seen that the videos of what happened on the Brooklyn Bridge are being used to urge dismissal of those hundreds of arrests there," she added.
>
> Protesters' cameras have created many of the iconic images of this movement: NYPD supervisor Anthony Bologna pepper-spraying several women at point-blank range; a protester—later identified as activist Felix Rivera-Pitre—being spun around and punched in the face by a cop; a legal observer being run over by a police scooter and then hit with a baton by another cop; a marine—and Iraq vet—yelling at befuddled cops that 'these are American citizens and they have no guns.' These images helped propel a small movement into a global phenomenon…
>
> Michael Ratner, president of the Center for Constitutional Rights, told AlterNet that the video of the women writhing on the ground in agony might end up having an effect similar to that of the infamous civil rights-era footage of Bull Connor setting dogs on black protesters in the South. "That just changed how Northerners viewed the Southern struggles," he said. "And I think we'll see this as more and more videos emerge of people being beaten, sprayed and unlawfully caged during these protests."…
>
> Cameras have become an integral part of activists' legal strategy. "We just encourage everyone to get out there with their cameras," says Ratner. "Let the cops push you around, let them slap you, let them arrest you, but it's absolutely crucial to get your cameras out there. Because all the lawsuits we can bring, which we should resolve five years from now, won't make the same difference as putting that stuff on YouTube and the evening news will do."
>
> Cameras aren't just shining a light on aggressive crowd control. Videos of police abuse at traffic stops, "stop-and-frisk" incidents and just about everywhere else litter YouTube, and according to the New York Daily News, the constant scrutiny is having an effect on rank-and-file officers. "The morale in the whole department is in the crapper," a veteran Bronx cop told the paper. "You can't be a police officer no more," he said. "You're a robot. You're under the microscope. You're under video surveillance. We feel like the perpetrators now, the way we're being displayed."[52]

According to a study by an Ottawa researcher, more than half of police say they've either reduced the frequency with which they use force on the job, or the amount of force they use when they do use it, as a result of the danger of being caught on camera.[53]

[51] Radley Balko, "Tech-Savvy Occupy Protestors Use Cellphone Video, Social Networking To Publicize Police Abuse," *Huffington Post*, October 29, 2011 <www.huffingtonpost.com>.

[52] Radley Balko, "How to Record the Cops," *Reason*, September 20, 2010 <reason.com>.

[53] <www.openwatch.net>

Police forces are finding themselves almost as vulnerable to internal leaks, in the age of Anonymous, Chelsea Manning and Wikileaks, as to cell phone cameras. NYPD whistle blower, Officer Pedro Serrano, secretly recorded a conversation with Deputy Inspector Christopher McCormach in which the latter could be heard telling him to stop-and-frisk "male blacks 14 to 21" to meet his monthly arrest quota.

> "So what am I supposed to do: Stop every black and Hispanic?" Serrano was heard saying on the tape, which was recorded last month at the 40th Precinct in the Bronx…
>
> "I have no problem telling you this," the inspector said on the tape. "Male blacks. And I told you at roll call, and I have no problem [to] tell you this, male blacks 14 to 21."[54]

For surveillance in the workplace and other institutions, there's the "Transparency Grenade," modelled on the Soviet F-1 hand grenade:

> Equipped with a tiny computer, microphone and powerful wireless antenna, the Transparency Grenade captures network traffic and audio at the site and securely and anonymously streams it to a dedicated server where it is mined for information. Email fragments, HTML pages, images and voice extracted from this data are then presented on an online, public map, shown at the location of the detonation.
>
> Whether trusted employee, civil servant or concerned citizen, greater openness was never so close at hand.[55]

Such public exposure puts authoritarian institutions of all kinds on the defensive, as they lose the war to control the public perception of events.

What Zeynep Tufekci calls the "networked public sphere" almost certainly played a large role in the release of Egyptian activist Mona Al Tahawy, after she disappeared into Egyptian military custody during a protest in November 2011. In the second wave of Egyptian protests against the new military regime, in Fall 2011, the military took a much more unambiguously hostile stance than they had during the uprising against Mubarak. In the second uprising, Egyptian military and police forces used sexual abuse and humiliation as a tool against demonstrators, both on the public streets and in police custody—much as Milosevic had used rape as a political weapon in the ethnic cleansing of Bosnia. Al Tahawy managed only a hasty tweet to her network that she was being arrested before she went incommunicado. As Tufekci wrote, "At worst, Mona's life was in danger. At best, she would likely be subject to beatings, sexual abuse."

Given the situation, Tufekci judged that the best course of action was to "kick up a big storm." "As a prominent dissident, she is in danger from those higher-ups who might want to make an example of her… Mona needed a huge campaign which made it costlier to keep her than to release her."

As Tufekci commented, such questions would have been meaningless in the pre-Internet days.

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[54] Cory Doctorow, "Police Tape: an ACLU mobile app to secretly record the police, *Boing Boing*, July 7, 2012 <boingboing.net>.

[55] Joshua Holland, "How Video of Police Behaving Badly Made Occupy Wall Street a Global Phenomenon," *Alternet*, October 24, 2011 <www.alternet.org>.

> A few decades ago, contemplating launching a global campaign like this would require that I own, say, a television station or two… But, "I" wasn't just an "I." Due to my academic and personal interests, I was connected to a global network of people ranging from grassroots activists in Egypt to journalists and politicians, from ordinary people around the world to programmers and techies in Silicon Valley and elsewhere. My options weren't just cursing at a television set –if her arrest had even made the news in the next few days. I could at least try to see what *we* could do, and do quickly.
>
> Concise, fast, global, public and connected was what we needed, and, for that, there is nothing better than Twitter…
>
> One challenge of new media environments is that they scatter attention and consequently tools and channels which can unite and focus attention are key to harnessing their power. Hashtags and trending topics are one way in which people can focus among the billions of tweets floating in cyberspace…
>
> So, first, I knew we needed a hasthag. A focuser.
>
> … In about a minute [after I adopted the hashtag #freemona], the column started flowing too quickly for me to read everything.
>
> Ok, that's the global campaign, I thought as I marveled at how quickly it had taked off with barely a nudge. In the pre-social media world, it might have taken weeks and a lot of luck to achieve even a sliver of such awareness globally.

The Twitter campaign soon brought together a huge ad hoc network including prominent international journalists, civil liberties and activist groups, and Anne-Marie Slaughter and her personal network of State Department insiders. In less than a day, Al Tahawy was released.[56]

By challenging the state's control of public perception, networked resistance undermines the narrative on which the state's legitimacy is constructed. When the legitimacy of the state and its authority claims declines in the mind of the average citizen, the transaction costs entailed in enforcing authority creep steadily upward.

But the strategy isn't merely to expose the state's abuses to public scrutiny, although that's a big part of it. It's not even just to undermine the legitimacy of its claims to obedience. It's to create a demonstration effect, to show that evasion of the state's enforcement capabilities is possible, that it's feasible to live the way you want, and that people are doing it right now. It's to create the impression that doing things in ways disapproved by the state is right and normal, and that the state is laughable and ineffectual in its attempts to prevent it.

Or as John Robb puts it, open-source insurgencies are built around a "plausible promise": an enemy, a goal, and most importantly: "A demonstration.. An attack that demonstrates that its possible to win against the enemy. It deflates any aura of invincibility that the enemy may currently enjoy. The demonstration serves as a rallying cry for the insurgency. "[57]

Consider the increasing unwillingness of courts to enforce laws against personal possession of marijuana, thanks to jury nullification.

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[56] "Police worry about being caught on video, researcher says," *CBC News*, November 6, 2014 <www.cbc.ca>.

[57] Rania Khalek, "Secret Recording Reveals NYPD Ordered Officer to Target Young Black Males for Stop and Frisk," *RaniaKhalek.com*, March 22, 2013 <raniakhalek.com>.

> "Public opinion, as revealed by the reaction of a substantial portion of the members of the jury called to try the charges on Dec. 16, 2010, is not supportive of the state's marijuana law and appeared to prevent any conviction from being obtained simply because an unbiased jury did not appear available under any circumstances," according to the plea memorandum filed by his attorney…
>
> "I think it's going to become increasingly difficult to seat a jury in marijuana cases, at least the ones involving a small amount," Deschamps said…
>
> "It's kind of a reflection of society as a whole on the issue," said Deschamps.[58]

According to David de Ugarte, network culture makes it feasible to systematically shine a spotlight on the state's malfeasance and undermine its legitimacy. He gives the example of the "cyberthrongs" (citizen uprisings coordinated via social media), which first emerged with the opposition to Estrada in the Philippines:

> We are living in a veritable Spring of the Web, from Serbia to the Ukraine, from Kyrgyzstan to Byelorussia and even Kuwait.
>
> This is a global movement in which countries with very different cultural and religious backgrounds are developing citizens' movements in network form. These movements allow citizens to oversee democratic processes, denouncing election fraud, corruption, and government abuse. The Spring of the Web is the concrete historical embodiment of the globalisation of democratic freedoms…
>
> This new form of organisation, based on contemporary models of nonviolent civil resistance, owes its success to the diffusion and display of a lifestyle based on the collective and individual strengthening of people as opposed to power. This strengthening takes place through small gestures, jokes, signboards, which in themselves are insignificant, but which taken as a whole undermine the implicit consensus that power relies on.[59]

Cyberthrongs are only one form of a more general phenomenon. Such spontaneous or near-spontaneous "swarming" is usually reactive, in response to nearuniversal outrage over some event, like a perceived government malfeasance or misfeasance that goes far beyond the ordinary. In most cases, individual nodes (individuals or small affinity groups) take the initiative in developing plans of action that are picked up and reinforced by other nodes.[60]

In some cases the aim of the campaign initiated by some particular node is not to take any particular action against an antagonist, but simply a viral marketing campaign to spread some meme.[61] But in the long run, this challenge to official consensus reality is perhaps the most fundamental ground on which to attack the present system of power.

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[58] <www.transparencygrenade.com>.

[59] Zeynep Tufekci, "The #freemona Perfect Storm: Dissent and the Networked Public Sphere," *technosociology*, November 25, 2011 <technosociology.org>.

[60] John Robb, "Open-Source Insurgency: How to Start," *Global Guerrillas*, March 21, 2008 <globalguerrillas.typepad.com>.

[61] Gwen Florio, "Missoula District Court: Jury pool in marijuana case stages 'mutiny,'" *The Missoulian*, December 19, 2010 <missoulian.com>.

Horizontal communications have always been a threat to power. As James Scott argues, oppositional ideologies are most visible in areas that are opaque to the state, even within the state's area of governance: "unauthorized and unmentioned secret assemblies of subordinates," like Lollardry in "the pastoral, forest, moorland, and fen areas, where the social control of the church and the squirearchy did not effectively penetrate."[62] E.P. Thompson, writing of England three centuries later, said that "free intellectual life and democratic experiments" tended to proliferate in "the chapel, the tavern, and the home… "[63] And these places "were seen by secular authorities and by the church as places of subversion."[64]

> The importance of the tavern or its equivalent as a site of antihegemonic discourse lay less in the drinking it fostered or in its relative insulation from surveillance than in the fact that it was the main point of unauthorized assembly for lower-class neighbors and workers. Along with the market, which was larger and more anonymous, the tavern was the closest thign to a neighborhood meeting of subordinates…
>
> The reasons the more unmediated versions of the hidden transcripts should be encountered in taverns, alehouses, at the marketplace, during carnival, and at night in secluded spots are instructive. A dissident subculture "invests the weak points in a chain of socialization."[65]

In other words, horizontality is key to challenging the official narrative.

We've already seen what *The Cluetrain Manifesto* had to say about the ability of people to talk to each other, as undermining the ability of marketing departments to control a message unilaterally through one-directional broadcast culture. When the audience viewing the official message are free to talk to one another, it ceases to be a one-way communication to the audience members and instead becomes the subject matter of their communications with one another—like the crappy movies mocked by Joel and the bots on MST3K. It's probably no coincidence that the lowest levels of compliance in the Stanford Prison Experiment occurred when subjects were allowed to talk to one another.

Of course people have always been able to mock politicians' speeches and network news talking heads in bars and in their living rooms, making snide remarks to one another as they watch the show. But with the emergence of a manyto-many medium, the comparative ubiquity of the official version of reality versus the self-organized version has suffered a serious decline. In the old days of broadcast culture, the mockery was marginalized by the very fact of being something that was heard only in tiny islands of physical space occupied by a few other physically present listeners. The private reality of mockery was an isolated phenomenon in a larger "public" reality defined by official hierarchies. Official reality, as defined by the President's press conferences and Walter Cronkite, was a pervasive normative ground, a background against which dissenting opinion stood out as a heretical exception. Mockery and criticism were relegated to the "private" realm.

But as the counter-reality becomes more ubiquitous, as it challenges official statements wherever they appear, as it becomes universally accessible to enormous audiences communicating

[62] David de Ugarte, *The Power of Networks*, pp. 57–58.
[63] De Ugarte, *The Power of Networks*, pp. 88–89.
[64] De Ugarte, *The Power of Networks*, pp. 90–91.
[65] Scott, *Domination and the Arts of Resistance*, p. 121.

with each other and hyperlinking the official statement for relentless mockery, the old official reality loses its perceived privileged status as consensus reality. The counter-reality becomes as pervasive as official reality in the public space, and contests it for perceived legitimacy.

> The Facebook groups, the Wikileaks cables, the blogs all show that any one person is not alone in a particular set of beliefs about the regime. Another form of common knowledge is allowed to take hold.[66]

Tufekci, in similar vein, points to the significance of social media in challenging consensus reality:

1. The capacities of the Internet that are most threatening to authoritarian regimes are not necessarily those pertaining to spreading of censored information but rather its ability to support the formation of a counter-public that is outside the control of the state. In other words, it is not that people are waiting for that key piece of information to start their revolt—and that. information just happens to be behind the wall of censorship—but that they are isolated, unsure of the power of the regime, unsure of their position and potential.
2. Dissent is not just about knowing what you think but about the formation of a public. A public is not just about what you know. Publics form through knowing that other people know what you know—and also knowing that you know what they know…
3. Thus, social media can be the most threatening part of the Internet to an authoritarian regime through its capacity to create a public(ish) sphere that is integrated into everyday life of millions of people and is outside the direct control of the state partly because it is so widespread and partly because it is not solely focused on politics. How do you censor five million Facebook accounts in real time except to shut them all down?
4. The capacity to selectively filter the Internet is inversely proportional to the scale and strength of the dissent. In other words, regimes which employ widespread legitimacy may be able to continue to selectively filter the Internet. However, this is going to break down as dissent and unhappiness spreads. As anyone who has been to a country with selective filtering knows, most everyone (who is motivated enough) knows how to get around the censors. For example, in Turkey, YouTube occasionally gets blocked because of material that some courts have deemed as offensive to Mustafa Kemal Ataturk, the founding father of Turkey. I have yet to meet anyone in Turkey who did not know how to get to YouTube through proxies.
5. Thus, the effect of selective filtering is not to keep out information out of the hands of a determined public, but to allow the majority of ordinary people to continue to be able to operate without confronting information that might create cognitive dissonance between their existing support for the regime and

[66] E.P. Thompson, *The Making of the English Working Class*, pp. 51–52, quoted in *ibid.* p. 121.

the fact that they, along with many others, also have issues. Meanwhile, the elites go about business as if there was no censorship as they all know how to use work-arounds. This creates a safety-valve as it is quite likely that it is portions of the elite groups that would be most hindered by the censorship and most unhappy with it. (In fact, I have not seen any evidence that China is trying to actively and strongly shut down the work-arounds.)

6. Social media is not going to create dissent where there is none…
7. Finally, during times of strong upheaval, as in Egypt, dictator's dilemma roars. The ability to ensure that their struggle and their efforts are not buried in a deep pit of censorship, the ability to continue to have an honest conversation, the ability to know that others know what one knows all combine to create a cycle furthering dissent and upheaval. Citizen-journalism matters most in these scenarios as there cannot be reporters everywhere something is happening; however, wherever something is happening there are people with cell phone cameras. Combined with Al-Jazeera re-broadcasting the fruits of people-powered journalism, it all comes down to how much force the authoritarian state is willing and able to deploy—which in turn, depends on the willingness of the security apparatus. Here, too, social media matters because, like everyone else, they too are watching the footage on Al-Jazeera. Their choice is made more stark by the fact that they know that history will judge them by their actions—actions which will likely be recorded, broadcast and be viewed by their citizens, their neighbors and their children and grandchildren.[67]

VI. Networked Activism and the Growth of Civil Society

In some cases public protest or resistance may be a way of exposing the state to public censure. When the people who are engaged in building counterinstitutions do decide to publicly challenge the state and demand a change in its policies, it's best to do it in concert with as many other allied movements as possible and to subject the state to a "swarming attack" of negative publicity.

Fortunately the Internet makes networking between movements for liberty around the world more feasible than ever before.

> First, the last decade has witnessed the biggest global cooperation between human liberation movements in world history. In this "movement of movements" all over the world, various kinds of struggles with different issues and themes have worked together to form global networks and act together. Second, these movements rely on strategies featuring civil resistance. Third, these movements' civil resistance has had an impact on the real world—even though our understanding of how that has become possible is still limited.
>
> What we do know is that mass action of ordinary citizens can produce change, that it can force regimes to negotiate and compromise, and even topple authoritarian rulers, e.g. Serbia, South Africa, Nepal or Bolivia. People have seen that the mobilization

[67] Scott, *Domination and the Arts of Resistance*, p. 121.

> of ordinary citizens is what state actors are most afraid of, whether they preside in Iran, Venezuela, France, Iceland, Burma, Egypt or Israel/Palestine. Here is something that seems more powerful than the force that grows out of the barrel of a gun. The "revolution is not a dinner party", as Mao said, but neither is it a civil war, as he and his followers mistakenly believed. It is the prime fear of all authoritarian leaders: a united people that disobey and practice freedom without fear.[68]

A wide range of movements, including the so-called "color revolutions" that have toppled so many authoritarian states, the Zapatistas in Chiapas, the landless workers movement in Brazil, assorted movements like the resistance to Shell in Nigeria and various anti-sweatshop campaigns, local rebellions against structural adjustment programs, etc., are coordinated in global civil society networks like the World Social Forum. Cross-national alliances between such local movements subject local repression to levels of scrutiny that would have been unthinkable a generation ago. That means that local repression of such movements, even when they seem to be successful for at least the short term, must operate in a hostile environment of world opinion that saps the morale of the leadership and undermines their legitimacy in the long term.

Writing against the backdrop of the UK's late 2010 networked student uprising against tuition increases, Aaron Peters anticipated 2011 as "the year political activism and progressive politics goes open source."

> Along with Wikileaks and Anonymous it is these [networked protests] that give credibility to the argument that in 2010 we finally saw the internet and the immense possibilities it brings in terms of undermining all the certainties of the 'Old Politics'.
>
> The vast tranche of Wikileaks documents gives credence to the belief of many cyber-activists since Richard Stallman that with these tools and systems, 'information wants to be free', and that in the words of John Gilmore, 'the net interprets censorship as damage and routes around it'. Just as state censorship in the age of the internet is massively undermined so to the possibilities for social movements engaging in contention at the grassroots level are exponentially increased.
>
> One important aspect of this new politics is what one might refer to as its 'open source' nature, just as the Linux operating system and Wikipedia can be built upon by anyone with the capabilities, skills and requisite passion to do so, these movements are constituted in a similar fashion crowdsourcing the skillsets and social networks of anybody who wishes to participate.
>
> Hitherto NGOs and social movement 'organisations' have been exactly that, organisations, with centralised bureaucracies and internal hierarchies—a coterie of activists who 'produce' activism and a mass membership who consume it…
>
> In the new 'crowdsourced' paradigm the distinction between producers and consumers of dissent is dissolved—there is no organising or membership structure in place, with instead all individuals being potential 'participants' within a movement.
>
> Anyone can contribute, hence we have the rise of what has been termed dissent entrepreneurs with such individuals similtaneously performing the old roles of both

[68] *Ibid*., pp. 122–123; material in quotes is from Stuart Hall and Tony Jefferson, *Resistance Through Rituals: Youth Subcultures in Post-war Britain* (Hutchinson, 1976).

> producers and consumers of dissent… at once producing dissent, mobilising and facilitating [sic] it—while also participating in actions facilitated by others…
>
> This new model that is de-centered and networked and possesses the ability to spread virally may well be the big story of 2011—a year of immense excitement for grassroots politics in our country…
>
> A year where the production of this dissent goes truly open source.[69]

The Wikileaks document dump provided fuel for the Arab Spring uprising which kicked off in Tunisia in 2011, and in turn sparked M15 in Spain, Syntagma in Greece, Occupy Wall Street in the U.S., and an ongoing series of networked resistance movements around the world since then (the subject of our Appendix).

[69] Tony Curzon Price, "Cupid's freedom: how the web sharpens the democratic revolution," *openDemocracy*, January 31, 2011 <www.opendemocracy.net>.

11. Open Source Fourth Estate

I. The Industrial Model

Yochai Benkler described the old broadcast media as a "hub-and-spoke architecture with unidirectional links to the end points… typified by high-cost hubs and cheap, ubiquitous, reception-only systems at the end. This led to a limited range of organizational models for production: those that could collect sufficient funds to set up a hub."[1] The broadcast hub-and-spoke architecture, with expensive printing presses and expensive wire service infrastructures as the chokepoints for information and a class of "professionals" controlling those chokepoints, was a reflection of the Industrial Age model of organization: "in order to be able to publish one's opinions or views of reality one must have a capital equivalent to that required to set up a factory… "[2]

The result was the pattern of concentrated corporate media ownership described by such writers as Ben Bagdikian and Edward Herman. In cultural terms, it meant a journalistic ethos of "professional objectivity," which meant in functional terms the "propaganda model" of Herman and Noam Chomsky.

> The idea of journalism as an activity, as a specific ability requiring specific knowledge, was born with the information industry and is really nothing new. In 1904 Joseph Pulitzer predicted that before the 20th century was over journalism schools would be granted the status of higher education institutions, like law or medical schools…
>
> Pulitzer was thinking within the framework of an industrial business model which required workers specialised in writing copy in the same way as engineers were needed to design stabilising systems. That's why he asked the education system to train them. The time for… journalists cum activists, like the unforgettable editor of the local paper in *The Man Who Killed Liberty Valance*—was over…
>
> … Information was a product, exclusively traded by states and by Citizen Kanes…
>
> This is the logic of journalism as a news factory, an irreplaceable and necessary informational mediation. This view generates its own myths: the journalist is no longer an activist but a technician, a necessary mediator upholding the freedom of expression and guaranteeing the collective right to information ("the public's right to know").[3]

[1] Zeynep Tufekci, "As Egypt Shuts off the Net: Seven Theses on Dictator's Dilemma," *technosociology*, January 28, 2011 <technosociology.org>.

[2] Stellan Vinthagen, "People power and the new global ferment," *openDemocracy*, November 15, 2010 <www.opendemocracy.net>.

[3] Aaron Peters, "2011: The year political activism and progressive politics goes open source," *Left Foot Forward*, December 20, 2010 <www.leftfootforward.org>.

In reality, the "public's right to know" was qualified by the very serious constraints presented by the ideological filters of those who controlled the information checkpoints. These included not only the filter of the individual correspondent who actually reported on events to the wire service or the wire service itself, but the filters of those who owned the broadcast and print outlets. This is the model of corporate media control described by radical critics like Bagdikian, Herman and Chomsky.

The "professional" ethos of the traditional press was skewed toward the perspectives of those in power. In practice, the "countervailing power" of the press operated very much like that of government regulatory agencies. Just as government regulatory agencies formed constellations of mutually supporting institutions with the corporations they were supposedly charged with regulating, the Fourth Estate usually functioned as part of a complex of related institutions with those over which they were supposed to be exercising a "watchdog" function.

First, the mainstream press relies overwhelmingly on information "provided by government, business, and 'experts' funded and approved by these primary sources and agents of power."[4] Most stories rely on official sources and content generated by press secretaries or PR departments.

This has resulted to a large extent from institutional imperatives, in the days when the press was a capital-intensive industry mediated by a few large bureaucracies.

> The mass media are drawn into a symbiotic relationship with powerful sources of information by economic necessity and reciprocity of interest. The media need a steady, reliable flow of the raw material of news. They have daily news demands and imperative news schedules that they must meet. They cannot afford to have reporters and cameras at all places where important stories may break. Economics dictates that they concentrate their resources where significant news often occurs, where important rumors and leaks abound, and where regular press conferences are held. The White House, the Pentagon, and the State Department, in Washington, D.C., are central nodes of such news activity. On a local basis, city hall and the police department are the subject of regular news "beats" for reporters. Business corporations and trade groups are also regular and credible purveyors of stories deemed newsworthy. These bureaucracies turn out a large volume of material that meets the demands of news organizations for reliable, scheduled flows. Mark Fishman calls this "the principle of bureaucratic affinity: only other bureaucracies can satisfy the input needs of a news bureaucracy."
>
> Government and corporate sources also have the great merit of being recognizable and credible by their status and prestige… Partly to maintain the image of objectivity, but also to protect themselves from criticisms of bias and the threat of libel suits, they need material that can be portrayed as presumptively accurate. This is also a matter of cost: taking information from sources that may be presumed credible reduces investigative expense, whereas material from sources that are not prima facie credible, or that will elicit criticism and threats, requires careful checking and costly research.

[4] Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven and London: Yale University Press, 2006), pp. 179, 188.

The Pentagon and other government agencies, large corporations, etc., have public information or media relations offices whose primary function is to supply news organizations' needs for large quantities of pre-digested "information."[5] "In effect, the large bureaucracies of the powerful *subsidize* the mass media, and gain special access by their contribution to reducing the media's cost of acquiring the raw materials of, and producing, news.[6]

According to Scott Cutlip of the University of Georgia, some 40% of the "news" in newspapers consists of material generated by press agencies and PR departments, copied almost word for word by "objective" professional journalists.[7] A classic example of this phenomenon is wire service reporters writing stories on foreign events from their hotel rooms, using handouts from the U.S. Embassy. Consider AP coverage of the anti-Chavez coup in Venezuela in the spring of 2002. After the removal of Chavez, the White House stuck to the talking point that he "resigned," and their doggies at the Associated Press stuck to it faithfully. Indymedia and Narco News Bulletin, meanwhile, reported that Chavez had not resigned, and was being held incommunicado.

Second, the conventional model of "professional objectivity" discourages independent recourse to the factual realm by the journalist if the material presented by an official source isn't challenged by "the other side." In practice that means the journalist pretends to be stupider than she really is. In order to project an air of "neutrality," she deliberately refrains both from drawing obvious conclusions from factual evidence, and from going beyond quotes from representatives of "both sides" to report factual evidence as to who's telling the truth. Fake "objectivity" means not drawing obvious conclusions from the facts, and pretending not to notice facts that reflect on the truth what one side or the other claims. Appealing independently to an objective factual realm, to present information that doesn't come from "either side," would itself amount to "taking sides." But insofar as the "two sides" can't both be right at the same time, truth itself is "biased." There's no way to maintain a pose of neutrality except through willful obtuseness. As Justin Lewis describes it:

> The norms of "objective reporting" thus involve presenting "both sides" of an issue with very little in the way of independent forms of verification… [A] journalist who systematically attempts to verify facts—to say which set of facts is more accurate—runs the risk of being accused of abandoning their objectivity by favoring one side over another…
>
> … [J]ournalists who try to be faithful to an objective model of reporting are simultaneously distancing themselves from the notion of independently verifiable truth…
>
> The "two sides" model of journalistic objectivity makes news reporting a great deal easier since it requires no recourse to a factual realm. There are no facts to check, no archives of unspoken information to sort through… If Tweedledum fails to challenge a point made by Tweedledee, the point remains unchallenged.[8]

That approach was effectively parodied by this exchange on *The Daily Show* during the 2004 election campaign:

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[5] David de Ugarte, *The Power of Networks: An Illustrated Manual for People, Collectives, and Companies Driven to Cyberactivism*. Translated by Asunción Álvarez (n.d.) <deugarte.com>, p. 45.

[6] *Ibid*., pp. 44–45.

[7] Edward S. Herman and Noam Chomsky, *Manufacturing Consent: The Political Economy of the Mass Media* (New York: Pantheon Books, 1988), p. 2.

[8] Herman and Chomsky, *Manufacturing Consent*, pp. 18–20.

> STEWART: Here's what puzzles me most, Rob. John Kerry's record in Vietnam is pretty much right there in the official records of the US military, and haven't been disputed for 35 years?
>
> CORDDRY: That's right, Jon, and that's certainly the spin you'll be hearing coming from the Kerry campaign over the next few days.
>
> STEWART: Th-that's not a spin thing, that's a fact. That's established.
>
> CORDDRY: Exactly, Jon, and that established, incontrovertible fact is one side of the story.
>
> STEWART: But that should be—isn't that the end of the story? I mean, you've seen the records, haven't you? What's your opinion?
>
> CORDDRY: I'm sorry, my *opinion*? No, I don't have 'o-pin-i-ons'. I'm a reporter, Jon, and my job is to spend half the time repeating what one side says, and half the time repeating the other. Little thing called 'objectivity'—might wanna look it up some day.
>
> STEWART: Doesn't objectivity mean objectively weighing the evidence, and calling out what's credible and what isn't?
>
> CORDDRY: Whoa-ho! Well, well, well—sounds like someone wants the media to act as a filter! [high-pitched, effeminate] 'Ooh, this allegation is spurious! Upon investigation this claim lacks any basis in reality! Mmm, mmm, mmm.' Listen buddy: not my job to stand between the people talking to me and the people listening to me.[9]

But parody has a hard time keeping up with the truth, as indicated by this real-world official criticism of a reporter on the Pentagon beat for his inadequate credulity:

> The Pentagon's letter of complaint to Post executive editor Leonard Downie had language charging that Ricks casts his net as widely as possible and e-mails many people. Details of the complaints were hard to come by. One Pentagon official said in private that Ricks did not give enough credence to official, on-the-record comments that ran counter to the angle of his stories.[10]

Early in Reagan's first administration, according to Walter Pincus, reporters investigating the accuracy of his factual claims ran up against this standard of "objectivity":

> WALTER PINCUS: … [I]t's up to the Democrats to catch people, not us.
>
> BILL MOYERS: So if the democrats challenged a statement from the President, you could quote both sides.
>
> WALTER PINCUS: We then quote both sides. Yeah.
>
> BILL MOYERS: Now, that's called objectivity by many standards isn't it?

[9] *Ibid*., p. 22.

[10] Cited by Christopher Lasch in *The Revolt of the Elites and the Betrayal of Democracy* (New York and London: W.W. Norton & Co., 1995), p. 174.

> WALTER PINCUS: Well, that's objectivity if you think there are only two sides. And if you're not interested in the facts. And the facts are separate from, you know, what one side says about the other.[11]

The journalistic establishment defended its collusion with the Bush regime's drive for war in 2003 in terms of the same ethos of "professional objectivity." According to David Ignatius,

> the media were victims of their own professionalism. Because there was little criticism of the war from prominent Democrats and foreign policy analysts, journalistic rules meant we shouldn't create a debate on our own.[12]

Of course it's nonsense from even a purely factual standpoint that the media would have had to create a debate where there wasn't one. As Glenn Greenwald pointed out, there was no shortage of skeptical voices from the Left and Right in the period leading up to the war, challenging the Administration's version of reality—including a speech from the Senate floor by Ted Kennedy.[13]

Perhaps the most amusing scene in the whole farce was Judith Miller's straight-faced condemnation of Assange as a "bad journalist," because "he didn't care at all about attempting to verify the information that he was putting out, or determine whether or not it hurt anyone." This is the same "journalist" who said: "[M]y job isn't to assess the government's information and be an independent intelligence analyst myself. My job is to tell readers of *The New York Times* what the government thought about Iraq's arsenal."[14]

This "both sides" standard of objectivity, as Brent Cunningham said,

> exacerbates our tendency to rely on official sources, which is the easiest, quickest way to get both the "he said" and the "she said," and, thus, "balance." According to numbers from the media analyst Andrew Tyndall, of the 414 stories on Iraq broadcast on NBC, ABC, and CBS from last September to February, all but thirty-four originated at the White House, Pentagon, and State Department. So we end up with too much of the "official" truth.
>
> More important, objectivity makes us wary of seeming to argue with the president—or the governor, or the CEO—and risk losing our access…
>
> … The Democratic leadership was saying little, so there was no "she said." "Journalists are never going to fill the vacuum left by a weak political opposition," says *The New York Times*'s Steven R. Weisman.[15]

In contrast, actual independent digging into the facts costs time and money. This is reflected in the reluctance of most establishment reporters, for example, to examine the written documents (like bills and government reports) which are at the focus of political debate. How many op-ed

[11] Justin Lewis, "Objectivity and the Limits of Press Freedom," in Peter Phillips & Project Censored, *Censored 2000: The Year's Top 25 Censored Stories* (New York, London, Sydney, and Toronto: Seven Stories Press, 2000), pp. 173–74.

[12] *Eschaton* blog, August 22, 2004 <atrios.blogspot.com>.

[13] Harry Jaffe, "Pentagon to *Washington Post* Reporter Ricks: Get Lost," *The Washingtonian*, December 29, 2003 <washingtonian.com>.

[14] April 25, 2007: "Buying the War," *Bill Moyers Journal: Transcripts* <www.pbs.org>.

[15] David Ignatius, "Red Flags and Regrets," *Washington Post*, April 27, 2004 <www.washingtonpost.com>.

pieces have you read in which a writer quotes extensively from "both sides'" characterization of the import of some piece of legislation, but quotes no actual provisions of the bill or otherwise indicates she's read it herself? As Sam Smith writes:

> … I find myself increasingly covering Washington's most ignored beat: the written word. The culture of deceit is primarily an oral one. The soundbite, the spin, and the political product placement depend on no one spending too much time on the matter under consideration.
>
> Over and over again, however, I find that the real story still lies barely hidden and may be reached by nothing more complicated than turning the page, checking the small type in the appendix, charging into the typographical jungle beyond the executive summary, doing a Web search, and, for the bravest, actually looking at the figures on the charts.[16]

So if the mainstream press just regurgitates official statements, Avedon Carol wonders, why not just read the official statements at the source?

> Hm, let's see… I can go to whitehouse.gov and read everything administration officials have to say on the record, or I can spend money to buy a newspaper and read a repetition of selected quotes from that said material. What should I do?
>
> If that's all newspapers are good for, what are newspapers good for?[17]

Glenn Greenwald raises the question of how the state-run media in a dictatorship would do anything any different from what the folks at CNN typically do on "national security" stories. In the case of Wikileaks, for example:

> That's CNN's journalism: uncritically passing on one government claim after the next—without any contradiction, challenge, or scrutiny. Other than Blitzer's anger over the Government's failure to more effectively keep secrets from everyone, what would an overtly state-run media do differently? Absolutely nothing. It's just so revealing that the sole criticism of the Government allowed to be heard is that they haven't done enough to keep us all in the dark.[18]

The reason is that "establishment journalists identify with, are merged into, … the political class…[19] To repeat, establishment journalism is just another illustration of the tendency of theoretically "countervailing" institutions to become in fact parts of the same complexes of clustered institutions as the institutions they supposedly check.

The same sort of collusion between the political and journalistic establishments prevails at the local level, where the newspaper in most communities tends to be a part of the very power structure over which it is expected to exercise its watchdog functions. In the colorful language of Michael Bates, of *Batesline Blog*, the *Tulsa World* is part of Tulsa's Cockroach Caucus:

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[16] Greenwald, "CNN/MSNBC reporter."

[17] Eric Lach, "Judith Miller Criticizes Assange… For Not Verifying His Sources (VIDEO)," *TPMMuckraker*, January 3, 2010 <tpmmuckraker.talkingpointsmemo.com>.

[18] Brent Cunningham, "Rethinking Objective Journalism *Columbia Journalism Review*." *Alternet*, July 9, 2003 <www.alternet.org>.

[19] Sam Smith, in *Censored 2000*, p. 60.

> The World is more than just an observer of the local scene. It is an integral part of the tight social network that has run local politics for as long as anyone can remember. This network… has pursued its own selfish interests under the name of civic progress, with disastrous results for the ordinary citizens of Tulsa and its metropolitan area…
>
> The same small number of connected insiders circulates from one city authority, board, or commission to another, controlling city policy, but beyond the reach of the democratic process.[20]

Bloggers and online journalists also differ from the old establishment in taking advantage of the new journalistic potential of network technology, where conventional journalists have largely failed to do so. Online journalists, bloggers and independent scholars use search engines to examine public figures' past behavior, and to aggregate each other's findings—something seemingly beyond the capacity of traditional reporters.[21]

Now bear in mind that, under the ethos of "professional journalistic objectivity," independently searching for information that bears on the truthfulness of an individual's statement—as opposed to reporting that some prominent figure on "the other side" referred to such information—is a big no-no. If there's not a "he said" money quote from a spokesman for "the other side," examining the record for yourself and reporting on what you find is "taking sides." That's only for the op-ed page, you know.

One criticism of blogging and online journalism is the lack of a gatekeeping function, like that in the editorial offices of the major newspapers of record, to vet stories for accuracy before they appear in print. "As they surveyed the growing amount of self-published content on the internet, many media companies correctly understood that the trustworthiness of each outlet was lower than that of established outlets like *The New York Times*." But they failed to grasp the significance of the lowered capital outlay costs and other entry barriers for Web publishing: the proliferation of many more outlets. In a networked blogosphere, in which any blogger can link to the material she criticizes and provide hyperlinks to corrective information, the corrective function is performed by the networked environment itself.[22] (Not to mention that this "vetting function" didn't do jack shit to stop Judy Miller.)

The parallel to the battle between Wikipedia and the old-line dead tree encyclopedias, in which the gatekeepers at *Britannica* were dumbfounded by the comparable number of errors in the two venues—and Wikipedia's record of correcting errors in minutes rather than months—is obvious.

Arguably the gatekeeping function in "professional journalism," as it existed in the 20th century, was itself a side-effect of the increased capital outlays required for publishing and the concentration of the corporate media. Just as the FCC Fairness Doctrine was the product of a time when TV news was controlled by the Big Three, professional gatekeepers were associated with a time when there were two wire services, half a dozen major newspapers of record, and one big newspaper in most towns.

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[20] Avedon Carol, "Pilloried Post," August 12, 2004 <slacktivist.typepad.com>.

[21] Greenwald, "WikiLeaks reveals more than just government secrets," *Salon*, November 30, 2010 <www.salon.com>.

[22] Greenwald, "The merger of journalists and government officials," *Salon*, December 28, 2010 <www.salon.com>.

With the collapse of entry barriers for Web publishing, the proliferation of sites engaged in the corrective function is an example of individual superempowerment replacing the corrective function of institutional gatekeepers.

In any case, it's often an exercise in inadvertent humor when the establishment press chides online journalists and bloggers for a lack of "fact-checking." If anything, bloggers and other online journalists fact-check the establishment press.

> Over the weekend, on "The Chris Matthews Show," the host and his panel pondered the importance of journalistic fact-checking. It led to this exchange between Matthews, Gloria Borger, and Joe Klein.
>
> Matthews: Who's going to fact check for you?
>
> Borger: We fact check, our editors…
>
> Matthews: Online who's going to fact check?
>
> Borger: There are still, it depends.
>
> Matthews: The bloggers don't fact check.
>
> Klein: Nobody fact checks. We still do, the print magazine and Time Magazine still has elaborate fact checkers…
>
> Borger: We fact check.
>
> Klein: … but Time.com, no.
>
> Jamison Foser noted that Chris Matthews "is the poster child for the punditocracy's habit of endlessly repeating falsehoods that happen to mesh with their worldview… Is a television reporter who is wrong so often he has to admit 'I keep saying it, and I keep being wrong on this' really in any position to complain about anyone else's fact-checking?"
>
> It is an odd complaint for Matthews to raise. How often do either of Matthews' shows—"Hardball" or "The Chris Matthews Show"—run corrections? Or even clarifications? Is there anyone—outside the blogs, that is—who checks the accuracy of Matthews' work?
>
> Indeed, as Matt Corley explained, "It's ironic that a cable news host such as Chris Matthews would attack bloggers for supposedly not checking their facts, considering the amount of falsehoods and factually inaccurate statements he regularly utters on the air—which have all been fact-checked by bloggers."[23]

(By the way, in the original online version of the quote above, the bolded clause contained nine hyperlinked words, each going to a different example of Matthews' factual inaccuracies he never corrected.)

[23] Michael Bates, "Whirled Threatens Batesline," *Batesline*, February 15, 2005 <www.batesline.com>.

II. Open Source Journalism

But this increasingly concentrated corporate control of the information chokepoints is being completely cirvumvented by the Web.

The problem is not so much the percentage of the old broadcast-model media that's controlled by corporate gatekeepers, but that consensus reality is still so closely tied to the corporate legacy media:

> The problem here is that we still wait for our cable shows and our newspapers to break stories. During that waiting period, we lose valuable time. (In reality, cable shows mostly run with whatever happens to be the most popular online.)
>
> The solution? STOP WAITING for it to appear in *The New York Times*. The NDAA was as real as cancer weeks before they reported on it.
>
> I first learned about it through my social media accounts, as did many others. We need to elevate people with a good track record of reporting news via social media…. We're the canary in the coal mine, and the last line of defense when our mainstream media is asleep at the helm…[24]

According to David de Ugarte, the blogger is doing to professional journalism what the free and open-source software movement did to Microsoft and IBM.

> As for bloggers, old fashioned media see them as "intruders" or dilettantes lacking in credibility, in the same way as the great proprietary software companies used to say that free software developers were mere amateurs (that was before most of them, led by old IBM, Sun and Novell, adapted their business models to the new copyleft property systems). For the blogger is nothing but an incarnation, in the domain of information, of the hacker, the bricoleur. He's the antiprofessional…[25]

In constrast to traditional journalism, the strong suit of online journalism is

> the selection of sources which are… immediately and directly available to the reader. This is what most blogs do, as do, by definition, pressclipping services. Their contribution consists in selecting sources from a certain point of view. In the same way as it makes no longer sense to understand newspapers as "newsmakers", so opinion is no longer based on the best information attributed to an individual, as the network makes sources available to everyone. What is important now is interpretation and analysis— that is, the deliberative component which signals the appearance of a truly public, nonindustrially mediated, citizens' sphere.[26]

In other words, networked journalism makes better use of information, in digesting it and putting it together, than industrial journalism.

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[24] Clay Shirky, *Here Comes Everybody: The Power of Organizing Without Organizations* (Penguin Books, 2008), p. 63.

[25] Shirky, *Here Comes Everybody*, p. 65.

[26] Steve Benen, "Chris Matthews Ponders Fact-Checking," *Political Animal*, August 24, 2009 <www.washingtonmonthly.com>.

Everything written above about the ability of networked organizations to exercise "countervailing power" functions over powerful institutions is also true of news, with ever-expanding networks of amateurs in venues like Indymedia, with alternative new operations like those of Robert Parry, Bob Giordano and Greg Palast, and with natives and American troops blogging news firsthand from Iraq— all at the very same time the traditional broadcasting networks are relegating themselves to the stenographic regurgitation of press releases and press conference statements by corporate and government spokespersons.

> Six days before protesters shut down Seattle, Matthew Arnison, an activist and programmer from the Catalyst Collective in Sydney, posted the inaugural message on a website he had helped build. Displaying the utopianism that would become characteristic of a generation of digital activists, he declared, "The web dramatically alters the balance between multinational and activist media. With just a bit of coding and some cheap equipment, we can set up a live automated website that rivals the corporates. Prepare to be swamped by the tide of activist media … " With this digital call to arms, Indymedia was born.
>
> Within days, Indymedia's on-the-ground reports of the lockdown of Seattle had been accessed over a million times. Even mainstream, corporate media were relying on Indymedia for accurate accounts of the protests. Indymedia's open-publishing model empowered citizen journalism with an ethos of antiauthoritarianism. For the first time, anyone could write the news, anyone could be an investigative journalist, anyone could challenge corporate control of information. Within two years, Indymedia sites bloomed in 125 cities and on every continent.[27]

Even conceding that the vast majority of shoe-leather reporting of original news is still done by hired professionals from a traditional journalistic background, blogs and other news aggregators are increasingly becoming the "new newspapers," making better use of reporter-generated content than the old, highoverhead news organizations.

But in fact most of the traditional media's "original content" consists of verbatim conveyance of official press releases, which could just as easily be achieved by bloggers and news aggregators linking directly to the press releases at the original institutional sites. Genuine investigative reporting consumes an ever shrinking portion of news organizations' budgets.

To the extent that the traditional media still do genuinely independent, investigative reporting, it's true that most journalistic content is still generated by conventional reporters writing for traditional newspapers. It's true that Internet journalism, to a large degree, lacks such resources as "dedicated full-time reporters" and "contacts with politicians who need media to survive… "[28] But Internet journalism makes far better use of the content generated by conventional reporters than do the traditional media.

In the new model of networked journalism, traditional reporters are increasingly relegated to the role of providing raw content. Their analytical function— which they were never very good at anyway, by and large—is being picked up by networked aggregators and commentators.

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[27] David Seaman, "NDAA, SOPA, Presidential Debates, And Iran: Corrupt Media At Play," *Business Insiders*, December 26, 2011 <www.businessinsider.com>.

[28] De Ugarte, *The Power of Networks*, p. 43

And the use that networked journalism makes of the content generated by conventional journalism is entirely different from that of the mainstream press.

> Common to all these Web-based tools—both static and dynamic, individual and cooperative—are linking, quotation, and presentation. It is at the very core of the hypertext markup language (HTML) to make referencing easy… Around these easy capabilities, the cultural practice has emerged to reference through links for easy transition from your own page or post to the one you are referring to—whether as inspiration or in disagreement. This culture is fundamentally different from the mass-media culture, where sending a five-hundred-page report to millions of users is hard and expensive. In the mass media, therefore, instead of allowing readers to read the report alongside its review, all that is offered is the professional review in the context of a culture that trusts the reviewer. On the Web, linking to original materials and references is considered a core characteristic of communication. The culture is oriented toward "see for yourself." Confidence in an observation comes from a combination of the reputation of the speaker as it has emerged over time, reading underlying sources you believe you have some competence to evaluate for yourself, and knowing that for any given referenced claim or source, there is some group of people out there, unaffiliated with the reviewer or speaker, who will have access to the source and the means for making their disagreement with the speaker's views known. Linking and "see for yourself" represent a radically different and more participatory model of accreditation than typified the mass media.[29]

To the extent that the power of the political hierarchy and the moral authority of "our representatives" was reinforced by a mutually supporting relationship between political and media hierarchies, the authority of the political system is undermined by network culture. The authority of the state and its policies depends, to the large extent, on a "consensus reality" common to the overwhelming majority of the population. And the old broadcast model described by Herman and Chomsky was central to the manufacture of consensus reality. Anything that undermines it also undermines the structure of authority. Yochai Benkler writes:

> … at a minimum we can say that individuals are less susceptible to manipulation by a legally defined class of others—the owners of communications infrastructure and media. The networked information economy provides varied alternative platforms for communication, so that it moderates the power of the traditional mass-media model, where ownership of the means of communication enables an owner to select what others view, and thereby offer to affect their perceptions of what they can and cannot do. Moreover, the diversity of perspectives on the way the world is and the way it could be for any given individual is qualitatively increased.[30]

The blogosphere, de Ugarte writes, "will not only threaten the media."

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[29] *Ibid*., pp. 45–46.

[30] Micah M. White, "To the Barricades," *Adbusters*, August 14, 2013 <micahmwhite.com>.

> Every information structure is underpinned by a power structure. Changes in the structure of the information sphere threaten the system of political representation. If the blogosphere actually manages to erode media representation, how could the representation of professional political mediators remain intact?[31]

In place of the old public sphere dominated by one-way broadcast hubs, with communications controlled by gatekeeper institutions with the means to own such hubs, we see the emergence of what Benkler calls the "networked public sphere."[32] The "public sphere," as opposed to the private one, is "the set of practices that members of a society use to communicate about matters they understand to be of public concern and that potentially require collective action or recognition."[33] The public is linked to itself, without mediation by nodes controlled by the state and corporate media, and capable of concerted action *as* a public without the need to coordinate action through the state or other hierarchical organizations.

> The Internet allows individuals to abandon the idea of the public sphere as primarily constructed of finished statements uttered by a small set of actors socially understood to be "the media"... and separated from society, and to move toward a set of social practices that see individuals as participating in a debate. Statements in the public sphere can now be seen as invitations for a conversation, not as finished goods.[34]

Although some have noted a power law distribution of attention in the networked public sphere of the Worldwide Web, this does not—as many of them suggest—imply the reemergence of the old mass-media model. Since the power law distribution of readership reflects only interest, rather than—as with the old broadcast media—the high material cost of hubs, the material entry barriers for a low-volume node to become a high-volume one are nonexistent. And the Web is governed by an extremely long-tail pattern of distribution. To quote Benkler again:

> Some sites are much more visible and widely read than others. This is true both when one looks at the Web as a whole, and when one looks at smaller clusters of similar sites or users who tend to cluster. Most commentators who have looked at this pattern have interpreted it as a reemergence of mass media—the dominance of the few visible sites. But a full consideration of the various elements of the network topology literature supports a very different interpretation, in which order emerges in the networked environment without re-creating the failures of the mass-media-dominated public sphere. Sites cluster around communities of interest: Australian fire brigades tend to link to other Australian fire brigades, conservative political blogs (Web logs or online journals) in the United States to other conservative political blogs in the United States, and to a lesser but still significant extent, to liberal political blogs. In each of these clusters, the pattern of some high visibility nodes continues, but as the clusters become small enough, many more of the sites are moderately linked to each other in the cluster. Through this pattern, the network seems to be forming into

[31] Benkler, *The Wealth of Networks*, p. 264.
[32] Benkler, *The Wealth of Networks*, pp. 218–219.
[33] *Ibid*., p. 9.
[34] De Ugarte, The Power of Networks, p. 48.

> an backbone. "Local" clusters—communities of interest—can provide initial vetting and "peer-review-like" qualities to individual contributions made within an interest cluster. Observations that are seen as significant within a community of interest make their way to the relatively visible sites in that cluster, from where they become visible to people in larger ("regional") clusters. This continues until an observation makes its way to the "superstar" sites that hundreds of thousands of people might read and use. This path is complemented by the practice of relatively easy commenting and posting directly to many of the superstar sites, which creates shortcuts to wide attention… The result is that attention in the *networked* environment is more dependent on being interesting to an engaged group of people than it is in the mass-media environment, where moderate interest to large numbers of weakly engaged viewers is preferable. Because of the redundancy of clusters and links, and because many clusters are based on mutual interest, not on capital investment, it is more difficult to buy attention on the Internet than it is in mass media outlets, and harder still to use money to squelch an opposing view. These characteristics save the networked environment from the Babel objection without reintroducing excessive power in any single party or small cluster of them, and without causing a resurgence in the role of money as a precondition to the ability to speak publicly.[35]

There is a fundamental difference in how the Internet organizes information, compared to the old hub-and-spoke architecture of the broadcast media. The majority of information which makes it through the filtering mechanisms of the gatekeeper press, as we saw above, tends to be content which is generated and shaped by powerful institutions. Newspapers tend to be filled with content generated by public spokespersons and PR departments. Compare this to the results of a Google search for "Barbie," as described by Benkler, which produces listings for AdiosBarbie.com and the Barbie Liberation Organization on the first page of results alongside Mattel's official sales-related site.[36] At the time I wrote the first draft of this passage, in February 2011, a highly critical and snarky old blog post of mine showed up on the first page of results for a Google search on "Fish! philosophy," appearing directly under the official Charthouse site and the Wikipedia entry.[37]

Network technology not only permits open source journalists to compete with conventional ones in doing what the latter should be doing, by putting a cheap printing press within easy reach. It also lowers the transaction costs of doing so, by permitting the near-effortless aggregation of information.

One of my favorite Jon Stewart bits was a long video collage of GOP spokespersons and "pollsters" and "strategists" on the network talking head shows, in late 2003, regurgitating critiques of Howard Dean in almost identical language: too angry, too extreme to represent average Americans, etc. After showing brief clips of the same exact words coming out of twenty different mouths, Stewart commented: "Talking points—they're true because they're said a lot!" That's something a "real" journalist should have done, if the rules of "professional objectivity" didn't outlaw real journalism. But even for someone like Stewart to do it carried enormous transaction costs. Stewart had to persuade some media company executive, representing the enormous ag-

[35] Benkler, p. 10.
[36] *Ibid*., p. 177.
[37] *Ibid*., p. 180.

gregation of capital necessary to set up a cable network like The Comedy Channel, that there was a large enough audience for what he did to justify the cost—and then go through all the effort of putting together a staff and doing all the other stuff that goes into producing a TV show. But thanks to the Web, anyone who knows how to search Google for iterations of the talking points and publish them with a free Blogger or Wordpress blog can be Jon Stewart.

The low cost of aggregating information, along with the overlapping phenomenon of lowered cost of bringing together people in possession of disparate bits of information, makes the whole available to everyone for the first time.

> The low cost of aggregating information also allowed the formalization of sharing among people tracking priestly abuse. BishopAccountability.org, launched a year after ghe Geoghan case, collated accusations of abuse, giving a permanent home to what in the past would have been evanescent coverage. David Clohessy, the director of Survivors Network of those Abused by Priests (SNAP), credits the ability to collect and share information with the change in public perception: "What technology did here was help expose the lie in the two greatest PR defenses of this kind of abuse: 'This is an aberration' and 'We didn't know.' When you can send a reporter twenty links to nearly identical stories, then that reporter obviously approaches his or her own bishop with greater skepticism and much more vigor."[38]

III. Criticism of Networked Journalism

Internet journalism is sometimes criticized for its allegedly derivative or parasitic nature. A good example is this quote from Rusty Turner, the previous editor of my local newspaper (local is a comparative term, considering it's the only player in a single-newspaper market covering two countries, after having swallowed up and amalgamated all the genuine local newspapers in the two county region):

> A lot of people say they get their news exclusively online, that they no longer rely on the printed word, or even broadcast news, for information. But, when you consider where most original reporting develops (that would be the printed pages and Web sites of newspapers wire services, televisions and other traditional news-gathering operations, then, really, most people still depend on us dinosaurs. They're just consuming our work in a different form.

As I already said, I don't think anyone will dispute that print journalism has an advantage over Internet journalism in the number of personnel engaged in shoe-leather reporting, or that the vast majority of content that appears in online journalistic venues comes from reporters working in traditional print media.

These facts are not in dispute. The problem is with the conclusions people like Mr. Turner draw from them, which manage to miss the fundamental significance of network organization.

The revolutionary significance of Internet journalism lies not in how it generates content, but in the use it makes of existing content. Bloggers make better use of the dead tree media's own content than the dead tree media itself does.

[38] *Ibid*., pp. 12–13.

To repeat yet again, nobody disputes that print journalism has an enormous army of reporters on the ground, far beyond the resources online journalism has at its direct disposal. But as Lincoln once said to General McClellan, "If you're not going to use that army, may I borrow it?"

I don't think Mr. Turner and those of like mind fully understand the implications of their own argument. For example, most of what Mr. Turner himself does is not direct reporting, but filtering, selecting, editing and combining the content of reporters working for *The Morning News*. Aside from the fact that both he and the reporters are within the imaginary walls of the same corporate entity, how is what he does any different from what a blogger does in using content generated by other people, and using his own critical intelligence to decide what is useful and relevant and what is not, and exactly how to combine it? Even worse for Mr. Turner's position, a major part of the content he includes in his newspaper is not generated internally at all, but from reporters working for other organizations. A considerable portion of the state, national and international news that appears in *The Morning News* is generated by the Associated Press. As Matt Yglesias put it:

> Convention dictates that if I sit at a desk and read a transcript of what the press secretary said and then write about the transcript, I'm a lowly cheeto-eater. But if I sit in the White House press room and transcribe what the press secretary said, and then write about the transcript then that's journalism.[39]

The formal difference between what Mr. Turner does and what a blogger does consists primarily of Mr. Turner's limitation by the legal fiction of corporate boundaries. The blogger or other online journalist is every bit as much an editor as Mr. Turner, in the sense of editing and recombining content generated almost entirely by other people. But while Mr. Turner is limited to the stable of reporters available to him in-house, supplemented by syndicated material from the wire services, for the blogger the entire world of journalism is "in-house."

More importantly, while both traditional editors and bloggers make use of second-hand material they did not themselves write, bloggers make better use of it. They use what's out there in ways that most traditional newspapers refrain from doing. That is, they put it together. They quote a factual claim from one source, and then immediately provide a hyperlink to information that provides a factual context to the claim. They take bits and pieces of news from different sources, aggregate it, and draw conclusions as to its meaning. In other words, they analyze material from various sources in light of each other and in light of independent research into the factual realm, in exactly the ways which we've seen are prohibited by the establishment journalism's ethos of "professional objectivity."

IV. Watching the Watchdog

One example of how the Web can subject conventional, industrial-model journalism to critical analysis is Churnalism.com, a website that lets readers paste in articles and check to see how much of their content comes from press releases.

> The website, churnalism.com, created by charity the Media Standards Trust, allows readers to paste press releases into a "churn engine". It then compares the text with a

[39] *Ibid*., p. 277.

constantly updated database of more than 3m articles. The results, which give articles a "churn rating", show the percentage of any given article that has been reproduced from publicity material.[40]

[40] Kevin Carson, "More On (Moron?) Fish! Philosophy," *Mutualist Blog: Free Market Anti-Capitalism*, April 26, 2006 <mutualist.blogspot.com>.

12. Open Source National Security

The question remains of networked, stateless society is to respond to attacks from outside: attacks from what are conventionally regarded as "foreign" enemies, like military forces or terrorists.

I can't overemphasize how vital it is that we compare apples to apples. That is, our basis of comparison for networked alternatives is not what the state proclaims as its mission, but what the state actually accomplishes.

For example, most of the U.S. government's responses to terrorist attacks have been what security analyst Bruce Schneier calls "security theater." A large part of the government response to 9/11 was "knee-jerk reactions to the news of the day," measures that "may enhance our feeling of security, but would actually make us less safe."[1] The government has reacted to terrorism in ways that are directly counterproductive and make the system more centralized and brittle.

> We spend time, money, and energy creating systems that can themselves be attacked easily and, in some cases, that don't even address the real threats. We make poor tradeoffs, giving up much in exchange for very little security. We surround ourselves with security countermeasures that give us a feeling of security rather than the reality of security.[2]

The simple fact of the matter is that even competently organized security policies won't be 100% effective. No matter who's in charge, there will occasionally be people killed by terrorism when preventative measures fail—and all the cries of "don't just stand there" in the world won't change this fact.

Counter-terrorism measures often just shift the risk of attack to less welldefended targets. In fact, as Schneier noted, more stringent TSA passenger screening shifted vulnerability within the airport from onboard passengers to the large, concentrated masses of people waiting in line to be scanned.[3]

One reason bureaucratic counter-terrorism efforts are so ineffective is that agile networks like Al Qaeda can quickly respond by shifting to a weaker link, while the TSA spends countless bureaucratic labor-hours ponderously grinding out a policy for preventing the previous attack. The TSA bureaucracy seems to largely ignore the possibility that its adversary might take countermeasures or adapt.

In any case, the very fact that nobody *has* carried out such a suicide bombing in an airport processing area—or in a shopping mall, for that matter—is probably an indication that the personnel pool for terror attacks in the U.S is quite limited. In light of such evidence, as well as the

[1] Shirky, *Here Comes Everybody*, pp. 150–151.

[2] Matthew Yglesias, "Journalists, Bloggers, and Status Anxiety," *Yglesias*, January 14, 2009 <yglesias.thinkprogress.org>.

[3] Paul Lewis, "Churnalism or news? How PRs have taken over the media," *The Guardian*, February 23, 2011 <www.guardian.co.uk>.

half-assed nature of attempted airline attacks since 9/11, it seems likely 9/11 was simply a case of picking low-hanging fruit.

There is no such thing as absolute security. Any attempt to prevent terrorism will involve a tradeoff of some sort, and some options will require tradeoffs that most people simply regard as too costly.[4] We're unwilling to ban cars and lock ourselves in our homes to eliminate 100% of traffic fatalities. The same principle applies to terror attacks. Regardless of politicians' posturing that "we can't put a price on human life," in fact we do just that. There will inevitably be some tacit understanding of the amount of death and destruction we are willing to tolerate rather than bankrupt ourselves for the unattainable goal of absolute security.

I. The State as Cause of the Problem: Blowback.

Leaving aside questions as to whether U.S. entry into WWII itself resulted from a deliberate policy of goading Japan into attacking, or the Korean war resulted from US-backed border skirmishes getting out of hand (I think the answer in both cases is "yes"), most of the enemies the U.S. has fought since WWII have been of its own creation.

To take the Middle East: Starting at present and working our way back, ISIS is an outgrowth of Al Qaeda Iraq networks in American military prisons and of Western aid to Syrian rebels. Al Qaeda Iraq is entirely the result of the U.S. invasion of Iraq, its creation of a total political vacuum there, and its decision to back sectarian representation in the Iraqi successor government. Al Qaeda, the entity which carried out the 9/11 attacks, emerged in Afghanistan as a direct result of the Carter administration's decision to destabilize a Soviet client state there and the Reagan administration's decision to back the fundamentalist guerrillas. Ultimately Wahhabism as a modern major political force results mainly from U.S. support for the house of Saud's unification of the Arabian peninsula back in the 1930s. The 1991 Gulf War resulted from U.S. decisions to install Saddam in power and to back him against the "Great Iranian Menace" in the 1980s, and from signals it sent him in 1990 that it would not react to an invasion of Kuwait. The "Great Iranian Menace" itself resulted from the U.S. overthrow of Mossadegh and its support for the Shah's dictatorship. And the Arab-Israeli conflict, along with a major share of other regional instability, date back to the Balfour Doctrine and the colonial division of the Ottoman Empirein the Sykes-Picot agreement after WWI.

In other words, every problem the United States has faced in the Middle East for the past 60 years or more has resulted from U.S. intervention, and its interventions to "solve" those problems has in every case made things worse.

What's more, in a general sense the very act of being a global empire creates a kind of "public choice" incentive for terrorism. When an empire maintains garrisons in half the countries in the world and claims a "national security interest" in deciding the winners and losers in regional territorial disputes as well as internal civil wars and political contests, influencing American domestic politics becomes an important source of leverage for local political actors for obvious reasons. In the alternate history novel Fatherland, by Robert Harris, the German Reich expanded to the Volga and created German colonies all over the Ukraine and European Russia. Quite pre-

[4] Bruce Schneier, *Beyond Fear: Thinking Sensibly About Security in an Uncertain World* (New York: Copernicus Books, 2003), p. 3.

dictably, it made sense for native partisans to begin sending parcel bombs to offices in Berlin as a "message to the German people" about the costs of empire.

Libertarians, when talking about the welfare state, sometimes say that government is great at breaking your legs and then giving you crutches. The same principle applies to the national security state.

If the vast majority of a state's so-called "defense" efforts actually involve force projection on the other side of the globe against states barely capable of projecting force a few hundred miles outside their own borders, and most actual attacks on the territory of the U.S. itself are blowback from such foreign operations, it follows that most so-called "national security" is a manufactured problem.

II. Meta-Organization

There is a substantial body of literature on how a stateless society would conduct an organized defense against large-scale foreign attacks: how it would fund defense of an entire contiguous territory without recourse to a coercive taxing authority, how it would overcome the free rider problem, etc. We will not rehash this literature and the questions it deals with, in its own right, in this chapter. Our primary concern is with institutions for collective defense as such in a stateless society, only to the extent that network technology creates new synergies with such institutions as envisioned in traditional literature, or that new technologies enable networked individuals and small groups to perform functions that previously required a state.

The classical anarchist literature of the nineteenth century, as well as of the communist and syndicalist anarchisms of the twentieth, has treated social defense as a function of federated communities. In contrast, most "anarcho-capitalist" (and a major share of market anarchist) literature on the organization of defense in a stateless society tends to focus almost exclusively on the "protection services agency" or "security firm" as the primary unit of defense.

I believe the latter's disproportionate focus on the organization of security as a commercial business, via the cash nexus, is a blind spot.[5] Most conventional libertarian portrayals of an ideal free market society, and particularly the usual an-cap version of the conceptual framework of individual self-ownership and nonaggression, implicitly assume an atomized society of individuals living (at most) in nuclear families, with fee-simple ownership of a house and quarter-acre lot, and with most essentials of daily living purchased via the cash nexus from for-profit business firms.

But the libertarian concepts of self-ownership and nonaggression are entirely consistent with a wide variety of voluntary social frameworks, while the practical application of those concepts would vary widely.

Imagine a society on the neolithic pattern, shared by most of the world before the rise of the centralized territorial state, where most ultimate land ownership was vested in village communes, even though there might be a great deal of individual possession. The evidence is overwhelming that the form of social organization dimly reflected in the Russian *mir*, the English open field system, the communal village tenure in India under the so-called "Asiatic mode of production," and the Jubilee system in Israel under the judges, was the typical neolithic pattern before the rise of the state. Or imagine a society like the free towns that Kropotkin described in the late Middle

[5] *Ibid*., p. 14.

Ages, where people organized social safety net functions through the guild or other convivial associations. Now, it might be permissible for an individual family to sever its aliquot share of land from the peasant commune, and choose not to participate in the cooperative organization of seasonal labor like spring plowing, haying or the harvest. It might be possible, in an anarchist society, to stay outside the guild and take her chances on unemployment or sickness. But in a society where membership in such social units was universally regarded as the best form of insurance, such a person would likely be regarded as eccentric, like the individualist peasants in anarchist Spain who withdrew from the commune, or the "propertarian" hermits in Ursula LeGuin's *The Dispossessed*.

Let me enumerate some basic starting assumptions about the conditions under which networked alternatives will gradually supplant the state. First, we will experience a period characterized by "hollowed-out states," in which the eroding tax base coupled with rising unemployment means states' obligations for public services (fire, police, schools, streets, utilities, etc.) and the social safety net will far outstrip their revenues. As a result, states will steadily retreat from the social field and take an increasingly minimalist approach to public services. Second, total work hours per capita will gradually decline and rates of unemployment and underemployment will creep slowly upward. Third, as a matter of necessity, the unemployed and underemployed will shift a growing share of their needs frompurchases with wages to self-provisioning, gifting and barter in the household and informal sectors. Fourth, as both the government and employer-based welfare states erode, the informal sector will of necessity evolve mechanisms for pooling income and risks and spreading costs.

This is likely to take the form, specifically, of people coalescing into primary social units at the residential level (extended family compounds or multi-family household income-pooling units, multi-household units at the neighborhood level, coordinated self-provisioning in micro-economies organized on residential blocks or cul-de-sacs, urban communes and other cohousing projects, squats, and standalone intentional communities), as a way of pooling income and reducing costs. As the state's social safety nets come apart, such primary social units and extended federations between them will fill the vacuum. A good fictional example is the Northwest Federation in Poul Anderson's Maurai stories, a comparatively decentralized and libertarian polity that stretched from British Columbia to northern California. In the aftermath of a nuclear holocaust, the new society coalesced around friendly societies and fraternal lodges as providers of public utilities and the social safety net.

One early sign of a trend in that direction: multi-generational or extended family households are at a fifty-year high, growing five percent in the first year of the Great Recession alone.[6]The phyles we considered in a previous chapter— networked civil societies decoupled to a greater or lesser extent from geography— may also take over some public service and welfare state functions.

In a society where a major share or even a majority of people voluntarily participate in such primary social units, most of the social regulations that governed people's daily lives would be largely orthogonal to the distinction, in the conventional market anarchist conceptual framework, between self-ownership and coercion.

By way of comparison, the kinds of mainstream free market libertarians conventionally assigned to the Right treat the currently predominating model of employment in a business firm—

[6] *Ibid*., p. 113.

and all the associated forms of command and submission it implies—as the norm. For them, the whole self-ownership vs. aggression paradigm is irrelevant to life within the corporate organizational framework, so long as participation in the framework is itself voluntary. Aha! But by the same token, when people are born into a framework in which they are guaranteed a share in possession of communal land and are offered social safety net protections in the event of illness or old age, in return for observance of communally defined social obligations, the same principle applies.

And in a society organized predominantly on this model, with social services provided mainly through primary social units, and the collection of benefits tied to the performance of defined social obligations, I believe most of the free rider problems with which so much market anarchist literature is preoccupied would fade into comparative insignificance. The key to organizing territorial defense on a large scale, through federations of such voluntary primary social units, is to overcome the free rider problem by bundling defectable and non-excludable territorial defense functions with excludable, non-defectable service obligations already provided through such associations. One of the duties of members of primary social units, in return for access to a plot of land or workshop and guaranteed old age support and healthcare, would be to provide support—in one form or another—to a territorial militia raised from federations of such communities.

Service in a militia unit, or payment to support full-time defense personnel, would in that scenario be a condition for the use of libraries and public utilities, participation in public pension or sickness and unemployment insurance, and the like.

Fred Foldvary depicts a hypothetical voluntary Georgist community in which public services are funded by membership fees assessed on the site value of land. Such communities would include

> land trusts, condominiums, residential associations, proprietary communities (such as shopping centers and hotels), and apartment buildings. Membership in a community would be voluntary. These communities would associate together in networks and leagues. The members would share the belief that the land rent should be collected and distributed to all members equally or else used for public goods.
>
> Under "geo-archy," communities would create higher-level associations to provide public goods with a wide scope such as defense. Most communities would be members of the greater association, which would provide for a uniform rule of law at the highest level of association. Individuals and communities who are members would receive a package of goods, including security and access to public works, which makes membership advantageous. Members could secede, but would lose the package, so secession would be limited. Folks would therefore have the advantages of a state, but without the tyranny.[7]

In the event a member failed to pay the land value tax, the voluntary association would declare the defaulting party to be "not subject to the protection of the governing agency, nor entitled to any of the agency's servic."[8]

[7] *Ibid*., p. 13.

[8] Much of the immediately following discussion is based on material in Chapter Six of Carson, *The Homebrew Industrial Revolution* (Booksurge, 2010).

I argue below that a decentralized, stateless society is less vulnerable to foreign conquest insofar as it presents a much wider array of lower-profile, lower-value targets and there's no single center of authority to surrender. Nevertheless, as pointed out by Peter M. Lawrence (a polymath who frequently gives me feedback), there are historical models for bringing a decentralized society under subjection.

One of the most plausible scenarios by which a stateless society might be brought under subjection, and by which peasant communities were in fact brought under subjection historically, according to Lawrence, is by some combination of armed marauders raiding the populace from fortified strongholds, and/or condottieri offering their services for hire against such marauders. S. M. Stirling's scenario at the outset of the Emberverse series is a good fictional example of this model. Men at arms established fortified strongholds from which they raided surrounding villages, demanding tribute in return for protection. Those who refused tribute were subject to punitive raids, with houses burned and crops and movables carried away. But there were some differences between Stirling's scenario and what actually happened in the Dark Ages.

> The big difference from the typical scenarios that actually happened as the feudal system emerged at the end of the Dark Ages was, he [Stirling] was applying a mafia protection money model, creating the menace he offered protection from. But the usual thing was much more like the Seven Samurai/Magnificent Seven scenario, in which people much like the threateners help the villagers instead of just doing their own raids etc. Imagine that happening on a regular basis rather than as a one off, i.e. with the rescuers sticking around for a retainer rather than a reward, and in lots of similar places at the same time… [F]eudal structures are just as fair as ideal free markets, in themselves, but the unfairness comes in from the settings from outside (exogenous parameters, boundary conditions). Back then, it was the uneven bargaining position of warlords and peasants.[9]

Compare this to Kropotkin's account of the origins of feudalism in the *scholae* of the early Dark Ages:

> These barbarians covered the country with villages and farmhouses; they cleared the forests, bridged the torrents, and colonized the formerly quite uninhabited wilderness; and they left the uncertain warlike pursuits to brotherhoods, *scholae*, or "trusts" of unruly men, gathered around temporary chieftains, who wandered about, offering their adventurous spirit, their arms, and their knowledge of warfare for the protection of populations, only too anxious to be left in peace…
>
> The very peacefulness of the barbarians, certainly not their supposed warlike instincts, thus became the source of their subsequent subjection to the military chieftains. It is evident that the very mode of life of the armed brotherhoods offered them more facilities for enrichment than the tillers of the soil could find in their agricultural communities… Droves of cattle, iron… , and slaves were appropriated [through armed raids]… There was plenty of waste land, and no lack of men to till it, if only they could obtain the necessry cattle and implements. Whole villages, ruined by

[9] Donna St. George, "Pew report shows 50-year high point for multi-generational family households," *Washington Post*, March 18, 2010 <www.washingtonpost.com>.

> murrains, pests, fires, or raids of new immigrants, were often abandoned by their inhabitants, who went anywhere in search of new abodes… And if one of the *hirdmen* of the armed brotherhoods offered the peasants some cattle for a fresh start, some iron to make a plough, if not the plough itself, his protection from further raids, and a number of years free from all obligations, before they should begin to repay the contracted debt, they settled upon the land. And when, after a hard fight with bad crops, inundations and pestilences, these pioneers began to repay their debts, they fell into servile obligations towards the protector of the territory.[10]

By this process, "populations, once free, and simply agreeing 'to feed' a certain portion of their military defenders, gradually became the serfs of these protectors… "[11]

Lawrence also suggested some historical models for resisting such strongarm tactics, either from the conquering barbarians or the *scholae*:

> Responsibilities against raids were decentralised and handed off to frontier units, including privileges and tax breaks to encourage soldier-settlers (drawing on fleeing refugees, among others) like the Fencibles of Canada and New Zealand, and (in Spain and Portugal, and the Baltic) semi-monastic military orders with local holdings organised into commandries analogous to monasteries.[12]

In an egalitarian stateless society it would amount to self-organized "*scholae*," created by the protected communities of, by and for themselves.

This is illustrated fictionally, in Stirling's Emberverse scenario, by the Dunedain Rangers. There were several free communities of several thousand people in the Pacific Northwest, including Clan Mackenzie and the Bearkillers, into whom members were born with automatic duties and entitlements to benefits, so long as they remained. Choosing to remain in the community at the age of majority, and receiving its safety net and community defense protections, entailed the free choice to provide defined amounts of collective work for the community and to provide militia service with one's comrades. Territorial defense for all these communities was undertaken by the Rangers, who maintained a chain of fortified frontier outposts, conducted regular patrols, and had mobile reserves in the event of incursions. The Rangers were supported by regular contributions assessed from the federated communities under their protection.

The most extreme barbarian invasion scenarios—sudden Viking raids on early medieval European towns, genocidal gangs of Hutus in Rwanda, fictional examples like the Reavers in Firefly—amount to swarming attacks. The proper defense, mounted by our self-organized *scholae* or Dunedain, is the counter-swarming attack. A fairly low-tech version of this was organized through the Catholic Church's radio network in the Congo—a country where wireless or telephone connectivity is virtually nil—as an agile defense against swarming attacks by rebel groups on isolated Congolese rebels. The mobile reserves called to the incursion point were either UN peacekeepers or the Congolese Army.[13] But the same thing could be done, with even

[10] Fred E. Foldvary, "Why Aren't You an Anarchist?" *Free Liberal*, February 14, 2006 <freeliberal.com>.

[11] Foldvary, "What Penalty For Not Paying LVT?" *Free Liberal*, March 7, 2006 <freeliberal.com>.

[12] Peter M. Lawrence, private email, December 17, 2010.

[13] Pyotr Kropotkin, *Mutual Aid: A Factor in Evolution* (New York: Doubleday, Page & Company, 1909), pp. 154–157.

greater agility, through the Internet; and the mobile reserves could be recruited from the local population.

Similar nonstate defenses have been organized against Boko Haram in Nigeria. Residents of Kalabalga village in Nigeria's Borno state "got word" in May 2014 by unspecified means of Boko Haram forces moving in their direction, and laid an ambush that resulted in ten attackers and two trucks being captured, and about 200 killed.[14]

There's a fairly rich history of self-organized defenses against armed non-state actors.[15] An especially prominent example is the Mexican *autodefensa* movement, which has organized village defenses against vicious narcotrafficking gangs that had previously either corrupted or terrorized law enforcement into inaction. In January 2014, in southern Michoacán state, *autodefensas* armed with weapons ranging from "single-shot hunting rifles to AK-47s," successfully "fought drug-trafficking gunmen out of towns in which they used to rule unobstructed by the police." The *autodefensas* acted in response to the Caballeros Templarios organization, which had begun imposing taxes on economic activities (including even tortilla-makers) in the region, and raping and kidnapping with impunity. In some cases the autodefensas had to disarm corrupt local police before dealing with the drug lords.[16]

There's been some controversy as to whether the autodefensas have been resorting to vigilantism and lawlessly expanding their own power over local populations, and whether the military's intervention to reclaim power from the autodefensas is a good thing. For Jesse Taylor at Interference the answer is simple:

> these groups are not random individuals with guns "taking the law into their own hands". They are well-organized groups of trusted/respected citizens who are chosen by and controlled by community assemblies. These community assemblies have decided that they want the cartels out of town. They have also decided that the police and government are controlled by the cartels, and so they need to go as well. So these groups aren't some random gang that decided to take over the town. They are the result of community members coming together and deciding that they wanted to take their town back from the cartels, and that the only way to do this was to take up arms against them. This movement for self-determination and community self-defense is spreading like wildfire, in dozens of towns across southern Mexico.
>
> … The drug cartels, the rich, and the Mexican government cannot be considered as separate groups –at the top, you have the same people benefiting from all three. These criminal elites are terrified about what is happening in Michoacán—people taking back community power by force, kicking out the cops and governments that give the cartels/rich their power. This is why there is suddenly this wave of propaganda coming out of the corporate media in both Mexico and the U.S. trying to paint these groups as "vigilantes".[17]

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[14] *Ibid*., p. 162.

[15] Lawrence, private email, December 21, 2010.

[16] David Axe, "Church radios form basis of a lifesaving system in Congo," *Wired UK*, October 28, 2010 <www.wired.co.uk>.

[17] Kukogho Iruesiri Samson, "Villagers Kill 200 Boko Haram Insurgents With Dane Guns, Arrows; Catch 10 Alive," *Pulse*, May 14, 2014 <pulse.ng>.

The movement is organized based on the principle of "citizen and social control of territory," similar to the Zapatista *caracoles (*regional self-government structures) in Chiapas, and the self-defense organizations that exist today in 23 municipalities in Guerrero.[18]

The ninja arose under similar circumstances in medieval Japan. At the time life in most of Japan was disrupted by conflict between feudal warlords. The Iga and Koka region "had been pretty free of warlords and was determined to remain so. And what happened was that the villages there formed themselves like selfdefense communes, and it was in that context that the ninja skills developed."[19] This also bears some resemblance to the origin of Switzerland, in portions of the Alps defensible against the Habsburg Empire.

The question we've considered in this section so far is whether the territorial defense function can be organized in an anarchist society, and consistently with its basic principle of voluntary association, as stated by Kropotkin: that is, based on "free agreements concluded between the various groups, territorial and professional, freely constituted for the sake of production and consumption… "[20] Could it be carried out by free federations of voluntary primary associations without taxing power by a territorial state or other imposition of coercive authority on nonconsenting third parties? As already suggested above, I believe it could.

Lawrence argues that it would be possible to fund such functions through voluntary membership dues. But, he continues, such a funding system can only work when a number of services are interlocked in the same funding system, and a history of payments is required to qualify.

> On their own, membership dues can't work any more than health schemes you can put off joining until you get sick, and public shaming is a complete nonsense—it's only effective on those you don't need it for (think "if you outlaw guns, only outlaws will have guns"—you reward the shameless by hampering the rest)…
>
> Interlocking is what happens with health schemes that do work, by interlocking entitlements with a history of payments. It's what makes clan systems work, since young men don't get land (read: other resources) until they have put in their time helping their elders, e.g. on a sharecropping basis in which a cut goes to the chief's household (which supports widows and orphans, if it wants to maintain legitimacy…); the chief gets to allocate lifetime holdings to clan members during good behaviour, and is generally elected for life from among descendants of chiefs by older clan members (Roman patron-client systems resemble the institution of "dash" among Nigeria's Yoruba, and so on). This can be—and has been—generalised to guild structures (apprentice to journeyman to master, with rostered grand masters), though those were under an outer authority structure; the point for rulers was, they did not form a drain on that structure, unlike modern forms, so proto-states could afford them where they couldn't afford tax and spend methods. All these things work through interlocking privileges, in which everybody has some privileges and so has a stake,

[18] "People Power Against Armed (Non-State) Groups," *Rational Insurgent*, May 15, 2014 <rationalinsurgent.com>.

[19] Pablo Piccato, "Are Mexico's Armed Civilians 'Vigilantes'?" *Dissent*, January 23, 2014 <www.dissentmagazine.org>.

[20] Jesse Taylor, "Deconstructing recent propaganda surrounding 'vigilante groups' in Southern Mexico," *Interference*, January 15, 2014 <www.interference.cc>.

> just different privileges so there is an inter-dependency; age structuring makes it more equitable over a whole life.[21]

Such discussions are necessarily largely theoretical, addressing as they do questions of the organization of society as a whole in a hypothetical stateless order. As such, they are considerably more large-scale and theoretical than the overall focus envisioned for this book.

As Chris Sciabarra pointed out in *Total Freedom*, totalizing visions of a free society organized according to some grand libertarian philosophy are of necessity unrealistic. This is so for the same reason that utopian visions of a society organized in keeping with any ideology are unrealistic. Transitions from one system of social organization to another, in the real world, are piecemeal and partial, with a considerable variety of subjective visions and motives among those involved. So Murray Rothbard's vision of a stable majority of an entire society converted to the nonaggression principle, operating according to essentially the same libertarian law code, and with some set of model libertarian institutions, is probably as close to the literal meaning of "utopia"—nowhere—as we could imagine. It's about as unrealistic as the similar vision by the Socialist Party of Great Britain, of the entire world being converted by democratic agitation to their capital-S version of "Socialism" and instituting it near-simultaneously worldwide through parliamentary action.

Eugene Holland celebrates as a positive development the emergence of a new generation of utopian literature, which abandons the monolithic social models traditional to the genre for something less totalizing:

> … [T]he grip of totalizing thought and absolute formal closure on utopian fiction begins to relax on the waning days of the twentieth century, as a new mode of utopian thinking appears, both in fiction… and in theory… Rather than the "obsessive search for a simple, single-shot solution to all our ills" that characterizes the Imagination of classic utopian texts, more recent utopian thought and fiction acknowledge and emphasize… the plurality of possible utopias instead… [Kim Stanley] Robinson's sprawling novels… portray a wide range of different utopian experiments and communities in the course of his account of the colonization of Mars. The significance of this recent direction taken in utopian thought and fiction is the departure from singularity and totality that had seemed inherent in, if not indeed definitive of, the genre: the plurality of utopian impulses and ideals defies the singular perfection of utopia. From here it is but one step—albeit a significant one—to the vocation of affirmative nomadology to detect and reinforce utopian ideals in actually existing institutions of whatever scale, from neighborhoods to virtual Internet communities to production cooperatives to far-flung global trade arrangements. The utopian character of these institutions remains completely distinct from any singular utopia conceived as a total, selfcontained community, for they are interwoven transversally with one another and constitute something like a meshwork rather than a unified whole.[22]

[21] "Analysis: A Case in Support of the Autodefensas Movement," *Borderland Beat*, November 27, 2013 <www.borderlandbeat.com>.

[22] Ishaan Tharoor, "You Don't Know the Ninja: 8 New Revelations About the Shadow Warrior," *Time*, February 4, 2013 <world.time.com>.

And it follows that whatever system of meta-law emerges to maintain peace and regulate dealings between these varied communities, it will be organic (the product of ad hoc, bottom-up negotiation and precedents) rather than schematic (like Rothbard's libertarian law code).

So as irresistible as it was for me to engage in the broad speculations above about society-wide organization above, we need to get back to the question of security as it relates to the overall theme of this book: measures that are within the capabilities of individuals and networked groups to protect themselves in ways that previously required a territorial state.

Given this constraint, our primary emphasis will be at the micro rather than macro level. What can individuals and self-organized networks do, at the micro level, to secure themselves from the danger of attack and minimize the damage that does occur?

III. Active Defense, Counter-Terrorism, and Other Security Against Attack

So we return—again—to the question of how defense against terrorism and other external attacks would be provided for in a society of self-organized networks.

Eric Raymond sees the phase transition between forms of social organization as a response to insupportable complexity. The professionalized meritocracies that managed the centralized state and large corporation through the late-middle 20th century were an attempt to manage complexity by applying Weberian and Taylorist rules. And they did a passable job of managing the system competently for most of that time, he says. But in recent years we've reached a level of complexity beyond their capacity to deal with.

> The "educated classes" are adrift, lurching from blunder to blunder in a world that has out-complexified their ability to impose a unifying narrative on it, or even a small collection of rival but commensurable narratives. They're in the exact position of old Soviet central planners, systemically locked into grinding out products nobody wants to buy.

The answer, under these conditions, is to "[a]dapt, decentralize, and harden"—i.e., to reconfigure the system along the stigmergic lines he described earlier in "The Cathedral and the Bazaar":

> Levels of environmental complexity that defeat planning are readily handled by complex adaptive systems. A CAS doesn't try to plan against the future; instead, the agents in it try lots of adaptive strategies and the successful ones propagate. This is true whether the CAS we're speaking of is a human immune system, a free market, or an ecology.
>
> Since we can no longer count on being able to plan, we must adapt. When planning doesn't work, centralization of authority is at best useless and usually harmful. And we must harden: that is, we need to build robustness and the capacity to self-heal and self-defend at every level of the system…[23]

[23] Pyotr Kropotkin, "Anarchism," *Encyclopedia Britannica* (1910). Reproduced at Anarchy Archives <dwardmac.pitzer.edu>.

As John Robb puts it:

> The global financial and economic system is now a network. Everything is connected.
>
> This system has become VERY big and VERY complex. It's simply beyond what government bureaucracies and markets were designed to manage/control.
>
> Inevitably, as with all unstable systems that can't be manged/controlled, it will collapse. It will shrink to a size that can be managed through markets and bureaucracy.[24]

After the Boston Marathon bombing and subsequent security lockdown of the city, Robb noted that a society organized on such centralized and brittle lines as ours would spend an increasing share of days each year under lockdown from terrorist threats.

> However, over the long run, I believe this phrase is going to look as silly as "Duck and Cover" does to today's world. The reason is simple. As the number of disruptions increase, we're going to face a choice. We can either stay under constant lock-down, or we can become resilient…[25]

The ideal organization for countering the threat of terrorism is one that 1) has a distributed architecture in which damage to any one node will only do minimal damage to the network as a whole; 2) has no nodes large enough to present a valuable enough target, from an attacker's perspective, to expend resources attacking; 3) empowers those at the endpoints to act on their own initiative in response to the situation on the ground; and 4) doesn't go around the world stirring up terrorism in the first place. According to Ben Kohlman:

> We heavily secure nuclear facilities and the big ticket infrastructure. But the attacks of 9/11 were successful because the attackers completely bypassed the US military in attacking our country. They rendered our multi-million dollar air defense fighters irrelevant.
>
> Spend a few thousand dollars to cut oil pipelines, destroy main power transmission centers or strategically cut off transportation networks, and you've done as much damage as a highly coordinated, high cost attack would. And bureaucrats would still sit around wondering how their hundred billion dollar planning apparatus failed.
>
> The solution to this is not a centralized, uncreative Department of Homeland Security, but rather a system that renders Open Source Warfare irrelevant. It creates an open infrastructure of its own, able to absorb unforeseen events, of both the natural and man made kind.
>
> Most of all, this requires a radical new way of approaching our society. It is becoming apparent that the centralized, nation state model of the past century is increasingly antiquated. Much as Wikipedia has allowed knowledge to be more broadly accessible at very little cost, so too must our infrastructure development allow small, local

[24] Lawrence, private email, May 17. 2011.

[25] Eugene Holland, *Nomad Citizenship: Free-Market Communism and the Slow-Motion General Strike* (Minneapolis: University of Minnesota Press, 2011), pp. 167–168.

> innovations to take hold. This will create a resilient network of citizenship in its own right, while also lessening the ability of wily adversaries to cheaply disrupt our society at low cost.[26]

The military's new information-centric warfare doctrines are an attempt to take advantage of network communications technology and cybernetic information processing capabilities in order to replicate, within a conventional military force, the agility and resilience of networked organizations like Al Qaeda. The problem is that interference from the military's old bureaucratic hierarchies systematically impedes all the possibilities offered by network technology. Rather than increasing the autonomy and reducing the reaction time of the "boots on the ground" directly engaged in a situation, military hierarchies wind up seeing the new communications technologies as a way of increasing mid-level commanders' realtime control over operations, and increasing the number of sign-offs required to approve any proposed operation. By the time those engaged in combat operations get the required approvals of higher-ups, the immediate situation has changed to the point that their original plan is meaningless anyway. Most people are familiar with the saying that no military plan survives first contact with the enemy. But in fact the plan has most likely already been rendered obsolete, before contact with the enemy ever occurs, by its passage through the military bureaucracy.

Rigid hierarchies and standard operating procedures only work in a predictable environment. When the environment is unpredictable, the key to success lies with empowerment and autonomy for those in direct contact with the situation. Because of volatility and black swan events, as John Hagel argues

> [t]he push programs that seemed so essential to scalable efficiency now produce the opposite: increasing inefficiency, as rigidly constructed programs face unanticipated changes in the market.
>
> Equally importantly, we're moving from a world of knowledge stocks, where competitive advantage resides in proprietary knowledge of lasting value, to a world of knowledge flows, where competitive advantage can only be attained by participating effectively in a larger and more diverse set of knowledge flows. In a world that's changing more rapidly with growing uncertainty, knowledge stocks depreciate in value at an accelerating rate.
>
> This suggests an alternative rationale for institutions. Rather than pursuing scalable efficiency, perhaps we need a new set of institutions that can drive scalable learning, helping participants to learn faster by working together. While simple to state and intuitively appealing, this requires profound changes to our institutional landscape.
>
> Rather than relying on rigid push programs, we need to increasingly develop scalable pull platforms where people can draw out people and resources where they are needed and when they are needed, not just to perform pre-defined tasks, but to engage in creative problem-solving as unanticipated challenges arise…[27]

[26] Eric Raymond, "Escalating Complexity and the Collapse of Elite Authority," *Armed and Dangerous*, January 5, 2010 <esr.ibiblio.org>.

[27] Robb, "A Global Economic Reset? Don't Wait to Find Out. Build Something Better," *Resilient Communities*, November 15, 2012 <www.resilientcommunities.com>.

A good example is the Transportation Safety Administration's response to the threat of Al Qaeda attacks. As Matthew Yglesias has argued, "the key point about identifying al-Qaeda operatives is that there are extremely few al-Qaeda operatives so… any method you employ of identifying al-Qaeda operatives is going to mostly reveal false positives."[28] As Public Intelligence comments:

> The DHS' unfocused "terrorvision" continues to see a threat in every situation and the department seems to be busying itself crafting a response to every conceivable "threat." The problem with this "method" is that it turns any slight variation of "everyday activity" into something suspicious. The number of "terrorist implications" grows exponentially while the number of solutions remains the same.[29]

The U.S. government's labyrinthine system for gathering, processing and coordinating intelligence is so complicated and produces such a high volume of data that it is overwhelmed with information it is incapable of digesting or putting to productive use. According to Dana Priest and William M. Arkin, a two-year investigation at the *Washington Post* found: "The top-secret world the government created in response to the terrorist attacks of Sept. 11, 2001, has become so large, so unwieldy and so secretive that no one knows how much money it costs, how many people it employs, how many programs exist within it or exactly how many agencies do the same work."

> Many security and intelligence agencies do the same work, creating redundancy and waste. For example, 51 federal organizations and military commands, operating in 15 U.S. cities, track the flow of money to and from terrorist networks.
>
> Analysts who make sense of documents and conversations obtained by foreign and domestic spying share their judgment by publishing 50,000 intelligence reports each year—a volume so large that many are routinely ignored…
>
> "I'm not aware of any agency with the authority, responsibility or a process in place to coordinate all these interagency and commercial activities," [retired Army Lt. Gen. John R. Vines] said in an interview. "The complexity of this system defies description."
>
> The result, he added, is that it's impossible to tell whether the country is safer because of all this spending and all these activities. "Because it lacks a synchronizing process, it inevitably results in message dissonance, reduced effectiveness and waste," Vines said. "We consequently can't effectively assess whether it is making us more safe."

The effectiveness of this Rube Goldberg system of counter-terrorism intelligence was illustrated by the system's response to the so-called "underwear bomber":

> These were all clues to what would happen when a Nigerian named Umar Farouk Abdulmutallab left Yemen and eventually boarded a plane in Amsterdam bound for Detroit. But nobody put them together because, as officials would testify later, the system had gotten so big that the lines of responsibility had become hopelessly blurred.

[28] Robb, "Governor to Boston area: 'Shelter in Place' Here's a better way," *Resilient Communities*, April 20, 2013 <www.resilientcommunities.com>.

[29] Ben Kohlman, "System Disruption and Resilient Networks," *Disruptive Thinkers*, June 14, 2012 <disruptive-thinkers.blogspot.com>.

> "There are so many people involved here," NCTC Director Leiter told Congress.
>
> "Everyone had the dots to connect," DNI Blair explained to the lawmakers. "But I hadn't made it clear exactly who had primary responsibility."
>
> And so Abdulmutallab was able to step aboard Northwest Airlines Flight 253. As it descended toward Detroit, he allegedly tried to ignite explosives hidden in his underwear. It wasn't the very expensive, very large 9/11 enterprise that prevented disaster. It was a passenger who saw what he was doing and tackled him.[30]

So when your system for anticipating attacks upstream is virtually worthless, the "last mile" becomes monumentally important: having people downstream capable of recognizing and thwarting the attempt, and with the freedom to use their own discretion in stopping it, when it is actually made.

Our concern here is mainly with those things that are within the reach of individuals, small groups, and self-organized networks, as they are superempowered by the capabilities offered by networked platforms, and are forced of necessity to take on greater responsibility for their own endpoint or "last mile" defense in the face of states and other centralized systems that are increasingly hollowed out and brittle.

Our primary focus is not so much on decentralizing and hardening on a large-scale, society-wide basis, in keeping with some common policy. It is one of individuals, small communities and neighborhoods, business firms, utilities, etc., all doing what is within their own capabilities to minimize the danger of attack and mitigate its damage when it does occur, and taking advantage of whatever ways are feasible to network and federate with one another, in order to maximize their own long-term resilience.

The increasing technical capabilities of such networks and endpoints, combined with the increasing brittleness of the state and progressive hollowing out of its resource base, means there will likely be a general shift toward decentralizing and hardening, and of the state gradually retreating from the security field, perhaps on a pattern much like that of the late Roman Empire in the West. And it is likely that as these trends progress, and as hardened endpoints find larger and more complex ways of networking with one another, that at some point there will be "a transformation of quantity into quality" that will determine the character of the system as a whole. But the specifics will likely clarify themselves only in the emergent system.

Whatever the specifics of the networked system that emerges, the functional dynamics will probably follow some general principles outlined by security analyst Bruce Schneier. He argues for the importance of defense in depth, which basically means achieving security through more and cheaper redundant countermeasures at multiple echelons of defense, in preference to more expensive, harder countermeasures at one line of defense. Defense in depth is a way of dealing with the fact that a system is only as strong as its weakest link, by ensuring that there is no one single point of failure.[31]

Because of the possibility that networked attackers will simply shift their efforts to a weaker link in response to security measures, last mile flexibility takes on supreme importance for dealing with the unexpected—as opposed to attempting to anticipate and develop a "written policy" for every contingency ahead of time.

[30] John Hagel, "From Race Against the Machine to Race With the Machine," *Edge Perspectives with John Hagel*, August 22, 2012 <edgeperspectives.typepad.com>.

[31] Matthew Yglesias, "Too Much Information," *Matthew Yglesias*, December 28, 2009 <yglesias.thinkprogress.org>.

Along with defense in depth, Schneier recommends dynamic defense. Schneier's concepts of defense in depth and dynamic defense overlap considerably, since the single point of failure in a complex system is likely to be a preset, onesize-fits-all policy that includes a limited menu of responses. A dynamic defense is one "that can adapt quickly, … react quickly in several ways, and respond to whatever is happening at the time."[32]

This means that the person implementing security measures in the last mile is trusted with discretion to apply the rules to novel situations that were unforeseen by the people making the rules. A stereotyped, limited, inflexible menu of options is likely to result in the boots on the ground facing a situation which the rules don't cover, and being unable to respond effectively.[33]"People are dynamic, and better able to react to new threats and respond to new situations… "[34]They can "react to something they've never seen before: a new attack, a new threat, a new vulnerability."[35]Remember the old saw about why the Israelis won the 1967 war? The Egyptians literally obeyed the Soviet field manuals' instructions to "retreat into the heartland and wait for the first snowfall." The TSA has typically responded to attacks by formulating new policies that further limit the discretion of the people in direct contact with the situation. The static, inflexible kinds of policies that tend to predominate in bureaucratic organizations are the reason the work-to-rule strike is so devilishly effective: simply obeying the rules, literally, can bring an organization to a halt.

> Good security has people in charge. People are resilient. People can improvise. People can be creative. People can develop on-the-spot solutions… People are the strongest point in a security process. When a security system succeeds in the face of a new or coordinated or devastating attack, it's usually due to the efforts of people.[36]

John Robb's distinction between robustness and resilience is key to understanding Schneier's concept of defense in depth. A robust system is simply hardened at all points, so that it can absorb an attack with minimal damage. A resilient system, on the other hand, focuses on rapid response to containing and repairing damage where it has already occurred, or bypassing damaged links so that the system can continue to function. The former is far more costly—usually prohibitively so.

> A robust strategy means that you will continually make investments and decisions that reinforce your current position. Take steps that make yourself impervious to damage…
>
> Resilience means you focus on investments that provide you with an ability to adapt. To change based on the what the situation becomes. What do you do? You build systems that produce food, energy, water, and products. You build networks and communities. You invest in the future…

[32] Bruce Schneier, "The Terrorist Risk of Food Trucks," *Schneier on Security*, November 15, 2012 <www.schneier.com>.

[33] Dana Priest and William M. Arkin, "Top Secret America: A Hidden World, Growing Beyond Control," *Washington Post*, July 19, 2010 <projects.washingtonpost.com>.

[34] Schneier, Beyond Fear, pp. 104–105.

[35] *Ibid*., p. 122.

[36] *Ibid*., p. 123.

> Everyone needs robustness in the short term, to handle fast moving shocks. However, robustness is not a long term strategy. The only long term strategy is resilience. A resilience that invests in the ability to change and adapt. To meet threats and exploit opportunities that we… can't specifically anticipate.[37]

The relevance to our discussion above of empowering the last-mile network to respond rapidly to events that can't be planned for should be obvious. The normal tendency of bureaucratic organizations, Schneier says, is to over-react or respond over-specifically to particular events; this is directly analogous to hardening every point in an entire system against any potential attack, since it requires fully preparing against any possible contingency—while leaving the system paralyzed in the face of any attack the leadership *failed* to anticipate.[38]

Schneier mentions several components of an in-depth, dynamic defense. Among them is *reaction*, which is a "response directed against the attackers" in the form of taking countermeasures during the course of the attack.

> Doing this works because attacks are rarely instantaneous; more often, they involve multiple steps. Sometimes the best defense is to allow attackers to succeed a little bit, commit themselves, and only then to employ additional defenses… Defenders make use of the lag time between the initial attack and the attacker achieving his objective.

The most cost-effective use of defensive resources… is "[a]n adaptive defense that detects and responds to the attacker's first intermediate success, before he manages to do anything else." Reaction, as described here, is obviously relevant to the coordinated defense of an entire geographical area, in the face of incursions over a boundary line.

Another component of a dynamic defense is *mitigation*, "the portion of response that assumes failure and attempts to minimize the damage." In other words, "[t]he system fails securely… "[39] Although mitigation can be used in coordination with the other components of an active defense, it is also closely relevant to our discussion later in this chapter of passive defense: designing overall structure to be less lucrative as a target set and less vulnerable to attack.

Recovery is a form of mitigation, "but after the attack is over." The idea is to enable the system to survive the attack.[40] Redundant networks that can survive damage by rerouting traffic, infrastructures with easily replaceable or reparable components, and maintaining stockpiles of the most vital components, are all things that can contribute to recovery.

Finally, *counterattack* can be "a very effective form of defense."[41] Counterattack, strictly speaking, is about retaliation. But since an attack takes place over time, a counterattack may involve enemy forces currently in action, and it may involve attacks on the enemy's continued ability to conduct attacks in the future, the lines are blurred with response.

But whatever the character of the successor system, as stated above it will be emergent rather than imposed, and at best only dimly imaginable to us. So our theoretical speculations on the general nature of the system as a whole are at an end.

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[37] *Ibid*., p. 145.

[38] *Ibid*., p. 146.

[39] *Ibid*., p. 133.

[40] John Robb, "Are You Robust or Resilient?" *Resilient Communities*, March 7, 2012 <www.resilientcommunities.com>.

[41] Schneier, "Overreaction and Overly Specific Reactions to Rare Risks," *Schneier on Security*, August 3, 2012 <www.schneier.com>.

Of necessity the measures taken by small groups and localities—our main concern—will be primarily passive, or focus mainly on risk and damage mitigation.

IV. Passive Defense

We saw above that the organization of active defense against outside attack, in an age of what Eric Raymond called "insupportable complexity," will require defensive organizations that are decentralized and hardened. Empowered last-mile networks will be central to thwarting attacks.

But perhaps an even more important arena for decentralizing and hardening will be the overall society, insofar as it constitutes a target, to make its utilities, distribution chains, communications networks, etc., more robust and resilient.

As Vinay Gupta points out, the only feasible way to realistically minimize the threat of terrorism from superempowered individuals and small groups—suitcase nukes, biotech, etc.—is a totalitarian state beyond anything we've yet seen.[42] So ultimately, the only solution to terrorist threats may be a society with no targets big enough to be worth hitting.

Insupportable complexity is not simply an impediment to effective response to an attack. It is a force-multiplier for the attack itself. The more centralized an infrastructure, and the greater its complexity, the more damage the entire system— and its subcomponents—will suffer in an attack. The damage from an attack varies in proportion to the complexity of the system. When most of the functional resources of a system are located in the centralized infrastructure rather than in the endpoints, a large attack on the system will result in the end-points being submerged in the tsunami along with the entire system. There is no harbor or breakwater to absorb the force of the attack because the entire system is one big pool. And a localized collection of nodes cannot function effectively if the back of the centralized infrastructure is broken, because they don't contain the infrastructure they need to function autonomously. An attack on the system will take all the local nodes down with it.

In a distributed, scalable system, on the other hand, in which most functional resources are located in the endpoints on a modular basis, an attack on the infrastructure cannot destroy or incapacitate the endpoints. The basic functional infrastructure is replicated in each separate node, just as all the information in an image is encoded at each point of a hologram; so the only way to destroy all the endpoints is to attack them all separately.

The question is not how to organize a defense most effectively in an environment of unsupportable complexity, but how to organize society itself so that an active defense is less necessary, failures of the first line of defense are less catastrophic, and society can absorb a greater number of attacks without suffering unacceptable levels of damage. Rather than focusing on how to thwart an attack, the idea should be to make society less vulnerable to a successful attack when it does occur (along with the concurrent benefit of decentralization, which is to reduce the profile of the highest-profile targets and shift to a wider distribution of lowervalue targets in order to make an attack less profitable). That means basing security not only on the organization of active defense itself, but on the target structure of civil society. That means a larger number of lower-profile targets and an increase in the resilience and robustness of communications, power and other utility networks. When centralized security systems are no longer subsidized by taxes, society will reconfigure itself to make itself less dependent on them. As John Robb put it:

[42] *Ibid*., p. 170.

> Because we are unable to decapitate, outsmart, or defend ourselves against global guerrillas, naturally occurring events, and residual nationalism from causing cascades of failure throughout the global system, we need to learn to live with the threat they present… [This means] the adoption of a philosophy of resilience that ensures that when these events do occur … we can more easily survive their impact.
>
> By building resilience into the fabric of our daily life, our response to these threats will organically emerge in what seems like an effortless way. Without them, we will suffer the effects of dynamic shocks on a brittle system.[43]

We already discussed the general likelihood that the demonstrated brittleness and periodic breakdown of various centralized public infrastructures would either cause those infrastructures to decentralize and harden in self-defense, or cause those served by them to switch to decentralized and hardened alternatives.

Robb makes the same argument regarding passive security in particular. "The strikes of the future will be strategic,"

> pinpointing the systems we rely on, and they will leave entire sections of the country without energy and communications for protracted periods. But the frustration and economic pain that result will have a curious side effect: they will spur development of an entirely new, decentralized security system, one that devolves power and responsibility to a mix of local governments, private companies, and individuals…
>
> Security will become a function of where you live and whom you work for, much as health care is allocated already.[44]

Of course he tips his hat to the cliché, familiar to readers of cyberpunk dystopias, of the corporate super-rich living in gated communities. But more important (especially given that the corporate super-rich will likely be a dwindling presence when their means of rent extraction collapse),

> [m]embers of the middle class will follow, taking matters into their own hands by forming suburban collectives to share the costs of security… and shore up delivery of critical services. These "armored suburbs" will deploy and maintain backup generators and communications links; they will be patrolled by civilian police auxiliaries that have received corporate training and boast their own state-of-the-art emergency-response systems…
>
> … Cities, which will be the most acutely affected by the new disruptions, will move fastest to become self-reliant, drawing from a wellspring of new ideas the market will put forward. These will range from building-based solar systems by firms such as Energy Innovations to privatized disaster and counterterrorist responses… Corporate communications monopolies will crumble as cities build their own emergency wireless networks using simple products from companies such as Proxim…

[43] *Ibid*., p. 171.
[44] *Ibid*., p. 173.

> Perhaps the most important global shift will be the rise of grassroots action and cross-connected communities. Like the Internet, these new networks will develop slowly at first. After a brief period of exponential growth, however, they will quickly become all but ubiquitous and astonishingly powerful, perhaps as powerful as the networks arrayed against us.[45]

In the specific example of the electric power grid, Robb proposes to decentralize it and make it less dependent on central high-value nodes. To do this, he suggests making the power system two-way by "allow[ing] any individual on the network to become both a producer and a consumer" of electricity, and making it "plug-dumb" so that any small-scale local power generator can sell power to the system simply by plugging into it. The power companies should cease to be primarily the producers of power, and instead become managers of transmission networks connecting producers and consumers. The transmission networks should be opened to outside service providers that provide value-added services, like conditioning power and storing power locally for resiliency against blackouts.[46]

V. The Stateless Society as the Ultimate in Passive Defense

In some ways a stateless society represents an ideal in its lack of prominent targets. It's an example of what Schneier calls "compartmentalization," in his discussion of defense in depth. If rather than capturing a system as a whole by concentration of force at a strategic vulnerable point, it must capture each point separately, conquest becomes a lot more complicated and costly.[47]

Historian Tom Nevins pointed out that in contrast to the Aztecs, who despite an advanced state with centralized controls fell quickly to the Spanish, the Apache "successfully wrested control of North Mexico" from the Spanish. "By the late seventeenth century, the Spanish had lost effective control of northern Sonora and Chihuahua to the Apaches."[48] The Apache were able to stave off conquest for centuries because "[t]hey distributed political power and had very little centralization."[49]

The Apache fought wars on something like a p2p basis. An ad hoc, charismatic leader called the Nant'an, who had no institutional basis for his authority, would take up arms and lead by example. Geronimo, for example, simply declared war and was joined by volunteers. As described by Ori Brafman and Rod Beckstrom, based on their interview with Nevins:

> The idea was, "If Geronimo is taking arms, maybe it's a good idea. Geronimo's been right in the past, so it makes sense to fight alongside him." You wanted to follow Geronimo? You followed Geronimo. You didn't want to follow him? They you didn't. The power lay with each individual…
>
> The Nant'ans were crucial to the well-being of this open system, but decentralization affects more than just leadership. Because there was no capital and no central

[45] Vinay Gupta, "The Long Peace," *The Gupta Option* (2007) <guptaoption.com/2.long_peace.php >.
[46] Robb, *Brave New War*, p. 183.
[47] *Ibid*., p. 185.
[48] *Ibid*., pp. 185–188.
[49] *Ibid*., p. 175.

> command post, Apache decisions were made all over the place. A raid on a Spanish settlement, for example, could be conceived in one place, organized in another, and carried on in yet another. You never knew where the Apaches would be coming from. In one sense, there was no place where important decisions were made, and in another sense, decisions were made by everybody everywhere.[50]

When the Spanish killed or captured a Nant'an, a new one emerged. The conventional strategy for defeating a state failed in the case of the Apaches "because no one person was essential to the overall well-being of Apache society."[51] The Spanish attempt at conquest failed because there was no one person or node whose capture would effectively disable the system, and no central point of control with the authority to surrender on behalf of the Apache nation.

A post-state society, similarly, would have no central node whose capture would lead to the incapacitation of the whole. Simply put, there would be no one to surrender on behalf of an entire country. Any would-be conqueror would have to conquer each separate part of a country, one at a time.

> … a society in which power is decentralized lacks a command center whose defeat or surrender can deliver the entire nation into bondage. For example, during the American Revolution the British focused their energies on conquering Philadelphia, at that time the nominal capital of the United States, on the assumption that once the capital had fallen the rest of the country would be theirs as well. What the British failed to realize was that the United States was a loose-knit confederation, not a centralized nation-state, and the government in Philadelphia had almost no authority. When Philadelphia fell, the rest of the country went about its business as usual; Americans were not accustomed to living their lives according to directives from Philadelphia, and so the British troops ended up simply sitting uselessly in the occupied capital, achieving nothing. Hence Benjamin Franklin, when he heard that the British army had captured Philadelphia, is said to have replied, "Nay, I think Philadelphia has captured the British army."[52]

VI. Disaster Relief

The Hobbesian Myth of "War of All Against All" and Elite Panic. As Rebecca Solnit points out, after large-scale disasters the media are typically flooded with stories of looting and senseless violence by ordinary people. Almost none of the stories is true.

> While I've been working on this project, my running summary for my friends has been that what happens in disasters demonstrates everything an anarchist ever wanted to believe about the triumph of civil society and the failure of institutional authority. It does—this alternative information is truly radical…

[50] Schneier, *Beyond Fear*, p. 105.

[51] Nevins interview with by Ori Brafman and Rod A. Beckstrom, quoted in Brafman and Beckstrom, *The Starfish and the Spider: The Unstoppable Power of Leaderless Organizations* (Portfolio, 2006), p. 18.

[52] *Ibid*., p. 19.

> There was this moment of being overwhelmed by this hysterical belief in all these Hobbesian rumors—about rape, child rape, murder, general mayhem, and even at one point cannibalism, like something out of Bosch or Goya—but I was pretty sure it was a pile of lies.

Solnit argues that these urban legends reflect a culture of "elite panic":

> AT One of the most interesting ideas in the book is the concept of "elite panic"—the way that elites, during disasters and their aftermath, imagine that the public is not only *in*danger but also a *source* of danger. You show in case after case how elites respond in destructive ways, from withholding essential information, to blocking citizen relief efforts, to protecting property instead of people. As you write in the book, "there are grounds for fear of a coherent insurgent public, not just an overwrought, savage one."
>
> RS … From the beginning of the field in the 1950s to the present, the major sociologists of disaster… proceeding in the most cautious, methodical, and clearly attempting-to-be-politically-neutral way of social scientists, arrived via their research at this enormous confidence in human nature and deep critique of institutional authority. It's quite remarkable.
>
> Elites tend to believe in a venal, selfish, and essentially monstrous version of human nature, which I sometimes think is their own human nature. I mean, people don't become incredibly wealthy and powerful by being angelic, necessarily. They believe that only their power keeps the rest of us in line and that when it somehow shrinks away, our seething violence will rise to the surface—that was *very* clear in Katrina. Timothy Garton Ash and Maureen Dowd and all these other people immediately jumped on the bandwagon and started writing commentaries based on the assumption that the rumors of mass violence during Katrina were true. A lot of people have never understood that the rumors were dispelled and that those things didn't actually happen; it's tragic…
>
> AT So on the one hand there are people responding in these moments of crisis and organizing themselves, helping each other, and, on the other, there are power elites, who sometimes, though not always, sabotage grassroots efforts because, as you say at one point, the very existence of such efforts is taken to represent the failure of authorities to rise to the occasion—it's better to quash such efforts than to appear incompetent. The way you explore the various motivations of the official power structure for sabotaging people's attempts to self-organize was a very interesting element of the book…
>
> RS Not all authorities respond the same way. But you can see what you're talking about happening right after the 1906 earthquake. San Franciscans formed these community street kitchens. You weren't allowed to have a fire indoors because the risk of setting your house, and thereby your neighborhood, on fire was too great—if you had a house, that is. People responded with enormous humor and resourcefulness by creating these kitchens to feed the neighborhood. Butchers, dairymen, bakers, etcetera were giving away food for free. It was like a Paris Commune dream of a

> mutual-aid society. At a certain point, authorities decided that these kitchens would encourage freeloading and became obsessed with the fear that people would double dip. So they set up this kind of ration system and turned a horizontal model of mutual aid—where I'm helping you but you're helping me—into a vertical model of charity where I have and you lack and I am giving to you…
>
> Part of the stereotypical image is that we're either wolves or we're sheep. We're either devouring babies raw and tearing up grandmothers with our bare hands, or we're helpless and we panic and mill around like idiots in need of Charlton Heston men in uniforms with badges to lead us. I think we're neither, and the evidence bears that out.[53]

Hurricane Katrina. Most people are familiar with the mainstream news media's framing of the sheer incompentence and disorganization of federal disaster relief efforts after Hurricane Katrina, even if they don't realize the sheer *scale* of incompetence. But what they're not familiar with is the hostility of government at all levels to attempts by New Orleans residents to mitigate the disaster to themselves, and to outside relief efforts organized without government authorization. Not only did the state not support self-organized relief efforts after Katrina—it actively suppressed them.

Government may have been lax about such things as evacuating the population or getting the enormous stockpiles of trailers to where they were needed. But it was comparatively effective in directing resources to its genuine priorities: protecting food and clean water supplies in abandoned stores from "looting" by the hungry and thirsty, and maintaining armed checkpoints to turn away refugees attempting to escape the city.

Police put a great deal of effort in deterring "looters" from accessing and distributing supplies of safe food and water—almost all of which were rapidly spoiling with the power off, and which retailers would have to write off as a loss anyw— with a shoot-to-kill policy.[54]

While uniformed "public safety officers" dropped the ball, the real heroes of Katrina—almost completely ignored by media coverage—were the ordinary people who made extraordinary efforts to help one another.

> What you will not see, but what we witnessed, were the real heroes and sheroes of the hurricane relief effort: the working class of New Orleans.
>
> The maintenance workers who used a forklift to carry the sick and disabled. The engineers who rigged, nurtured and kept the generators running. The electricians who improvised thick extension cords stretching over blocks to share the little electricity we had in order to free cars stuck on rooftop parking lots. Nurses who took over for mechanical ventilators and spent many hours on end manually forcing air into the lungs of unconscious patients to keep them alive. Doormen who rescued folks stuck in elevators. Refinery workers who broke into boat yards, "stealing" boats to rescue their neighbors clinging to their roofs in flood waters. Mechanics who helped hotwire any car that could be found to ferry people out of the city. And the food service workers who scoured the commercial kitchens, improvising communal meals for hundreds of those stranded.

[53] *Ibid*., pp. 20–21.
[54] *Ibid*., p. 21.

> Most of these workers had lost their homes and had not heard from members of their families. Yet they stayed and provided the only infrastructure for the 20 percent of New Orleans that was not under water.[55]

Ordinary residents and tourists carried out their self-organized rescue efforts in the face, not only of official indifference, but of official hostility.

Law enforcement in many areas actually responded to self-organized evacuation attempts by turning people on foot away from bridges at gunpoint.

> As we approached the bridge, armed sheriffs formed a line across the foot of the bridge. Before we were close enough to speak, they began firing their weapons over our heads. This sent the crowd fleeing in various directions…
>
> We questioned why we couldn't cross the bridge anyway, especially as there was little traffic on the six-lane highway. They responded that the West Bank was not going to become New Orleans, and there would be no Superdomes in their city. These were code words for: if you are poor and Black, you are not crossing the Mississippi River, and you are not getting out of New Orleans. * * *
>
> All day long, we saw other families, individuals and groups make the same trip up the incline in an attempt to cross the bridge, only to be turned away—some chased away with gunfire, others simply told no, others verbally berated and humiliated. Thousands of New Orleaners were prevented and prohibited from self-evacuating the city on foot. * * *
>
> … Just as dusk set in, a sheriff showed up, jumped out of his patrol vehicle, aimed his gun at our faces and screamed, "Get off the fucking freeway." A helicopter arrived and used the wind from its blades to blow away our flimsy structures. As we retreated, the sheriff loaded up his truck with our food and water.[56]

Police also invaded self-organized neighborhood shelters with the demeanor of soldiers securing a neighborhood in occupied enemy country. Allen "Sarge" Smith, a Gulf War veteran who remembered his school being used as a neighborhood shelter after Hurricane Betsy in 1965, organized a group of forty residents on the second and third floors of the Samuel J. Green school. Among them were housebound elderly rescued from their homes. The residents were maintained in relative comfort with canned food and bottled water, blankets and a radio, and organized board games to pass the time. In addition, Smith and other volunteers made regular trips to take food and water to elderly residents still in their homes.

> None of that mattered to the officers who finally showed up, with the tact typical of unformed gun-toting thugs everywhere, to evacuate the building.
>
> A group of armed officers entered the school, demanding that everyone leave. The group included a couple of sheriff's deputies from New Mexico wielding M-16s, New Orleans police officers and some volunteers…

[55] Roderick Long, "Defending a Free Nation," *Formulations*, Winter 1994–95 <www.freenation.org>.

[56] Astra Taylor, "Rebecca Solnit," *BOMB* 109/Fall 2009 <bombsite.com>.

> "You have to leave now," an officer yelled at no one in particular. "I can't believe you had this child in here like this. Let's go."…
>
> When Anthion began to explain how the group had sustained elderly people in the community, the officer yelled: "Shut up. I don't want to hear you talking [expletive] no more."…
>
> "The thing about this here is they are embarrassed," Sarge said. "They all know we did a better job than [the shelters] did. We took care of ourselves. We survived."[57]

Unofficial attempts at evacuation or aid organized from outside met with similar official hostility… New Orleans residents were prosecuted for commandeering empty schoolbuses from fleets of such idle vehicles to evacuate refugees ahead of the storm—something that apparently never occurred to government to do.

> Malik Rahim addressed the audience with an analysis and an attitude that the mainstream corporate media refuses to transmit across its airwaves. He pointed out how Black doctors had been turned away from the devastated areas and how surrounding parishes had refused to help the predominantly poor and Black communities of New Orleans. He pointed out the hypocrisy of the state, which employed a shoot-to-kill order for young black men looking for food, but permitted armed, white vigilantes to roam the streets of New Orleans. He revealed that there are many so-called "looters" who are still in jail for attempting to commandeer empty buses and transport people out of New Orleans. Many of these unjustly imprisoned individuals have yet to see their day in court.[58]

Many, many outside self-organized aid operations attempting to enter the city were turned away at gunpoint, just like residents attempting to leave.[59]

Scott Crow of the Common Ground collective, in his book *Black Flags and Windmills*, describes in considerable detail his on-the-ground experiences of the efficacy of self-organized relief, versus active impediments by the "authorities." To begin with, many areas were restricted—despite the unwillingness of the military to provide any help itself—by military blockade.[60] As the anarchist Common Ground relief effort expanded its activities in New Orleans, police "became increasingly volatile," constantly harassing their distribution center and clinic, and pulling over volunteers delivering supplies to accuse them of everything "from stealing supplies to running guns… All of us were subject to having guns randomly drawn on us, and threatened with death." Crow recounts one incident, while delivering supplies on foot door-to-door to shut-ins, found himself "lying face down on the hot pavement in the middle of the street with guns pointed while they yelled for me to 'get the fuck down.'" After interrogating him and accusing him of stealing the supplies, they sped off—presumably to terrorize someone else.[61] This—being forced face-down at gunpoint and accused of stealing—was a common experience for volunteers.[62] Police periodically raiding

[57] Larry Bradshaw and Lorrie Beth Slonsky, "Trapped in New Orleans," *Counterpunch*, September 6, 2005.

[58] Bradshaw and Slonsky, "Trapped in New Orleans."

[59] Bradshaw and Slonsky, "Trapped in New Orleans."

[60] Kelly Brewington, "A do-it-ourselves shelter shines," *Baltimore Sun*, September 7, 2005 <www.baltimoresun.com>.

[61] "ANSWER: October 23: Katrina survivors struggle for justice," *A.N.S.W.E.R. Coalition*, October 24, 2005 <www2.answercoalition.org>; Jeff Taylor, "Jabbor Gibson, American Hero," *Reason*, September 2, 2005 <reason.com>

[62] "Hurricane Katrina Timeline," *ImpeachBush.tv* <www.impeachbush.tv>.

the distribution center—with drawn weapons and helicopters—referred to it as a "compound" or "fortress," and exhibited out-of-control alpha dog behavior that put volunteers in genuine fear for their lives.[63] ICE—Immigrations and Customs Enforcement—was also part of the mix, pulling over vehicles distributing supplies with a cheery "freeze, motherfucker!"—and the de rigeur accusations of stealing from FEMA and the Red Cross (as if FEMA or the Red Cross had any useful supplies in their possession).[64]

At its most blind and bureaucratic, FEMA maintained a jail—"Camp Greyhound"—in an abandoned bus station, where they dumped hundreds or thousands of black and Latino men selected mostly at random for being out at the wrong time, and then left them without food, water, sanitation or shelter.[65]

On the other hand, as usual, the community's self-organized effort was miles ahead of official relief efforts. Here's an early communique from the Common Ground collective:

> Now picture the community deciding that it would not be broken down by this disaster. People in this community in Algiers New Orleans decided to rebuild itself, when society and government forgot them…
>
> This is not just relief, but the rebuilding of infrastructure within their means and ways…
>
> But who will take out the garbage?
>
> We will. The people of this community with the support and solidarity from the outside. We will deliver food, water and medical aid. We will watch and protect each other. We will secure, aid and reconnect the bonds the long history of disasters of neglect and abandonment have brought.
>
> We have bicycles to transport us, deliver food, water and pick up garbage.
>
> We have a first aid station set up.
>
> We have communications with those outside of this community.
>
> As the Black Panther Party used to say "We doin' for ourselves… " with the support of those on the outside.[66]

The distribution hub, which started out with five volunteers, had grown to seventy by late September and over 120 in October. The distro center and clinic together served hundreds of people, filled with pallets stacked high with bottled water, canned food, diapers and hygiene kits. In addition to the clinic, the project expanded to include a media center, prisoner advocacy and legal defense. It was able to function so effectively because of its "flexibility. There was no command hierarchy that information had to go through, followed by useless paperwork and arbitrary rules. Often this meant that people would take up a project simply because they saw the need."[67] Their public appeals resulted in donations (with touching letters) from seniors on

[63] Scott Crow, *Black Flags and Windmills: Hope, Anarchy and the Common Ground Collective* (Oakland: PM Press, 2011), p. 117

[64] *Ibid*., pp. 107–108.

[65] *Ibid*. pp. 117–118.

[66] *Ibid*., pp. 118–119.

[67] *Ibid*. p. 126.

limited incomes, and elementary, high school and college student gtroups—bringing in, by mid-October, almost $100,000.[68]

Meanwhile FEMA's efforts consisted almost entirely of sending bureaucrats to process the paperwork for federal assistance applications that would take months or years to go through—in some cases expecting elderly people with no electricity or computers to apply for aid online. In the end, the FEMA center wound up unofficially directing people to Common Ground for real help. In fact at one point the regional head of FEMA came to the Common Ground clinic (with her armed escort) for minor medical attention in preference to the Red Cross or military doctors.[69]

Common Ground also organized a Copwatch group to document law enforcement abuse and harassment on video and spread news of it through alternative media outside New Orleans. Naturally cops responded with verbal abuse and threats; in one case they abucted someone filming their harassment, and drove around dark streets threatening to kill him and "drop him in the river" if he didn't stop—after which they released him.[70]

One of the most important things the Common Ground collective, an outside volunteer effort made up mostly of white radicals, did was to respect the preexisting network of relationships and local leadership in the black community, and provide the help they asked for rather than trying to run the show for them. Common Ground was one part of a much larger composite of local efforts.[71]

The New Orleans pattern is typical in disasters throughout history, according to Jesse Walker. Self-organized relief and recovery efforts have typically dwarfed state contributions, and "the vast majority of the rescues [were] accomplished by the real first responders—the victims themselves." Despite the popular image of looting and assault and a generally Hobbesian reversion to the "war of all against all," the tendency toward cooperation and mutual aid also generally dwarfs antisocial behavior. "After the cataclysm," Walker wrote, "social bonds will strengthen, volunteerism will explode, violence will be rare, looting will appear only under exceptional circumstances… "[72]

Keith McHenry, a participant in the Food Not Bombs operation in New Orleans after Hurricane Katrina, describes his experience at the site:

> I helped coordinate the Food Not Bombs relief effort after Katrina. The out pouring of support was wonderful. Our office was flooded with calls and emails from Food Not Bombs volunteers and supporters wanting to help. I had about four hours of sleep each night for the first eight months after Katrina. As you may know we organized kitchens in about 20 cities and worked closely with Common Ground in setting up kitchens in New Orleans. Chuck Munson helped us by listing our www.foodnotbombs.net/katrina.html site on his website.[73]

Hurricane Sandy. The same issues emerged, in almost identical form, during Hurricane Sandy's impact on the east coast of the United States. But as with Katrina, horizontal, self-organized relief efforts went a long way toward filling the void left by official failure. The

[68] *Ibid*. p. 139.
[69] *Ibid*., pp. 131–132.
[70] *Ibid*. p. 144.
[71] *Ibid*. p. 146.
[72] *Ibid*. pp. 166–147.
[73] *Ibid*. p. 139.

"Occupy Sandy" relief effort was a project of Occupy Wall Street especially active in the greater New York City area.

> When Hurricane Sandy brought thrashing winds and a two-story surge of water to the city, Occupy activists mobilized to assemble a relief effort. According to volunteer Shlomo Adam Roth, 34, "We got on the ground in the Rockaways when one of the blocks was still burning."
>
> As every organizer involved will be quick to remind you, Occupy does not see itself as an organization. It's a network, a swarm. In the wake of the storm, this decentralized, highly flexible structure proved to be a strength. While huge bureaucratic organizations like the Red Cross and overwhelmed government agencies like FEMA took days to reach some neighborhoods, Occupy made use of Facebook and Twitter to channel volunteers and supplies to existing local institutions like the activist group Good Old Lower East Side, churches, a mosque in Coney Island and ad hoc citizen relief groups that sprang up across the city.[74]

A writer at Huffington Post described its operation in the Red Hook neighborhood of Brooklyn:

> The flagpole had become a meeting place for Hurricane Sandy volunteers, and earlier Thursday, it served as a rallying center for people in the hurricane-battered neighborhood to request food, clothing and other necessities. [Conor] Reed said he learned some elderly people had been stuck on higher floors of their buildings without power or running water, marooned by elevators that weren't working.
>
> "Since then we've been walking up and down stairs, providing care packages of food and flashlights and bottled water," Reed said.
>
> Reed and others have been volunteering in Red Hook since Sandy hit, mostly organized via "Occupy Sandy," a now burgeoning offshoot of the Occupy Wall Street movement, websites like Recovers.org, a social hub for organizing volunteers online, and word of mouth.
>
> Occupy Sandy volunteers aim to help smaller communities, where government relief organizations may not have arrived, Reed said.
>
> "Occupy has gone from general protest work to now direct community support," Reed said. "What we're trying to do is build communities, not just charity."
>
> A few blocks from the flagpole, the offices of the Red Hook Initiative, a community non-profit, was a bustling center for people needing clothing and hot meals. Boxes of clothes lined the street nearby. Inside, tables were stocked high with boxes of donated food. There were hand-written signs announcing the next hot meals and flagpole meetings…
>
> "We've been getting tons of donations. This is all donations in here," [Lisa] Sikorski said, pointing at tables. "We also gave away a ton yesterday. Stuff has gone out to

[74] *Ibid*., p. 135.

> the Rockaways, Sunset Park, Coney Island. There are people coming in with rolling carts, school communities have come up with truckloads of stuff and unloaded it. This is all community-driven donation right now, all of it."
>
> Federal Emergency Management Agency workers were were nowhere to be seen, Sikorski said. She said she was told they may have been nearby Thursday afternoon. "They're not here," she said. "I don't see them."
>
> … The email [Catherine McBride] sent to friends Thursday morning asking for donations got an immediate and overwhelming response.
>
> "I think the key is connecting people to a tangible thing, because everyone wants to help out," McBride said. "Just telling people to go and do this. And then they'll do it."
>
> More Occupy-organized volunteer operations have been set up in other badly damaged neighborhoods, including Sunset Park, Coney Island and the Rockaways.
>
> Justin Wedes, an Occupy organizer, said the response from the Occupy movement has been "incredible," and Occupy Sandy groups were active in all five boroughs.
>
> "We already have dozens of organizers working in hubs, working out of homes, mobilizing hundreds of volunteers," Wedes said. "We've worked with local community organizations, Recovers.org, and this really shows that communities do band together, reach out, and support each other."
>
> The Occupy Sandy movement has already received $10,000 in donations via the group's Inter-Occupy website, Wedes said, and has teamed up with climate organization 350.org for a major relief effort this Saturday. New volunteers join every hour, he added.
>
> "It's a pretty diffuse operation here," Wedes said. "But it's reaching thousands."[75]

In the weeks after Sandy hundreds of volunteers showed up every day at two distribution sites Occupy Sandy set up in two Brooklyn churches, where they

> cook hot meals for the afflicted and to sort through a medieval marketplace of donated blankets, clothes and food. There is an Occupy motor pool of borrowed cars and pickup trucks that ferries volunteers to ravaged areas. An Occupy weatherman sits at his computer and issues regular forecasts. Occupy construction teams and medical committees have been formed.
>
> Managing it all is an ad hoc group of tech-savvy Occupy members who spend their days with laptops on their knees, creating Google documents with action points and flow charts, and posting notes on Facebook that range from the sober ("Adobo Medical Center in Red Hook needs an 8,000 watt generator AS SOON AS POSSIBLE") to the endearingly hilarious ("We will be treating anyone affected by Sandy, FREE of charge, with ear acupuncture this Monday"). While the local tech team sleeps, a shadow corps in London works off-hours to update the Twitter feed and to maintain the intranet. Some enterprising Occupiers have even set up a wedding registry on

[75] Jesse Walker, "Nightmare in New Orleans," *Reason*, September 7, 2005 <reason.com>.

> Amazon.com, with a wish list of necessities for victims of the storm; so far, items totaling more than $100,000—water pumps and Sawzall saw kits—have been ordered.
>
> "It's a laterally organized rapid-response team," said Ethan Gould, a freelance graphic artist and a first-time member of Occupy. Mr. Gould's experience illustrates the effort's grass-roots ethos. He joined up on Nov. 3 and by the following afternoon had already been appointed as a co-coordinator at one of the "distro" (distribution) sites.
>
> OCCUPY SANDY was initially the work of a half-dozen veterans of Zuccotti Park who, on the Tuesday following the storm, made their way to public housing projects in the Rockaways and Red Hook, Brooklyn, delivering flashlights and trays of hot lasagna to residents neglected by the government. They arranged for vans to help some people relocate into shelters. When they returned to civilization, they spent the night with their extra bags of stuff at St. Jacobi Evangelical Lutheran Church in Sunset Park, Brooklyn.
>
> "They asked if they could crash here," said Juan-Carlos Ruiz, a community organizer there who knew the Occupiers from their previous endeavors. "Those few bags became this enormous organic operation. It's evidence that when official channels fail, other parts of society respond."[76]

In one way, Occupy Sandy is much different from self-organized relief efforts in New Orleans after Katrina: federal and local law enforcement, and official relief coordinators like FEMA, are far less hostile.

> Being among the first to move made Occupy a vital part of the city's hurricane relief infrastructure. As a result, this radical nonstate movement finds itself in the unlikely position of coordinating with government institutions it might otherwise be in conflict with. The group is now in contact with a wide range of agencies, and organizers said they participated in two recent conference calls that included FEMA. The agency's news desk did not respond to requests for confirmation from TIME.
>
> On the ground in the city's disaster zones, the urgency of the situation has yielded some unlikely cooperation. This dynamic was apparent at an Occupy hub in a community center called You Are Not Alone in the Rockaways on Saturday. Amid the National Guard vehicles rumbling through the mud and the acrid smell of mold and ash, Tamara Crifasi, 30, a television producer, was frenetically coordinating deliveries and volunteer flows. On the phone, she gave directions to someone looking for the center: "It's Beach 113, after the bombed-out buildings."
>
> Crifasi said members of the Red Cross had visited the day before. "I think they were trying to see how our operation was working," she said. The National Guard has provided security when volunteers lock up the building at night and has even directed traffic for them, she added, saying, "They haven't necessarily been coming and giving us a hard time, which is sometimes what people expect."
>
> Nowhere has cooperation been closer than in the unique case of Red Hook, where the joint Occupy-government relief point was set up on Nov. 11. That center was the

[76] Keith McHenry, personal email, December 25, 2011.

> result of an unusual 30-person meeting that reportedly included four members of the National Guard, a police officer and Andrew Olsen from the CAU and took place in Occupier Desmarais' Red Hook loft on Saturday.[77]

Based on her experiences with Occupy Sandy, Willow Brugh and her colleagues have a lot to say about the superior effectiveness of open-source disaster relief efforts in directing aid to where it needs to go. The basic organization was stigmergic

> Tasks and needs often emerged from community response centers, small and distributed throughout a neighborhood in places conducive to small-scale organization and distribution, places which are also already well known and loved often schools and churches. While the available resources are fewer than in a large FEMA and Red Cross setup, the exactness with which they are used is far more precise.[78]
>
> After going through the intake node, incoming participants of OS self-assigned themselves to nodes based on current network needs and their individual skills. This responsibility in self-assignment of tasks and time slots is commonly seen in cooperative houses and businesses, and emerged in OS systems as well. The group cooperating sees what tasks need to be done, lists them, and self-assigns based on skill and need. When a specific participant might generally love cooking and be free on a Tuesday, perhaps the only open slot on Tuesday is delivering boxes. In the commitment to functioning response, this box-delivering task is performed by the person who is good at cooking. If a shipping professional arrives ready to work, they might take over the shift of someone less skilled who had taken on the role out of immediate need, and that person might go on to tear out moldy insulation from houses. This emergent macro-task completion is in direct contrast to the time-consuming assignment of individuals to positions in hierarchical organizations, where only one position should be held at a time by an individual, and decisions from higher up in the hierarchy try to intentionally create working teams.
>
> One of the things most baffling to hierarchically socialized individuals about OWS, OS, etc is the idea of decision making. Within these groups, there is rarely what would be viewed as a "decision-making process" from a hierarchical organization, but rather a process of individual or small group proposal, followed by indicating potential coordination and collaboration. IE, rarely a "should we do this" but rather a "I am doing this, would anyone else like to join?" or "I am doing this, and would benefit from the following sorts of help." This meta-level stigmergic organization meant everyone focused on what was of most interest to them, while using the low transaction costs of communication and informal horizontal ties to keep others' needs in mind and steer useful resources to them or help them make connections as they come along.[79]

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[77] Jared Malsin, "Best of Enemies: Why Occupy Activists Are Working with New York City's Government," *Time*, November 13, 2012 <nation.time.com>.

[78] Lucas Kavner, "Occupy Sandy, Occupy Wall Street Offshoot, Amasses New York Volunteers," *Huffington Post*, November 1, 2012 <www.huffingtonpost.com>.

[79] Alan Feuer, "Occupy Sandy: A Movement Moves to Relief," *New York Times*, November 9, 2012 <www.nytimes.com

In this system, collective meetings acted as a feedback mechanism.

> Updates about activities were proffered, along with potential upcoming actions, and the group would discuss any questions which arose. Such sessions were sometimes single-tracked, to be sure everyone got a say, other times break-out groups formed so a topic could be focused on by those most interested or affected by it. At the end of each round, a "vote" of sorts would take place via hand-signals when in person or via number-signaling when via conference line. Responses could fall into 'agree,' 'disagree,' 'abstain,' or 'block.' "Where well designed and implemented, these algorithms can help to ensure that no single member of the group wields undue power, while still facilitating effective decision making." If sufficient 'no's appeared, further discussion was needed, and the proposing group was expected to alter their course of action. If even one 'block' appeared, it indicated adamant resistance from another participant necessary to be further explored. This is different from a town meeting because it is focused on feedback loops around actions, rather than legislation to be externally executed.
>
> In this, we see the "leader-full" versus "leaderless" component play out, with every person acting as both actor and decider as one member of a larger group. hile in the end, "decisions" are still referred to, this drastic distinction in process of a network with feedback loops versus a set of "decision makers" merits this level of detail, and must be remembered when considering actions taken and choices made.
>
> Rather than be dependent upon one person or set of people to decree how things should work, people embed assumptions and expectations into protocols, which are visible to those who know, through orientation or intuition, how to look. Much attention was paid in OS to orienting people about different nodes, and in improving orientation practices through continuous iteration and updating. This commitment to selfimprovement and clarity helped to cull and curate information, rather than simply appending additions on as more knowledge was gained through iteration or external remark.
>
> Much attention has been paid to the technical abilities of OS, but little has been paid to the way in which OS participants not only drew upon the technical platforms, but also upon the cultural methods and practices of organizing applied in free, libre, and open source software (FLOSS). In these, issues with a software program can be filed by anyone, which anyone else can see and, hopefully, patch. These changes are reviewed for appropriateness before being accepted back into the core code base, and the entire change and its metadata is logged in a changelog. For OS, it wasn't software that was being 'patched' and updated, but rather the protocols of interaction and working practices of the distributed network of nodes. This history of changes in documentation could later be perused to better understand changes in assumptions and trajectory, if people had questions as to why a method of practice was the way it was (or if an idea or change had been attempted before). This dynamic network is distinctly different from bureaucratic rules in that any person interacting with the system structure was encouraged to examine tweak that structure. In a bureaucratic system, rules and processes are set top-down, and are revised only when a

> decision-maker experiences ill effects. OS's iterative approach not only allowed, but also encouraged an evolutionary process, with detrimental practices being critiqued and abandoned, and new practices being attempted in an intentional way.[80]

In contrast to centralized institutions like government agencies and establishment charities, whose primary capability was moving large quantities of material through a few centralized trunk pipelines, Occupy Sandy's advantage lay in its ability to match up resources with needs at the retail level.

> Many problems in response are last-mile problems… [W]hile formal response might get resources into an area, it can be infinitely more difficult for those resources to get to recipients within the time needed. In contrast, OS's structure was exceptional at needs assessment and last-mile delivery, among other things.[81]

[80] Malsin, "Best of Enemies."

[81] Willow Brugh, Galit Sorokin, Yaneer Bar-Yam. "Combining Distributed and Centralized Systems in Humanitarian Aid and Disaster Response." Unpublished draft for Complexity, New England Complex Systems Institute (2015), p. 9. Quotes and pagination are from earlier version hosted (with permission) at <drive.google.com>. The latest version is "Combining Distributed and Centralized Systems in Disaster Response." <blog.bl00cyb.org>.

Appendix. Case Study in Networked Resistance: From Wikileaks to Occupy—and Beyond

Introduction: On the Post-1994 Wave of Horizontal Movements

David Graeber, an anarchist who played a major part in the formation of the Occupy movement, puts the networked movements of the 1990s and 2000s in context:

> In recent years we have seen a kind of continual series of tiny '68s… After the Zapatista world revolution—they called it the Fourth World War—began in '94, such mini'68s began happening so thick and fast the process almost seemed to have become institutionalized: Seattle, Genoa, Cancun, Quebec, Hong Kong… And insofar as it was indeed institutionalized, by global networks the Zapatistas had helped set up, it was on the basis of a kind of small-a anarchism based on principles of decentralized direct democracy and direct action. The prospect of facing a genuine global democratic movement seems to have so frightened the US authorities, in particular, that they went into veritable panic mode. There is of course a traditional antidote to the threat of mass mobilization from below. You start a war. It doesn't really matter who the war is against. The point is just to have one; preferably, on as wide a scale as possible. In this case the US government had the extraordinary advantage of a genuine pretext—a ragtag crew of hitherto largely ineffective right-wing Islamists who, for once in history, had attempted a wildly ambitious terrorist scheme and actually pulled it off. Rather than simply track down those responsible, the US began throwing billions of dollars of armament at anything in sight. Ten years later, the resulting paroxysm of imperial overstretch appears to have undermined the very basis of the American Empire. What we are now witnessing is the process of that empire's collapse.[1]

Immanuel Wallerstein, similarly, calls the 1994 EZLN uprising "the beginning of the counteroffensive of the world left against the relatively short-lived successes of the world right between the 1970s and 1994… What the Zapatistas did was to remind them (and the world left) that there was indeed an alternative… " The uprising "paved the way to the successful protests at Seattle in 1999 and then elsewhere… "[2]

The rise of networked, horizontal resistance movements has given rise to a growing dichotomy between the old-line, verticalist Institutional Left and the new autonomous Left. As described by Cristina Flesher Fominaya,

[1] *Ibid*., pp. 11–12.
[2] *Ibid*., pp. 13–14.

> [t]he classic organizational model of the Institutional Left is *representative*, with vertical structures… , decision-making through a voting system or through negotiations between representatives, and a clear division of labour…
>
> … The Institutional Left model defends the transformation of society through its institutions, either by controlling them or by influencing them…
>
> The autonomous model, for its part rejects representative democracy and majority rule; instead, it defends a participatory model, based on direct democracy and self-governance, with horizontal (non-hierarchical structures, decision-making through consensus…
>
> The network form of organization and communication allows for the integration and interaction of multiple issues and identities… The networks are 'biodegradable', dissolving and regenerating into new forms of organization and action…[3]

The horizontal movements of the last few decades differ from the revolutionary movements of the 19th and early 20th centuries, among other ways, in that the methods of struggle are becoming more and more prefigurative—in Marina Sitrin's words, movements

> that are creating the future in their present social relationships. Unlike past movements, social change isn't deferred to a later date by demanding reform from the state, or by taking state power and eventually, instituting these reforms… [T]heir strategy for the creation of a new society is not grounded in either state dependency or the taking of power to create another state. Their intention is, to borrow John Holloway's phrase, to change the world without taking power.[4]

As Molly Sauter says of DDoS attacks in particular, one of the functions of prefigurative activity is constitutive. To the extent that the networked resistance movements of the past twenty years are prefigurative, their mode of organization is as important for the ways it creates a sense of subjective identity and habitual ways of doing things that prefigure the successor society—the ways it constitutes the successor society as a self-conscious force—as for the influence it has on the institutions of the existing society. Sauter, borrowing a James Scott quote on "hidden transcripts" from *Domination and the Art of Resistance*, writes that DDoS attacks create a common medium in which participants "recognize the full extent to which their claims, their dreams, their anger is shared by other subordinates with whom they have not been in direct touch."[5]

Michael Hardt and Antonio Negri, in an extended passage, explain that the purpose of today's movements is not to the conquest of power but exodus from it:

> We should note… that some of the basic traditional models of political activism, class struggle, and revolutionary organization have today become outdated and useless… [T]he more important cause of their demise is the transformation of the multitude itself. The current global recomposition of social classes, the hegemony of immaterial

[3] *Ibid*., p. 21.

[4] David Graeber, "Situating Occupy Lessons From the Revolutionary Past," *InterActivist Info Exchange*, December 4, 2011 <interactivist.autonomedia.org>.

[5] Immanuel Wallerstein, "The Neo-Zapatistas: Twenty Years After," *Immanuel Wallerstein*, May 1, 2014 <www.iwallerstein.com>.

> labor, and the forms of decision-making based on network structures all radically change the conditions of any revolutionary process. The traditional modern conception of insurrection, for example, which was defined primarily in the numerous episodes from the Paris Commune to the October Revolution, was characterized by a movement from the insurrectional activity of the masses to the creation of political vanguards, from civil war to the building of a revolutionary government, from the construction of organizations of counterpower to the conquest of state power, and from opening the constituent process to establishing the dictatorship of the proletariat. Such sequences of revolutionary activity are unimaginable today, and instead the experience of insurrection is being rediscovered, so to speak, in the flesh of the multitude… [R]esistance, exodus, the emptying out of the enemy's power, and the multitude's construction of a new society are one and the same process.[6]
>
> After 1968, the year in which a long cycle of struggles culminated in both the dominant and subordinated parts of the world, the form of resistance and liberation movements began to change radically—a change that corresponded with the changes in the labor force and the forms of social production. We can recognize this shift first of all in the transformation of the nature of guerrilla warfare. The most obvious change was that guerrilla movements began to shift from the countryside to the city, from open spaces to closed ones. The techniques of guerrilla warfare began to be adapted to the new conditions of post-Fordist production, in line with information systems and network structures. Finally as guerrilla warfare increasingly adopted the characteristics of biopolitical production and spread throughout the entire fabric of society, it more directly posed as its goal the production of subjectivity—economic and cultural subjectivity, both material and immaterial. It was not just a matter of "winning hearts and minds," in other words, but rather of creating new hearts and minds through the construction of new circuits of communication, new forms of social collaboration, and new modes of interaction. In this process we can discern a tendency toward moving beyond the modern guerrilla model toward more democratic network forms of organization…
>
> The real transformation of guerrilla movements during this period… has little to do with urban or rural terrain… The small mobile units and flexible structures of post-Fordist production correspond to a certain degree to the polycentric guerrilla model, but the guerrilla model is immediately transformed by the technologies of postFordism. The networks of information, communication, and cooperation—the primary axes of post-Fordist production—begin to define the new guerrilla movements. Not only do the movements employ technologies such as the Internet as organizing tools, they also begin to adapt these technologies as models for their own organizational structures.[7]

Unlike the old revolutionary movements, the new horizontal movements aren't fighting to *capture* anything. The following description refers specifically to Occupy, but applies more generally to all the horizontalist movements of the past two decades:

[6] Cristina Flesher Fominaya, *Social Movements and Globalization: How Protests, Occupations and Uprisings are Changing the World* (New York: Palgrave Macmillan, 2014), pp. 67, 69.

[7] Marina Sitrin, *Horizontalism: Voices of Popular Power in Argentina* (Oakland: AK Press, 2006), p. 4.

> What specific difference"—so goes the familiar litany—"has the Occupy movement made?" Our response to such criticism is that Occupy is not to be assessed strictly in terms of… its effect upon government policy. It is to be assessed, firstly, in terms of the alternative public space that it creates and the mutual recognition between individuals that… it brings into existence…
>
> One of the most telling formulations regarding the Occupy movement comes from Yotam Marom, when he writes that, 'Occupation in general, as a tactic, is a really brilliant form of dual-power struggle because the occupation is both a home where we get to practice the alternative—by practicing a participatory democracy, by having our radical libraries, by having a medical tent where anybody can get treatment, that kind of thing on a small level—and it's also a staging ground for struggle outwards'.[8]

The EZLN (the Zapatista National Liberation Army) was perhaps the first movement with both feet—or at least one and a half—firmly planted in the networked world.

> The Zapatistas, which were born and primarily remain a peasant and indigenous movement, use the Internet and communications technologies not only as a means of distributing their communiques to the outside world but also… as a structural element inside their organization… Communication is central to the Zapatistas' notion of revolution, and they continually emphasize the need to create horizontal network organizations rather than vertical centralized structures.

Despite some hat tipping to the old guerrilla army model in their nomenclature, "their goal has never been to defeat the state and claim sovereign authority but rather to change the world without taking power."[9]

To the extent that the EZLN has carried out governance functions in liberated portions of Chiapas, it has done so in a prefigurative manner, including—much like the Black Panthers in Oakland—a robust program of counter-institution building.

> Comandante Hortensia went on to explain how over the past two decades, they have constructed their own autonomous government, complete with their own health and education system, based in the indigenous traditions of their ancestors. Despite the continual efforts of the "neoliberal bad government" to displace them from their land, the Zapatistas have successfully recuperated thousands of acres of land on which they have constructed communities that are governed "from the bottom up." Community members participate in rotating government positions that operate under the democratic principle of "*mandar obedeciendo*" (commanding by obeying).[10]

And Graeber argues that the cycle of struggles from 1994 to the present had its origins in anarchist praxis.

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[8] Molly Sauter, *The Coming Swarm: DDoS Actions, Hacktivism, and Civil Disobedience on the Internet* (New York, London, New Delhi, Sydney: Bloomsbury, 2014), p. 72.

[9] Michael Hardt and Antonio Negri, *Multitude: War and Democracy in the Age of Empire* (New York: Penguin, 2004), pp. 68–69.

[10] *Ibid*. pp. 81–82.

> The very notion of direct action, with its rejection of a politics which appeals to governments to modify their behaviour, in favour of physical intervention against state power in a form that itself prefigures an alternative—all of this emerges directly from the libertarian tradition. Anarchism is the heart of the movement, its soul; the source of most of what's new and hopeful about it.
>
> It was an international network called People's Global Action, for example, that put out… the original call for protest against the 1999 WTO meetings in Seattle. And PGA in turn owes its origins to the famous International Encounter for Humanity and Against Neoliberalism, which took place knee-deep in the jungle mud of rainy-season Chiapas, in August 1996… People from over 50 countries came streaming into the Zapatista-held village of La Realidad. The vision for an 'intercontinental network of resistance' was laid out in the Second Declaration of La Realidad: 'We declare that we will make a collective network of all our particular struggles and resistances, an intercontinental network of resistance against neoliberalism, an intercontinental network of resistance for humanity'…
>
> This, the Declaration made clear, was 'not an organizing structure; it has no central head or decision maker; it has no central command or hierarchies. We are the network, all of us who resist.'[11]

Sitrin, in the Introduction to her book of the same name, says *horizontalidad* was a word coined to reflect the principles of the new social movements in Argentina, "a break with vertical ways of organizing and relating" based on "democratic communication on a level plane." Movements based on "horizontalism" are

> prefigurative revolutionary movements; movements, that create the future in the present. These new movements are not creating party platforms or programs…
>
> The autonomous social movements in Argentina are one part of this global phenomenon. Within Argentina, they are also a "movement of movements." They are working class people taking over factories and running them collectively. They are the urban middle class, many recently declassed, working to meet their needs in solidarity with those around them. They are the unemployed, like so many unemployed around the globe, facing the prospect of never finding regular work, yet collectively finding ways to survive and become self-sufficient, using mutual-aid and love. They are autonomous indigenous communities struggling to liberate stolen land.
>
> In Argentina, these active movements are now communicating, assisting, and learning from one another, and thus constructing new types of networks that reject the hierarchical template bequeathed to them by established politics.[12]

And like many of the prefigurative movements that came after it (notably the alternative economy experiments arising out of Syntagma in Greece), Argentine horizontalism included lots of grass-roots projects in building a counter-economy to support some degree of secession and

[11] Richard Gunn and Adrian Wilding, "Alternative horizons—understanding Occupy's politics," *Heathwood Press*, January 27, 2014 <www.heathwoodpress.com>.

[12] Hardt and Negri, *Multitude*, p. 85.

pursuit of livelihoods independent of the capitalist economy. "Projects range from bakeries and organic gardens, to alternative medicine clinics, education and schools, to raising animals and taking over land for housing and food production. Many of the hundreds of recuperated factories and other workplaces formed horizontal linkages to barter their respective outputs with one another (for example, a cooperative clinic providing free healthcare to printing factory workers in return for free printing of all their material).[13]

There's been a fundamental shift, in the post-1994 wave of movements, from what Gramsci called a "war of maneuver" (contesting control of the "commanding heights" of political and economic institutions) to a "war of position" within civil society. But there's a major difference even with Gramsci's formulation. Gramsci intended the war of position only to be a Long March undertaken as a prelude, a period of preparation, for eventually staging a final war of maneuver and storming the bastions of political control. The new movements, rather, see the modes of production and social organization facilitated by new technologies as opening the possibility for seceding and building a new society within the interstices of the old one, without ever attempting a seizure of power. As my friend Katherine Gallagher put it:

> We won't be encircled by "them," but woven through their antiquated structures, impossible to quarantine off and finish. I'm not a pacifist. I'm not at all against defensive violence. That's a separate question to me of overthrow. But to oversimplify, when it comes to violence, I want it to be the last stand of a disintegrating order against an emerging order that has already done much of the hard work of building it's ideals/structures. Not violent revolutionaries sure that their society will be viable, ready to build it, but a society defending itself against masters that no longer rule it. Build the society and defend it, don't go forth with the guns and attempt to bring anarchy about in the rubble. I think technology is increasingly putting the possibility of meaningful resistance and worker independence within the realm of a meaningful future. So much of the means of our oppression is now more susceptible to being duplicated on a human scale…
>
> And I think we should be working on how we plan to create a parallel industry that is not held only by those few. More and more the means to keep that industry held only by the few are held in the realm of patent law. It is no longer true that the few own the "lathe" so to speak, nearly as much as they own the patent to it. So we truly could achieve more by creating real alternative manufacture than seizing that built. Yes, there will be protective violence, but it's not as true as it was in the past that there is real necessary means of production in the hands of the few. What they control more now is access to the methods of production and try to prevent those methods being used outside of their watch. Again, I'm not saying that the "last days" of the state won't be marked by violence. But I am saying we now have real tactical options beyond confronting them directly until they come to us.[14]

[13] Andalusia Knoll and Itandehui Reyes, "From Fire to Autonomy: Zapatistas, 20 Years of Walking Slowly," Truthout, January 25, 2014 <www.truth-out.org>.

[14] Graeber, "The New Anarchists," New Left Review 13 (January-February 2002) <newleftreview.org>.

In modern networked organizations—perhaps better called networked *countersocieties*—the attacks and resistance against the enemy are primarily aimed at defending the internal space for self-organization against attempts at suppression.

And as suggested by all the commentators who refer to a post-1994 wave of global struggle, such networked struggles tend to reproduce themselves from one geographical location to another. Note that the following extended passage was written after the Seattle movement, but before the Arab Spring:

> Extensively, the common is mobilized in communication from one local struggle to another. Traditionally… the geographical expansion of movements takes the form of an *international cycle of struggles* in which revolts spread from one local context to another like a contagious disease through the communication of common practices and desires… In each of these cycles of struggles, the common that is mobilized extensively and communicates across the globe is not only the commonly recognized enemy—such as slavery, industrial capital, or colonial regimes—but also common methods of combat, common ways of living, and common desires for a better world…
>
> A new international cycle finally emerged around the issues of globalization in the late 1990s. The coming-out party of the new cycle of struggles were the protests at the WTO summit in Seattle in 1999… Suddenly the riots against IMF austerity programs in one country, protests against a World Bank project in another, and demonstrations against NAFTA in a third were all revealed to be elements of a common cycle of struggles. The cycle of struggles has been consolidated in a certain sense at the annual meetings of the World Social Forum and the various regional social forums. At each of these social forums activists, NGOs, and intellectuals meet to exchange views on the problems of the present form of globalization and the possibilities for an alternative form. Each social forum also functions as a celebration of the commonality that extends throughout the various movements and revolts across the globe that form this cycle… We should emphasize, once again, that what the forces mobilized in this new global cycle have is not just a common enemy—whether it be called neoliberalism, U.S. hegemony, or global Empire—but also common practices, languages, conduct, habits, forms of life, and desires for a better future. The cycle, in other words, is not only reactive but also active and creative…
>
> The global mobilization of the common in this new cycle of struggle does not negate or even overshadow the local nature or singularity of each struggle. The communication with other struggles, in fact, reinforces the power and augments the wealth of each single one…
>
> The global cycle of struggles develops in the form of distributed network. Each local struggle functions as a node that communicates with all the other nodes without any hub or center of intelligence. Each struggle remains singular and tied to its local conditions but at the same time is immersed in the common web. This form of organization is the most fully realized example we have of the multitude.[15]

[15] Sitrin, Horizontalism, pp. 2–3.

S. Tormey's description of the global movement against the Iraq war in early 2003 sounds a lot like the networked movements that have arisen since:

> What they (virtual networks) fostered was a form of interaction that preserved the autonomy and integrity of the constituent parts. No group was subject to the will of another. No group had to recognize one as a leading group or as the 'vanguard' of the movement. There was no need for bureaucracy, permanent staffs, officials, 'leadership', or even premises, beyond somewhere to house a server. Here was a form of interaction that denied the need for the very institutional and logistical framework that had for a century defined the terms and conditions of political activism.[16]

Writing in retrospect about the post-Seattle anti-globalization movement in 2005, Michel Bauwens anticipated many of the most remarked-on features of the Arab Spring and Occupy:

> A key underlying philosophy of the movement is the paradigm of nonrepresentationality. In classic modern political ideology, participating members elect representatives, and delegate their authority to them. Decisions taken by councils of such representatives then can take binding decisions, and are allowed to speak 'for the movement'. But such a feature is totally absent from the alterglobalisation movement. No one… can speak for anyone else, though they can speak in their own name. Another distinguishing feature, is that we can no longer speak of 'permanent organizations'. While unions, political movements, and international environmental and human rights NGO's do participate, and have an important role, the movement innovates by mobilizing many unaffiliated individuals, as well as all kinds of temporary ad hoc groups created within or without the internet…
>
> A commonly heard criticism is that 'they have no alternative', but this in fact reflects their new approach to politics. The main demand is not for specifics, though that can occasionally be part of a consensus platform (such as 'abandoning the debt for developing countries'), more importantly is the underlying philosophy, that 'another world is possible', but that what is most important is not asking for specific alternative, but rather for an open process of world governance that is not governed by the power politics and private interests of the elite, but determined by all the people in an autonomous fashion that recognized the wide diversity of desired futures.[17]

The networked resistance movements of recent years have been governed by the same stigmergic principles of organization we considered in Chapter One. As W. Lance Bennett, Alexandra Segerberg and Shawn Walker note, peer production includes not only open-source software and Wikipedia but

> collaborative activist projects such as the network of Independent Media Centers (IMCs) of the global justice movement. Such projects may involve vast numbers of dispersed and differently engaged individuals that come together to create a common good—be it protest or software—around which further collective action will revolve.

[16] *Ibid*., pp. 7, 15.

[17] Katherine Gallagher (Tweeting as @zhinxy), July 2012. Paragraph divisions mine.

> Despite the open-ended nature of such participation, peer-produced projects involve self-motivated production and self-organization: participants ideally contribute to the project in modular and granular ways and help shape the conditions of the action so that the projects build on self-selection and decentralization rather than coercion and hierarchically assigned tasks.[18]

I. Wikileaks

Although Wikileaks first appeared on the mainstream media radar in 2010 with the release of the "Collateral Murder" video and the State Department classified document dump, it had been around four years before that. Yochai Benkler summarizes its activities starting with its founding in 2006.

> In December of 2006 the site released a copy of a decision by the rebel leader in Somalia to assassinate Somali government officials. In August of 2007, it released another document identifying corruption by Kenyan leader Daniel Arap Moi. November of 2007 was the first time that Wikileaks published information relating to the U.S.: a copy of Standard Operating Procedures for Camp Delta, exposing a formal source outlining the details of how the Guantanamo Bay detention camp was run. In 2008 Wikileaks released a wide range of activities relating to illegal activities of public and private bodies. On the private side, these included a Swiss Bank's Cayman Islands account; internal documents of the Church of Scientology, and Apple's iPhone application developer contract, which had included an agreement not to discuss the restrictive terms. On the public side, it included U.S. military rules of engagement in Iraq permitting crossborder pursuit of former members of Saddam Hussein's government across the border into Iran and Syria, an early draft of the Anti-Counterfeiting Trade Agreement (ACTA), emails from Sarah Palin's Yahoo accounts while she was candidate for Vice President, and a membership list of the far right British National Party. Most prominently, Wikileaks released documents pertaining to extra-judicial killings and disappearances in Kenya, for which it won Amnesty International's New Media award in 2009. Wikileaks also received the Freedom of Expression Award from the British magazine, Index of Censorship in the category of new media. Its activity increased in 2009. The pattern of releasing information relating to a range of very different countries, and of potential corruption, malfeasance, or ineptitude continued, including oil related corruption in Peru, banking abuses in Iceland, and a nuclear accident in Iran. Most prominent that year was Wikileaks's release of copies of e-mail correspondence between climate scientists, which was the basis of what right wing U.S. media tried to turn into "Climategate."[19]

Wikileaks first came to significant attention in American national security circles in 2007. An attempt by a Swiss bank to suppress information on the hosting site resulted in public relations disaster.

[18] Negri and Hardt, *Multitude*, pp. 213–217.

[19] S. Tormey, *Anti-Capitalism: A Beginner's Guide* (Oxford: OneWorld, 2004) p. 65, in Athina Karatzogianni, "The Impact of the Internet during the Iraq war on the peace movement, war coverage and war-related cyberattacks," *Cultural Technology and Policy Journal* vol. 4 no. 1 (2004) <www.nottingham.ac.uk> p. 5.

> … [I]nstead of the information disappearing, it rocketed through cyberspace, landing on other Web sites and Wikileaks' own "mirror" sites outside the U.S…[20]

A 2008 Pentagon report in the aftermath (leaked by Wikileaks in March 2010) expressed considerable alarm over the site's potential for harming U.S. "national security interests."[21]

Although it figured in the press in 2010 primarily insofar as it exposed the secrets of the American national security state, Wikileaks started out as a whistleblowing site oriented at least as much toward corporate leaks. And according to a late 2010 interview with *Forbes* magazine, Wikileaks founder Julian Assange stated that "about fifty percent" of all documents uploaded to the site came from private sector institutions.

The Wikileaks Cables leaked in 2010 included embarrassing revelations about the process by which the Anti-Counterfeiting Trade Agreement (ACTA) was negotiated.[22] In August 2011, Wikileaks released another 23,000 diplomatic cables, including documents on American construction companies receiving billions of dollars in contracts thanks to their close political relations with the Libyan government.[23]

And of course the 2010 leaks caused all hell to break out from official circles. Under pressure from the U.S. government, Wikileaks was refused web-hosting and domain services[24], and a number of major banks and online payment services put Wikileaks under blockade and refused to transfer donations to the site.[25]

As Benkler observes, two things are notable about the concerted attack on Wikileaks in 2010. First, its failure. And second, its motivation as a panicked official response to the novel nature of a Networked Fourth Estate operating outside the incentive system of the "responsible" press.

> The response also highlights the challenges that a radically decentralized global networked public sphere poses for those systems of control that developed in the second half of the twentieth century to tame the fourth estate, to make the press not only "free," but also "responsible." Doing so allows us to understand that the threat represented by Wikileaks was not any single cable, but the fraying of the relatively loyal and safe relationship between the United States Government and its watchdog.[26]

Wikileaks also released a series of "insurance" files, the most recent of them in August 2013 a 400 GB trove of documents, that was mirrored by supporters around the world, to be decrypted on a "dead man switch" basis.[27]

The saga over the rape allegations and arrest of Assange has largely overshadowed the significance of Wikileaks as an institution. The debate seems to be polarized between those who equate

[20] Michel Bauwens, "P2P and Human Evolution: Peer to peer as the premise of a new mode of civilization " (The essay is an emanation of the Foundation for P2P Alternative, Draft 1.1, March 1, 2005), p. 33.

[21] W. Lance Bennett, Alexandra Segerberg and Shawn Walker, "Organization in the crowd: peer production in large-scale networked protests," *Information, Communication & Society*, 17:2 (2014), p. 6.

[22] Yochai Benkler, "A Free Irresponsible Press: Wikileaks and the Battle Over the Soul of the Networked Fourth Estate" (Working Draft, 2011) <benkler.org> pp. 4–5.

[23] "PR disaster, Wikileaks and the Streisand Effect" *PRdisasters.com*, March 3, 2007 <prdisasters.com>.

[24] Benkler, pp. 5–6.

[25] "Wikileaks Cables Shine Light on ACTA History," *La Quadrature du Net*, February 3, 2011 <www.laquadrature.net>.

[26] Rob Beschizza, "Wikileaks releases new batch of diplomatic cables," *Boing Boing*, August 23, 2011 <boingboing.net>.

[27] Benkler, p. 24.

supporting the victim to considering him a rapist without regard to any procedural justice, and those who dismiss the women's accusations as trumped-up in collusion with the U.S. security state and think feminists should just ignore the issue "for the good of the cause."

To me the idea that solidarity with victims requires an automatic assumption of guilt upon accusation is abhorrent. But I find myself even more turned off by the dismissive attitude of Assange's supporters, and the growing tendency of Wikileaks' public information efforts to become a 24/7 public relations campaign on Assange's behalf. Even before the rape allegations, Wikileaks showed a disturbing tendency toward being constrained by the Assange personality cult. Whether or not Assange is guilty of rape, his accusers' charges should be judged on their own merit. When one person becomes so vitally important to the success or failure of a cause that the true believers consider it necessary to exempt him from the consequences of his own actions, it's a clear sign the cause is in an unhealthy state of dependence. And whether or not Assange is guilty, the fact that the issue has become such a handicap to the mission of Wikileaks indicates that the project's dependence on Assange is a serious bottleneck and a vulnerable central node.

Wikileaks needs to grow beyond the Assange personality cult, for the same reasons that—as we shall see below—LulzSec needed to grow beyond Sabu. Jemima Khan expressed a similar viewpoint in *The New Statesman*:

> WikiLeaks—whose mission statement was "to produce a more just society based upon truth"—has been guilty of the same obfuscation and misinformation as those it sought to expose, while its supporters are expected to follow, unquestioningly, in blinkered, cultish devotion…
>
> It may well be that the serious allegations of sexual assault and rape are not substantiated in court, but I have come to the conclusion that these are all matters for Swedish due process and that Assange is undermining both himself and his own transparency agenda—as well as doing the US department of justice a favour—by making his refusal to answer questions in Sweden into a human rights issue…[28]

Wikileaks needs to eliminate another, physical bottleneck. The file-sharing movement reduced its vulnerability by becoming more and more decentralized, adopting a horizontal P2P architecture, and eventually abandoning its dependence on particular websites and moving to the Cloud. In addition to its vulnerability, Wikileaks is an organizational bottleneck in the sense that the processing of largescale document dumps like Manning's 2010 State Department cables has been limited by the resources of a small staff around Assange.

One of the projects Aaron Swartz was working on at the time of his death was a secure platform for whistleblowers to safely drop leaked documents.

> SecureDrop is an open-source whistleblower support system, originally written by Aaron Swartz and now run by the Freedom of the Press Foundation. The first instance of this system was named StrongBox and is being run by the *New Yorker*. To further add to the naming confusion, Aaron Swartz called the system DeadDrop when he wrote the code.
>
> I participated in a detailed security audit of the StrongBox implementation, along with some great researchers from the University of Washington and Jake Applebaum.

[28] "The Banking Blockade," *Wikileaks.org*. Accessed May 26, 2013 <wikileaks.org>.

> The problems we found were largely procedural, and things that the Freedom of the Press Foundation are working to fix.[29]

In October 2013 the project was taken over by the Freedom of the Press Foundation, an offshoot of the Electronic Frontier Foundation.

> Freedom of the Press Foundation is not running any instances of SecureDrop. It has about a half dozen major news organization lined up, and will be helping them install their own starting the first week of November. So hopefully any would-be whistleblowers will soon have their choice of news organizations to securely communicate with.[30]

II. The Arab Spring

Perhaps the most important effect of Wikileaks—and the 2010 document dump—was its role in instigating the arc of protests from Tunisia and Tahrir Square, to Libya, to Spain, to Madison, to Greece and Israel, to Occupy Wall Street, and outward back outward to the rest of the world again.

These networked, horizontal movements, and their predecessors kicked off a decade ago by the Seattle anti-WTO demonstrations, are another example of the phenomenon we saw Tom Coates describe: work that once required large institutions, that now can be produced with equal quality in the home. As Pirate Bay cofounder Rick Falkvinge writes:

> A Swarm is a new kind of organization, made possible by available and affordable mass communication. Where it used to take hundreds of full-time employees to organize 100,000 people, today that can be done—and is done—by somebody in their spare time from their kitchen.[31]

A swarm is run by the same stigmergic model of cooperation and division of tasks as Eric Raymond's Bazaar:

> If you want leadership in a Swarm, you stand up and say "I'm going to do X, because I think it will accomplish Y. Anybody who wants to join me in doing X is more than welcome." Anybody in the Swarm can stand up and say this, and everybody is encouraged to. This quickly creates an informal but tremendously strong leadership structure where people seek out roles that maximize their impact in furthering the Swarm's goals—all happening organically without central planning and organization charts.[32]

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[29] Benkler, pp. 15–16.

[30] Paul Szoldra, "Wikileaks Just Released A Massive 'Insurance' File That No One Can Open," *Business Insider*, August 17, 2013 <www.businessinsider.com>.

[31] "Jemima Khan on Julian Assange: How the Wikileaks founder alienated his allies," *New Statesman*, February 6, 2013 <www.newstatesman.com>.

[32] Bruce Schneier, "SecureDrop," *Schneier on Security*, October 17, 2013 <www.schneier.com>.

We argued earlier that networked or stigmergic organizations undergo generational innovations with the speed of replicating yeast, because members are free to innovate on a modular basis and their contributions are immediately free to anyone in the network who wants to adopt them. Falkvinge applies this general rule to the networked protest movements that began in January 2011:

> At the bottom line, what sets a Swarm apart from traditional organizations is its blinding speed of operation, its next-to-nothing operating costs, and its large number of very devoted volunteers. Traditional corporations and democratic institutions appear to work at glacial speeds from the inside of a Swarm. That's also why a Swarm can change the world: it runs in circles around traditional organizations, in terms of quality and quantity of work, as well as in resource efficiency.[33]

The first such movement began in Tunisia, with loose networks of college students outraged by revelations in leaked U.S. State Department cables about the corruption of the Tunisian ruling elites. The immediate cause of the demonstrations was the self-immolation of Mohamed Bousazizi, in protest against the seizure of his unlicensed vegetable cart. By January 14, President Zine el Abidine Ben Ali was driven from power.[34]

The Egyptian uprising likewise started with the martyrdom of Khaled Said.

> One day last year, after apparently hacking a police officer's cell phone and lifting a video of officers displaying drugs and stacks of cash, he was arrested and beaten to death. Wael Ghonim, then a 29-year-old Google executive, created a Facebook page called We Are All Khaled Said to memorialize him. It went viral, and in January, Ghonim returned from Dubai to Egypt to help plan a protest set for Jan. 25: a "day of rage" in Tahrir Square.[35]

Steven Colatrella depicts the lessons of Tahrir Square against the background of the previous thirty years. The real Iranian revolution was suppressed by the Ayatollahs. The Reagan administration, between the PATCO strikes and Volker's interest rate hikes, broke the back of the American labor movement. The neoliberals emasculated Solidarity and the ANC. The Tienanmen Square massacre left the Chinese state a free hand for neoliberal policy. The entire global working class has lived under the shadow of these defeats, with the exception of Hugo Chavez's defeat of the U.S.-backed coup attempt in 2002. Tahrir Square undermined this narrative and established a counter-narrative of empowerment.

> So, three of the pillars are in danger at once—control of oil, global governance imposition of austerity and neoliberalism in the Third World, and the horror of Tiananmen Square for any working class ready to challenge its fate as cheap labor in the global economy. That is the meaning of Tahrir Square—it is the end of the era of Tiananmen Square that has already begun with the strikes and labor organizing in China itself. It is a threat to the world capitalist order.[36]

[33] *Ibid*.
[34] Rick Falkvinge, "Swarmwise: What Is A Swarm?" *Falkvinge on Infopolicy*, August 8, 2011 <falkvinge.net?>.
[35] *Ibid*.
[36] *Ibid*.

Even after the new Muslim Brotherhood's Freedom and Justice Party regime began its own cycle of repression, the Tahrir Square Movement's shadow remained a permanent presence in Egyptian politics. Finally, fed up with the excesses of the new regime, a new protest movement—even bigger than the one of 2011— began on Tahrir Square in Summer 2013 (albeit with more ambiguous results than the previous uprising).

The Egyptian military seized on the second Tahrir Square uprising as an opportunity to remove the Muslim Brotherhood from power, in what amounted to a military coup under cover of reformism. After the demonstrators issued a public demand for Morsi to step down within 24 hours, the army quickly backed them up with a 48-hour ultimatum to "comply with the people's demands."[37] The military assumed direct power when he resigned in August, with the promise of "free and fair elections" in the future. But they quickly shifted toward counterrevolution and authoritarian consolidation of control, with attacks on protesters and strikers, in much the same way Morsi had.[38]

Jerome Roos characterized the entire revolutionary period of 2011–2013 as a series of attempts by the military to maintain itself as the power behind the government by sacrificing governments to the uprising.

> When the people of Egypt initially rose up in January 2011, they rebelled against a deeply entrenched and profoundly repressive military dictatorship that had deprived them of "bread, freedom and social justice" for as long as most people could remember. (cid:6)(cid:1)(cid:3)(cid:2)(cid:4) (cid:2)(cid:1)(cid:5)(cid:1)(cid:6)(cid:3)(cid:2)(cid:4)(cid:5) The main slogan in the first wave of protests unsurprisingly became: (cid:7)(cid:1)(cid:6)(cid:3)(cid:2)(cid:4) —the people demand the fall of the regime. Note the important point that the Arabic word for "regime" (nizam) is perhaps better translated as system, which indicates that this is not just about a specific group of privileged people but about a whole set of oppressive social structures. The people demand the downfall of this system.
>
> In this sense, the system's initial reaction was every bit as brutal as it was predictable: it simply tried to quash the revolt. But when it became self-evident that this approach wasn't quite working, the true ruling class shifted strategies. The army's topbrass recognized that to perpetuate its rule, or at least secure its economic interests and privileged political position, it would have to appease the masses. And so the military command, led by Field Marshal Mohamed Tantawi—Mubarak's long-time Defense Minister and personal confidant, known in ruling circles as "Mubarak's poodle"—simply turned on their former master and pushed him from power.
>
> This led to the 15-month rule of the SCAF, which was supposed to be a transition period giving way to Egypt's first democratic elections, but which was marked by continued mass mobilizations to save the revolution from the army's incessant attempts to stall the revolutionary process and repress the ongoing protests. Belying its own prodemocratic rhetoric, the SCAF brutally cracked down on the protesters,

[37] Rania Abouzeid, "Tunisia: How Mohammed Bouazizi Sparked a Revolution," *Time*, January 21, 2011 <www.time.com>.

[38] Kurt Andersen, "The Protester—TIME's People Who Mattered in 2011," *Time*, December 14, 2011 <www.time.com>.

killing hundreds and imprisoning, torturing and maiming thousands. During the second wave of revolt, as hundreds of thousands again amassed in Tahrir Square, the main slogan of the revolutionaries simply became: "down with military rule."

By early 2012, the SCAF realized that its direct rule over society was badly affecting its carefully crafted mythology as a patriotic institution aligned with the goals of the revolution, potentially endangering its economic interests. At that point, it was happy to just leave politics behind and let some eager civilians take the blame. It was clear, however, that the only social force organized enough to take on such a responsibility was the Muslim Brotherhood. And so the army called elections, knowing full well that the Islamists would win, but recognizing just as well that it was in its own best interests to retreat to the wings and let elected politicians solve their mess. In fact, the army ascertained that the Brotherhood would win the elections, allowing its members to man the polling stations, count the ballots and beat up "troublemakers".

And yet, even if it successfully managed to change the face of the regime by organizing the drafting of a new constitution and the country's first "free and fair" elections, the military command never truly left power. Even before Morsi was elected president with 51% of the vote, both the army and the Muslim Brotherhood realized that they would have to make some kind of pact whereby the army would be allowed to preserve its economic empire and its privileged political position, while the Muslim Brotherhood would be allowed to fill the regime's gaping vacuum of legitimacy by trying to establish an Islamist "cultural hegemony" in order to entrench the system ideologically…

This brings us to the second point: this was not a military coup d'ètât. At least not in the ordinary sense of the word. After all, even if the Muslim Brotherhood did at times seek to directly confront the military's political influence, the military's top command remained one of the dominant political and economic players even after Egypt's first free and fair elections. It never took over state power because it never truly relinquished it: after burning its fingers on a disastrous year of military rule, it deliberately entered into a coalition with the country's biggest and oldest organized political force. The moment that force imploded, as a result of its own incompetence and arrogance, the army simply dumped it and replaced it with someone more of their liking— piggybacking off a wave of grassroots protest and some of the largest mobilizations in world history to further entrench its hegemony…

So if this is neither a coup nor a second revolution, then what is it? Perhaps we should see the overthrow of Morsi as the third phase in an ongoing revolutionary process; a wave of rebellion that once again forced the army to make an extremely awkward move it would otherwise not have made. In that sense, it is both an affirmation of people power and a simultaneous co-optation of that people power by the constituted powers-that-be. If anything, this is yet another attempt to hijack the revolutionary process: the army already controlled the state, now it controls much of the streets too. After manoeuvring itself into virtually every imaginable position—

> from the revolution's ultimate oppressor to its heroic savior—the military command now seems to be getting away with it. The question is: how much longer?[39]

Social media drastically reduced the transaction costs of aggregating isolated and atomized popular discontent into a coherent movement,

> Take Khaled Said, an honest man beaten to death by police he refused to bribe. Egyptians are outraged, but what can they do? Nothing. A Facebook page is created in his memory. Malcolm Gladwell can tell you how irrelevant and inconsequential an act that is.
>
> … Six months later, that Facebook page has accumulated more than half a million followers, and has become an online gathering place for activists…
>
> The great paradox of tyranny is that a very small group of people brutalizes, tortures and steals from millions who, if they rose en masse, could shake off their oppressors. Revolution is simply the realization of this fact. Why did the protestors march to Tahrir Square? To show their strength in numbers. They already knew beforehand, despite the Egyptian's government's ongoing attempt to divide and blindfold its people, that the numbers were on their side. They only had to look at the sidebar and comment counts of Khaled Said's memorial page.
>
> The Internet… lets oppressed people join in outrage, in shared fury and humiliation, in the sense of being part of a single mass of people with a single intent. Where else can you get that, in a blindfolded, fragmented nation?… How else can you look beyond your own life and your own cramped horizon, and realize that you're part of a movement?… Simply by linking the oppressed and creating connections, Twitter and Facebook help to stoke the fires of change everywhere…
>
> … [The] lesson of Egypt is that dictators can no longer rely on their victims' fatalism and despair. Untrammeled Internet access… will make blatant tyranny impossible, by revealing the simple frailty of tyrants.[40]

Zeynep Tufekci argued, against the dismissals of theorists like Evgeny Morozov:

> 1. The capacities of the Internet that are most threatening to authoritarian regimes are not necessarily those pertaining to spreading of censored information but rather its ability to support the formation of a counter-public that is outside the control of the state. In other words, it is not that people are waiting for that key piece of information to start their revolt—and that information just happens to be behind the wall of censorship—but that they are isolated, unsure of the power of the regime, unsure of their position and potential.
> 2. Dissent is not just about knowing what you think but about the formation of a public. A public is not just about what you know. Publics form through

[39] Steven Colatrella, "From Tiananmen to Tahrir Square," *Counterpunch*, February 8, 2011 <www.counterpunch.org>.

[40] Jerome Roos, "Egypt's revolution: between the streets and the army," *ROAR Magazine*, July 2, 2013 <roarmag.org>.

knowing that other people know what you know–and also knowing that you know what they know… Yes, all those parts of the Web that are ridiculed by some of the critics of Internet's potential—the LOLcats, Facebook, the three million baby pictures, the slapstick, talking about the weather, the food and the trials and tribulations of life—are exactly the backbone of community, and ultimately the creation of public(s).

3. Thus, social media can be the most threatening part of the Internet to an authoritarian regime through its capacity to create a public(ish) sphere that is integrated into everyday life of millions of people and is outside the direct control of the state partly because it is so widespread and partly because it is not solely focused on politics…[41]

As Nicholas Kulish argued in a later article written after the beginning of Occupy Wall Street, the series of movements from the Arab Spring to the Occupy movement reflected a different youth consciousness about the value of electoral politics and pressure campaigns, coupled with the availability of new networked communications technologies:

> Hundreds of thousands of disillusioned Indians cheer a rural activist on a hunger strike. Israel reels before the largest street demonstrations in its history. Enraged young people in Spain and Greece take over public squares across their countries.
>
> Their complaints range from corruption to lack of affordable housing and joblessness, common grievances the world over. But from South Asia to the heartland of Europe and now even to Wall Street, these protesters share something else: wariness, even contempt, toward traditional politicians and the democratic political process they preside over.
>
> They are taking to the streets, in part, because they have little faith in the ballot box.
>
> "Our parents are grateful because they're voting," said Marta Solanas, 27, referring to older Spaniards' decades spent under the Franco dictatorship. "We're the first generation to say that voting is worthless."…
>
> Increasingly, citizens of all ages, but particularly the young, are rejecting conventional structures like parties and trade unions in favor of a less hierarchical, more participatory system modeled in many ways on the culture of the Web.
>
> In that sense, the protest movements in democracies are not altogether unlike those that have rocked authoritarian governments this year, toppling longtime leaders in Tunisia, Egypt and Libya. Protesters have created their own political space online that is chilly, sometimes openly hostile, toward traditional institutions of the elite.
>
> The critical mass of wiki and mapping tools, video and social networking sites, the communal news wire of Twitter and the ease of donations afforded by sites like PayPal makes coalitions of like-minded individuals instantly viable.
>
> "You're looking at a generation of 20- and 30-year-olds who are used to selforganizing," said Yochai Benkler, a director of the Berkman Center for Internet and Society

[41] "Tahrir-ICN statement on events in Egypt," *Tahrir-ICN*, August 15, 2013 <tahriricn.wordpress.com>.

> at Harvard University. "They believe life can be more participatory, more decentralized, less dependent on the traditional models of organization, either in the state or the big company. Those were the dominant ways of doing things in the industrial economy, and they aren't anymore."[42]

The Tahrir Square uprising was the opening shot in a long chain of national and global movements organized on a similar pattern. The common thread running through them was the new potential of horizontally linked communications technology, which continued the global immediacy of information CNN had pioneered thirty years before—but without cable television's one-way hub-and-spoke architecture.

> Since Mubarak's ouster, hand-held devices armed with Internet access, video cameras, and social media software have challenged the status quo from Beijing to Yangoon, from the pre-election streets of Moscow to the battered Syrian city of Homs.
>
> In instance after instance, technologies designed for daily communication or research have adapted to a new task—exposing the malfeasance and incompetence of governments and the increasing irrelevance of traditional media to the average person…
>
> But the technological challenge to modern government—repressive or otherwise—became clear during the Arab Spring, when in December 2010, the release by WikiLeaks of secret U.S. diplomatic cables confirmed the depths of corruption in Tunisia's regime. It took only a few well-placed tweets to fill the streets thereafter.
>
> These events occurred in vastly different countries with a variety of political and economic systems. Yet all these governments found suddenly that the old rules that had allowed them to leverage journalistic access to power or remote disaster zones had suddenly changed. The indomitable power of information flowing straight from an eyewitness source to a mass audience has undone centuries of government news management (or, in some cases, censorship) capabilities, not to mention the traditional media outlets…
>
> As recently as the late 1990s… , mobilizing thousands of people to oppose an autocratic government involved months of furtive meetings, any one of which might be penetrated by the regime's security services and lead to sweeping arrests; the loss of jobs; or in the most brutal cases, jail, torture, and death. Even if you successfully brought demonstrators into the street, there was considerable risk that the protests would be crushed without the outside world ever knowing…
>
> Beginning in the late 1980s, the widespread adoption of satellite broadcasts by news networks changed this a bit, but only if the network had sophisticated equipment based in the country and access to the event in question. When CNN beamed back live images of the Tiananmen Square massacre in 1989 and the first Gulf War in 1991, it profoundly changed the way the public, governments, the military, and the media approached global crises… They didn't always get it right, but CNN—and later the BBC World Service, Al Jazeera, and others—changed the dynamics of international

[42] Jerome Roos, "In Egypt, the real regime still has to fall," *ROAR Magazine*, July 5, 2013 <roarmag.org>.

> events. For those attempting to challenge a tyranny, it was essential that the images be seen via satellite.
>
> Still, television broadcasters represented a single, unidirectional node: their cameras showed live images in real time, but the audience was a passive spectator. Also, the networks still had to kowtow to authorities, lest they lose satellite uplinks or have their visas revoked. Ultimately, the world's governments and military commanders learned to manage the problem—throwing CNN and Al Jazeera out as soon as trouble started in some cases, jamming their signals, or, more subtly, insisting on "embedding journalists," as in the case of the US military in Iraq, a practice meant to provide some access while preventing them from roaming all over the battlefield.
>
> Compare this approach to the avalanche of information that now quickly accompanies any major international event. Since roughly the start of the 21st century, major events… were all captured instantaneously in eyewitness video and text accounts that were rushed to the world via cellphone, Internet, and social networks. Every person with a phone becomes the world's witness, if not a journalist. From one node in the Gulf War, the number now hits the millions. And unlike television, radio, and print reports, which still flow mostly toward the mass audience, filtered through editors and producers, the new template elevates the "conversation" above the level of information. Viewers and readers now see the raw data as it streams in and can engage in conversation with those sending it, cheering them on or arguing against them.[43]

To quote Kevin Kelly, it was inevitable that "decentralized socialism on the net would spill over into the other realms of life. You can't spend all day in an open-sourced, all-sharing, peer-to-peer network and not begin to think that the rest of your world should also operate in the same way."[44]

Orsan Senalp sees this as a Global P2P Revolution taking place from Tahrir Square on, but with its roots in the first networked activism of the 1990s:

> The peer to peer processes are at the core of this rising revolutionary agency, as well as to the structural changes we have been experiencing since the late 60s. These two dialectically shape each other within the process. Against this backdrop the precariat, peer labour and immaterial labour [including social justice activists working for the NGO sector] are forming a constellation of alter forces, towards a grand alliance without the consciousness of a class. The formation of this new global historic bloc of alter forces can be indicating the rise of a New Transnational Labour Class [so in formation].[45]

Michael Gurstein, in an argument which would be developed further in regard to Occupy Wall Street, made a case that the methods of struggle in the Arab Spring foreshadowed the model of

[43] Jon Evans, "The End of History, Part II," *TechCrunch*, February 13, 2011 <techcrunch.com>.

[44] Zeynep Tufekci, "As Egypt Shuts off the Net: Seven Theses on Dictator's Dilemma," *technosociology*, January 28, 2011 <technosociology.org>.

[45] Nicholas Kulish, "As Scorn for Vote Grows, Protests Surge Around Globe," *New York Times*, September 27, 2011 <www.nytimes.com>.

organization in the successor society. Not only do such network technologies enable resistance to the existing regime, but they also offer new weapons for undermining the kinds of neoliberal "reform" regimes that succeeded "Color Revolutions" in the past. In Egypt, for example, the Tahrir Square movement has shown no signs of intent to conveniently pack up and go home under post-Mubarak military regimes. And in addition, the horizontalism of the resistance movement prefigures the horizontalism in organizing the successor society.

> It may be more useful… to look forward rather than back; to identify what, from the experience of these revolutions and interwoven as they were… by social media and information technology, might be of value as these countries go forward…
>
> Once the dust settles, and perhaps even before, Egypt and Tunisia and whichever other countries achieve a degree of regime change, will suffer an invasion of think tankers, foundation funded consultants, World Bank and IMF analysts and so on all offering "solutions" to the country's problems. These offers will be presented without irony even though it was the formulations of these same consultants, analysts etc. etc. who, reporting to the previous regimes, in many cases bear primary responsibility for creating the problems which brought so many out onto the streets.
>
> … The revolts in Egypt and Tunis… are as much renunciations of the neoliberal solutions which underpinned the rapacious crony capitalism of the regimes, as they are renunciations of the tyrants who rather passively oversaw the implementation of these policies by their western elite educated sons and their similarly western educated and ideologically imbibed cronies.
>
> The revolutions in Egypt and Tunisia will have very great challenges in finding alternative paths to replace the discredited ideologies… in order to satisfy the large but not unreasonable expectations of their populations for decent health care, decent education, employment for skilled and trained young people and living wages for working people… Given the evident bankruptcy of the existing solutions… , the need for the social movement to find ways to address the outstanding national issues will mean that they will need to look inward to themselves for the resources and the approaches that can provide the basis for moving forward.
>
> In this, I think that the revolutions in Egypt and Tunisia have access to skills and resources which were unavailable to earlier movements that is—the Internet, social networking, mobile telephony and perhaps most important, the experience and knowledge of how to use these in support of collective social ends…
>
> The use of the technologies—cell phones, Facebook, twitter, the Internet—all made a contribution to the success of the movements although the amount of contribution is the subject of considerable dispute. Certain lessons were no doubt learned from this. The challenge is to take those lessons and apply them to the much more intransigent but equally important issues of rebuilding Egypt with a success similar to that achieved in the removal of the despot.
>
> … [P]erhaps one could anticipate some of those lessons:
>
> Enabling solidarity. The technology enabled processes of creating and maintaining solidarity—as a combination of trust, ascribed legitimacy, and a sense of unity and

common purpose. It allowed for solidarity to be developed and maintained over time, to be extended over space and between those who had only very limited or in some cases no physical interaction. Translating this into a sense of common purpose going forward is not a given but however much it can be maintained… will allow the movement to avoid the multiple costs and risks of simply assigning the mandate and future of the revolution to a party or to existing administrative structures and elites al la the Russian Revolution or the overthrow of Apartheid in South Africa.

Aggregating social action. To accomplish what it did the movements in Tunisia and Egypt had to aggregate and consolidate the actions of multiple individuals and as time went on, the actions of multiple groups with divergent interests towards a common purpose..[P]arallel processes of group sourcing and open development in a variety of spheres, suggests that these techniques may be carried over into aggregating social actions towards collaborative problem solving at the local level going from local clean-up campaigns to self-help groups for responding to social needs to building local economic processes through self-sufficiency and small enterprise development serving local needs.

Global communication—global reach—compared to earlier similar revolutions this one was wired not only internally but externally to the world. This means that the movement is able to access the world and its range of expertise and knowledge resources… Equally, the movement will be in a position to link into whatever external resources it chooses and need not simply follow existing lines or traditional paths out of expediency (as for example those prescribed by party, religion or ethnicity) as it moves forward.

Overcoming distance… The difficulties of communication and of maintaining solidarity and trust precipitate processes of centralization of decision making, concentration of leadership, and the related formation of hierarchical structures of authority. The now available capacities for flexible and content intensive two way communication at a distance relieves the necessity for these processes by allowing for alternatives of peer to peer, horizontal and place independent processes.

Enabling transparency—the communication media allow for the transparency of operation, of financial transactions, and of decision making from which new forms of accountability and democratic participation may be created.

Operational flexibility and immediacy of response—the speed of communications and the facility in establishing and modifying communications and information management structures means that the new institutions which need to be established in post-revolutionary Egypt and Tunisia can be structured so as to avoid the rigidification and tendencies towards authoritarianism which traditional processes of institutionalization have almost universally exhibited.

Enabling decentralized structures and localized decision making—social media enabled processes within the movement demonstrated the capacity for and the strength of ICT-enabled decentralization and localization of decision making and facilitating of local responses to local conditions. These community informatics processes could prove extremely useful in designing, developing and maintaining the range of appro-

> priate public services… which will need to be designed and established in the immediate post-movement period in response to the expressed popular demand. A community approach to enabling and building these services utilizing electronic platforms and leveraging localized social processes will allow for the flexibility, responses to localized conditions, and amplification and leveraging of scarce specialized skills that proved so powerful in the democracy movements. It would facilitate the necessary process of the movement being incorporated into new institutional responses…
>
> The challenge and the opportunity now is to translate all of this into deinstitutionalized institutions, structured decision making without structures, and dynamic frameworks of accountability that work over time and through space while avoiding Robert Michel's "Iron Law" (of Oligarchy).[46]

III. The European Revolution: Spain, Greece and Points Beyond

The Spanish 15M, or Indignado Movement. The 15M (May 15), or Indignado movement began May 15, 2011, as 150,000 demonstrators assembled in sixty towns all over Spain, taking over public squares and setting up campsites. A powerful theme in the movement was growing disaffection with the political system and a growing perception of the worthlessness of voting and participating in the political process.[47]

The general pattern of organization in the 15M camps and assemblies was much like—and probably inspired—that later taken by Occupy Wall Street:

> In Sol, the organizers… quickly started organizing a community by dividing the workload into different commissions (all made up of volunteers): cleaning, security, legal advice, infrastructure, food, external and internal communications. This last one set up a speaker in the middle of the square, so as to communicate between each other and to deliver important messages to the community. The infrastructure commission built large tents, made for shelter and to house each group's "office", food and blankets were provided, people brought mattresses and sofas from their homes, as well as sleeping bags, tents and cardboard boxes to coat the floor. The legal team held a brief meeting and afterwards communicated basic advice just in case the police were to crackdown on the campers. Meanwhile, external communications organized workshops to prepare volunteers for talking to the media, arranged teams of translators who would start working on social media sites and went about promoting the event on the web. The result was that in a few hours a totally self-governed mass of people, without any visible leaders, was fully functional and able to sustain the main reason behind the whole movement: the formation of public assemblies that were to enunciate the feelings and ideas of everyone present and turn them into proper policies.[48]

The writer, foreshadowing traditional Leftist critiques of Occupy, also complained about the assemblies' inability to deal with the "real issue" of agreeing on "a real manifesto or proposals

[46] Michael Moran, "From Short Waves to Flash Mobs."
[47] Kevin Kelly, "The Technology of Global Unrest," *The Technium*, September 28, 2011 <www.kk.org>.
[48] "Orsan Senalp: Global Class Warfare," *WilliamBowles.info*, September 29, 2011 <williambowles.info>.

for reform." Michel Bauwens of the Foundation for P2P Alternatives argued in response that "the relative indeterminacy of the Spanish movement is not a bug, but a feature."[49]

A week later, and in the aftermath of the ruling Socialist coalition's heavy losses to the Conservatives in the May 22 elections, the M15 movement took further steps toward creating its own prefigurative institutions. Amaia Arcos writes:

> The movement quickly adopted free participatory public assemblies in "occupied" squares. Creating neighbourhood assemblies in order to give shape and sustain the protest movement quickly took centre stage…
>
> Decentralising the movement and establishing networks of neighbourhood assemblies has been this past week's objective. The original idea was to dismantle the camps… Yesterday was particularly important: the freshly created neighbourhood and town assemblies in Madrid met, for the first time, during the day in Plaza del Sol in order to coordinate. Later on that evening, the movement was to collectively decide (every main square in the country held a vote) whether to dismantle the camps or continue for a few more days. Friday had seen the first, for now, of serious dislodging attempts on the part of Catalan regional police using disproportionate force against Barcelona protestors. Last night, most people felt, and voted, the camps should continue for a few days in order to make a statement of purpose, reject violence against peaceful protestors and have a meeting place until neighbourhood assemblies are properly functioning.
>
> Assemblies have been enjoying mass success… Many other cities in Spain have held similarly packed looking assemblies…
>
> A website has been created to coordinate Madrid's assemblies and it is expected other regional assemblies will organise similarly. Madrid is where the movement originated and it has since been considered the referent for the rest of Spain. Barcelona is also networking and compiling freshly created neighbourhood assemblies…
>
> Given the origin of the protests and its close relationship with the Internet, Spain's "geek" community is closely involved. A working group of engineers and programmers is looking to design participatory democracy technical infrastructure in order to aid organisational, voting and consulting processes…[50]

As the first anniversary approached, the media consensus was that the Indignados had peaked in the previous year and begun fading away with the dismantling of the Puerta del Sol camp. Marta Sanchez argues, rather, that the movement metamorphosed into a different form by decentralizing into society at large:

> When May 2011 came to an end, the recently born 15-M movement had to find out how to survive beyond the camp at Puerta del Sol (acampadasol). Thus arose the idea of decentralizing the movement towards the neighborhoods: the 'toma los barrios',

[49] Michael Gurstein, "Egypt: From the Iron Rule of Tyranny to the Iron Law of Oligarchy: Can the ICT Change the Rules?" *Gurstein's Community Informatics*, February 23, 2011 <gurstein.wordpress.com>.

[50] Michel Bauwens, "Analysis of the May 15 movement in Spain," *P2P Foundation Blog*, May 22, 2011 <blog.p2pfoundation.net>.

> or take the neighborhoods, initiative supported and encouraged the creation of assemblies in every neighborhood of Madrid. In this way, the movement went local: since the creation of the neighborhood assemblies on May 28, 2011, around 120 assemblies have been set up, and they coordinate through the Asamblea Popular de Madrid, the popular assembly of Madrid, also known as Asamblea Interbarrios (the inter-neighborhood assembly). As there were many thematic working groups in the original Sol camp, working groups with similar interests were created in most of the neighborhood assemblies, which since then collaborate and coordinate with the general groups from acampadasol.
>
> The objectives of such decentralization aimed, in the first place, to promote direct and participatory democracy in the local sphere, based on an understanding of politics as the art of collectively creating an alternative pattern of social relations, thereby bringing people out of isolation and into a community. A second objective aimed to retake the public sphere… as a place in which political participation is enacted through the medium of talk, the space in which citizens deliberate about their common affairs….[51]

And as Occupy at least made abortive attempts to do after the shutdown of the camps, the Indignados shifted to carrying out social justice and economic democracy initiatives at the local level. This took the form not only of developing toolkits for alternative, DIY economics, but also of direct action campaigns against injustice.

> The neighborhood assemblies usually meet once a week and they constitute public spaces for debate, where neighbors exchange ideas and visions about general topics (the economy, unemployment, housing, the financial system, education, social security), but also about local problems that particularly affect their neighborhood. A large number of activities have been organised within these assemblies, one of the most interesting of which is the creation of so-called 'time banks', or bancos de tiempo. Time banking is a pattern of non-monetary reciprocal service, which seeks to address requirements outside of the market sphere… In this way, time banks seek to provide incentives and rewards for work usually done on a volunteer basis… The neighbors can create an online profile where they share information about the services they can provide, and they can get in touch with people who offer services they are interested in. They conclude the transaction between one another, and a mediation commission is planned in case any problems come up.
>
> Other initiatives that originated within the assemblies include the creation of organic vegetable gardens in empty neighborhood spaces, aiming to reduce food dependency, and the constitution of co-operatives of agro-ecological consumption, which seek to shorten the commercialization circuits and establish closer relationships to producers…
>
> One of the most successful actions of the 15-M movement that the neighborhoods have helped to coordinate is the 'stop forced evictions' campaign… Around 200 evictions have been stopped since last year. Since the beginning, a working group on

[51] "The #Spanishrevolution starts in Madrid as an experiment in participatory democracy #acampadasol #yeswecamp #democraciarealya," *WL Central*, May 19, 2011 <wlcentral.org>.

> housing rights was constituted inside of the indignados movement… The Platform of Those Affected by a Mortgage… , an association that was created in 2009 to try to find a solution to the drama of forced evictions, tightly connected to the 15-M movement, was able to provide its people-gathering strength and visibility to the stop evictions. The neighborhoods were a key actor in this process: they started collecting information of the evictions planned in their area, and organized the mobilization of activists on eviction dates. Through the celebration of mutual assemblies and the sharing of information through social networks, housing has become one of the main targets for the neighborhood assemblies to work on and mobilize around.
>
> Under the slogan 'No human being is illegal', the Neighborhood Brigades for Human Rights Monitoring… have been formed within some popular assemblies in Madrid, mostly in those neighborhoods with big immigrant collectives, with the goal of rendering visible the police raids on the immigrant population, as well as denouncing the xenophobic and racist bias that they usually display. The neighborhood assemblies, with their Human Rights Monitoring Brigades, have also been the cradle of protest against immigration detention centres… , advocating for their closure and the improvement of detainee's human rights guarantees.
>
> The indignados have revitalized the neighborhood movement: new forms of cooperation coexist with the old neighborhood associations, and they are coordinating and sharing a large number of initiatives and joint actions. The neighborhood associations, which appeared in Madrid in the late sixties, had gradually moderated their demands and plunged into a light sleep. The 15-M movement has reawakened local politics and boosted community-based mobilization: we are witnessing how old and new forms of neighborhood organization are coexisting, coordinating and mutually learning from one another.[52]

According to Bernardo Gutierrez, the Indignados also developed new systems of networked P2P governance that added a new layer of meaning to the initiatives above:

> During the eruption of the 15M movement in May 2011, when the streets of Spain were filled with 'indignados', a technological innovation took place that went almost unnoticed: the Tweetómetro Yes We Camp. The collective Platoniq, specializing in technologies for the commons, devised this tool that allows for activism on the streets and the Internet to merge. Any Internet user could vote via Twitter on the proposals discussed at the citizen assemblies on the squares. Anyone could tweet (yes) or (no) with a hashtag to cast a vote. The Tweetómetro bore two powerful innovations for the future of democracy. First, political participation can be governed by the realtime feeds that signify social media. Second, public space can become a revised, more participatory and open version of the ancient Greek polis. Networks of citizens are enabled to coordinate spaces of power provided by the institutions of this new P2Polis.
>
> This novel model of collective participation has turned Spain into one of the countries closest to the P2P society. The 15M have kick-started initiatives such as Goteo,

[52] Michel Bauwens, "Spain is Ground Zero for the P2P Revolution," *P2P Foundation Blog*, May 29, 2011 <blog.p2pfoundation.net>.

> a crowdfunding platform, Nockin, a search engine for P2P services, Kune, a platform facilitating cooperation, or Nolotiro, a platform for the exchange of used goods…[53]

In April 2012, M15 threw its support behind a nationwide general strike called by the CNT labor federation, that included 91% of all employees of large enterprises

> Spain's General Strike could not have come at a more significant moment from the perspective of the global people's movement. As ROAR magazine points out, Spain's General Strike was initially called for by the anarcho-syndicalist CNT union but it was ultimately a success because the call was taken up and powered by the youthful militancy of the indignados…[54]

Greece: The Syntagma Movement. From Spain, the movement spread quickly to Syntagma Square in Athens, with crowds eventually growing to half a million.

The leaderless organization of the Greek movement, its lack of official demands or statements, and its self-organized administration of the camps, followed the Spanish pattern:

> The open, egalitarian and participatory character of the procedures and ways of organising derives from the will to find such procedures that can unite all who are affected by the crisis and dissatisfied with the current political system. The pacifist and non-party character of the original call-out was the condition that shaped a common public sphere where everyone would meet without any badges to co-decide by discussing at the same level.
>
> The refusal to assign or elect representatives does not only cause unease to the forces of the state who do not know how to deal with this, as it overturns their tactic of manoeuvring, of libelling and destroying popular expressions of rage. More than that, this "facelessness"… is the best way for the movement to safeguard transparency in its organising, as well as the will for whatever is created to express everyone—not just its most so-called "vanguard" or "politicised" part.
>
> And so, the matter of procedures is not simply a matter of organising but a key issue regarding its political essence… This understanding that rejects any kind of representation or mediation, is safeguarded by the constant circulation of revocable positions and runs through all structures and functions born by this movement.
>
> In this spirit, the stance of the movement toward Mass Media is also differentiated, with the refusal to engage with them, not even by way of issuing press releases. With the screening of what part of its procedures and organising is photographed or taped, and most importantly, with the creation of the movement's own channels of communication—with its main website www.real-democracy.gr, being the only mediumvoice of its decisions.
>
> The daily people's assembly of Syntagma square… , like the corresponding ones in other cities, is the only one that holds the right to decision-making. The topics in

[53] Amaia Arcos, quoted in Chris Pinchen, "Background to #spanishrevolution #asambleabarrios #europeanrevolution," *P2P Foundation Blog*, May 30, 2011 <blog.p2pfoundation.net>.

[54] Marta Sanchez, "Losing Strength? An Alternative Vision of Spain's Indignados," *Social Network Unionism*, July 3, 2012 <snuproject.wordpress.com>.

> each popular assembly are defined according to discussion, the demands and the proposals submitted in previous assemblies…
>
> The final resolutions are shaped during the assembly according to the comments of the speakers and are put up for approval, always before midnight, in order not to exclude those who work and those who have to use public transportation to return to their neighbourhoods.
>
> Everyone has a right to speak and in the beginning of each assembly, after reading out and approving its topics, tickets are distributed to everyone who wishes to do so; speakers are selected by draw during the assembly. Usually speakers range between 80 and 100 in their number, while more than 2000 people take part in the assembly on a daily basis. Despite this element of chance, experience so far has proven this to be the best way to avoid any phenomena of imposition of specific agendas or the influencing of the assembly's decisions by organised interventions…
>
> At the moment, there are more than 15 working groups and 12 thematic ones. The working groups comprise the cornerstone of life at the square and their contribution so far has been priceless. Not only because they offer practical solutions and because so far they have responded, despite many problems and delays, to the everincreasing needs for the shaping, the functionality and the procedures at the square, but most importantly because these groups themselves comprise the spirit of contribution of the people, their will to take life into their own hands and the capacities of their selforganising, without experts and capital, based on their own capacities…
>
> Until now, functioning groups include those of technical support, material supply, artists, cleaning, administrative support, canteen-nutrition, translation, respect (patrol), communication/multimedia, legal support, neighbourhood outreach, health, time bank and service exchange, composure and messengers.[55]

The Syntagma Square movement, like the Plaza del Sol movement before it and the Occupy movement after, was consciously anti-political and anti-party in nature.

> For the people gathered in Syntagma, the intense political manoeuvring in the corridors of parliament seems to matter little. Theirs is a mass mobilisation that draws a distinction between representational and grassroots politics… [The legacy political system] is a system of beliefs, values, expectations and political roles and identities that cannot be abolished simply by replacing the head or members of the government…
>
> By now, the distance between the people and their representatives might seem unbridgeable; as the old system of government crumbles under the burden of sovereign debt, a new, grassroots system of politics is starting to make itself heard from the ground.[56]
>
> This protest marks in many ways a turning point. Apart from the use of social media as a vehicle for social mobilisation… the most obvious new factor is the persistence,

[55] *Ibid*.

[56] Bernardo Gutierrez, "15M—Towards Real-Time Democracy," *OpenDemocracy.net*, May 7, 2012 <www.opendemocracy.net>.

> the large numbers and the synthesis of the participants. Demonstrators have [until now] participated in such great numbers only in rallies of political parties and only after extensive organisation and costs by parties' structures… Even more surprising is perhaps the tenacity of the demonstrators; … such a steady flow of large numbers of people for so long is utterly new in recent Greek history. Most importantly though the synthesis of the crowds gathering in Syntagma Square is also refreshingly new. The mosaic of Syntagma comprises individuals, of all ages, social and professional backgrounds, with different demands, concerns, professional, social and economic backgrounds, personal aims, or political convictions…
>
> Despite their vast differences, what unites them all is a deep disappointment of their representatives and more broadly of the political staff…
>
> Yet the triggers that brought thousands to the streets have been the recent unquestionable deterioration of the quality of life and, most importantly, the clear lack of future prospects for improvement…
>
> … The protesters have loudly, clearly and repeatedly claimed their independence from any kind of representative body. They have voiced their disapproval for all political parties… The change in this regard is monumental. The tradition in Greece has been, for too long, to demonstrate after a call by and under the auspices of some organisation or representative body. This form of social mobilisation of individuals, without the control or guardianship of any formal body is entirely new for Greece…

Electoral Offshoots of M15 and Syntagma. Although the occupation efforts of M15 and Syntagma died down, their activist networks gave rise to closely associated political parties (Podemos in Spain and Syriza in Greece, respectively).

Podemos, founded in early 2014, grew rapidly; it garnered 8% of the vote in the May elections, and was polled at 27% public support in November. To a large extent, Podemos follows a stigmergic model of organization similar to that of the Indignados, based on the free formation of new nodes with little entry cost. The party has around 1,000 "branches" (or nodes) with about 200,000 members, and has grown according to a "hacker logic" of free replication.

> To do this… you need a low cost of entry in relation to both tools and knowledge. This is precisely what Podemos ensured, with remarkable results: 'To create a branch you only need a Facebook account, an email and a meeting. No membership, no fees. So, in the first two months we got more than 300 branches, not only in different places but also branches that had to do with specific fields, like education, culture, the environment.' The number of branches has since more than tripled and includes ones focused on feminism, psychology, a basic income and even music—in other words, whatever the participants want them to be…
>
> To continue the tech-speak, Podemos in effect operates an open-source development model in which access to and redistribution of the Podemos 'blueprint' are universal, but the 'licence agreement' also includes the right of redesign and improvement.

> Consequently, since its inception, Podemos's internal development and political trajectory have been shaped by the input of its members—and, indeed, non-members.[57]

It includes a broader base—older, and with a larger working class component—than the Indignado protestors of 2011.[58] And its political message is a departure from the workerism of the conventional parties of the Left, reflecting the expansion of the precariat and fragmentation of the traditional working class under neoliberalism, and a reduced willingness of the majority to identify with their roles in the production process.[59] Although it is in a broad sense an offshoot or outgrowth of M15, it has to some extent evolved beyond it and developed an institutional logic of its own; the party's agenda and leading figures, representing a broader mass base, are no longer responsible to the activist network of 2011—a fact which incurs some resentment.[60]

In Greece the Syriza party, which similarly emerged from Syntagma's activist networks and associated civil society organizations, managed to take political power in early 2015 after winning a plurality in the national elections. In Greece, more than Spain, the activist networks of 2011 largely went dormant after the Syriza victory. And in an object lesson on the futility of electoral strategies as anything but an auxiliary, administration of a government carried a logic of its own and resulted in a considerable moderation and watering down of its agenda compared to that of the Syntagma movement. It ended in a full-scale capitulation to the European Central Bank's demands.

Conclusion. This first wave of activism from the Arab Spring, which eventually spread to Europe, as well as the tent cities in Israel and the Madison protests against Scott Walker's austerity regime, dwarfed the post-Seattle anti-globalization movement, and rivaled the global protests of 1968. And, as Pankaj Mishra argued, the common denominator in this unprecedented wave of activism was global opposition to neoliberalism by the working and middle classes, exacerbated by the global economic downturn since 2007.[61]

Joel Kotkin saw the London riots of early August as part of a looming global class war, "a growing global class chasm that threatens to undermine capitalism itself." Among its root causes are "globalization, which has taken jobs from bluecollar and now even white-collar employees; [and] technology, which has allowed the fleetest and richest companies and individuals to shift operations at rapid speed to any locale… " Members of both the Tea Parties and the Left share a perception that "the power structure, corporate and government, work together to screw the broad middle class."[62]

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[57] "GENERAL STRIKE! Spain's indignados inspire Occupy.| Adbusters," *Social Network Unionism*, April 13, 2012 <snuproject.wordpress.com>.

[58] "Democracy is Born in the Square," *People's Assemblies Network*, June 12, 2011 <www.peoplesassemblies.org>.

[59] Hara Kouki and Antonis Vradis, quoted in Michel Bauwens, "Short history of the recent events in Greece, and what they portend," *P2P Foundation Blog*, June 19, 2011 <blog.p2pfoundation.net>.

[60] Thalia Tzanetti, quoted in Bauwens, "Short history of the events in Greece."

[61] Andrew Dolan, "Podemos: Politics by the people," *Red Pepper* (February 2015) <www.redpepper.org.uk>.

[62] Carlos Delclos, "Podemos: the political upstart taking Spain by force," *ROAR Magazine*, December 9, 2014 <roarmag.org>.

IV. Occupy Wall Street

In September 2011, Occupy Wall Street and the global Occupy movement it sparked emerged as a second wave of activism on the same scale as the first wave of global activism associated with the Arab Spring.

Until it actually got underway, Occupy showed every sign of being just another top-down protest. In fact it came very close at the beginning to being coopted by the Workers' World Party, the organization behind the International A.N.S.W.E.R. coalition that dominated the earlier movement against the Iraq War.[63]

That it wasn't is in considerable part thanks to David Graeber, an anarchist professor of sociology who teaches at Goldsmiths, University of London.

On July 13, 2011 *Adbusters* magazine put out a call—really more of a trial balloon—for an occupation of Wall Street two months later, on September 17.

> Alright you 90,000 redeemers, rebels and radicals out there,
>
> A worldwide shift in revolutionary tactics is underway right now that bodes well for the future. The spirit of this fresh tactic, a fusion of Tahrir with the acampadas of Spain, is captured in this quote: "The antiglobalization movement was the first step on the road. Back then our model was to attack the system like a pack of wolves. There was an alpha male, a wolf who led the pack, and those who followed behind. Now the model has evolved. Today we are one big swarm of people."
>
> —Raimundo Viejo, Pompeu Fabra University
>
> Barcelona, Spain
>
> The beauty of this new formula, and what makes this novel tactic exciting, is its pragmatic simplicity: we talk to each other in various physical gatherings and virtual people's assemblies … we zero in on what our one demand will be, a demand that awakens the imagination and, if achieved, would propel us toward the radical democracy of the future … and then we go out and seize a square of singular symbolic significance and put our asses on the line to make it happen.
>
> The time has come to deploy this emerging stratagem against the greatest corrupter of our democracy: Wall Street, the financial Gomorrah of America.
>
> On September 17, we want to see 20,000 people flood into lower Manhattan, set up tents, kitchens, peaceful barricades and occupy Wall Street for a few months. Once there, we shall incessantly repeat one simple demand in a plurality of voices.
>
> Tahrir succeeded in large part because the people of Egypt made a straightforward ultimatum—that Mubarak must go—over and over again until they won. Following this model, what is our equally uncomplicated demand?
>
> The most exciting candidate that we've heard so far is one that gets at the core of why the American political establishment is currently unworthy of being called a democracy: we demand that Barack Obama ordain a Presidential Commission tasked

[63] Dolan, "Podemos."

> with ending the influence money has over our representatives in Washington. It's time for DEMOCRACY NOT CORPORATOCRACY, we're doomed without it.
>
> This demand seems to capture the current national mood because cleaning up corruption in Washington is something all Americans, right and left, yearn for and can stand behind. If we hang in there, 20,000-strong, week after week against every police and National Guard effort to expel us from Wall Street, it would be impossible for Obama to ignore us. Our government would be forced to choose publicly between the will of the people and the lucre of the corporations.
>
> … Beginning from one simple demand—a presidential commission to separate money from politics—we start setting the agenda for a new America.[64]

The magazine's involvement began and ended with that action.

The first steps toward implementation were taken by New Yorkers Against Budget Cuts—a coalition of student activists and community leaders—who had camped out across from City Hall to protest city budget cuts. They found the idea of a similar occupation of Wall Street appealing, and attempted to take charge of planning for the September event. They called a "General Assembly," to be held on August 2 at Bowling Green Park, to plan the occupation. But despite the "general assembly" language, what they had in mind was a lot closer to the conventional verticalist model.

> A "general assembly" means something specific and special to an anarchist. In a way, it's the central concept of contemporary anarchist activism, which is premised on the idea that revolutionary movements relying on coercion of any kind only result in repressive societies. A "GA" is a carefully facilitated group discussion through which decisions are made—not by a few leaders, or even by majority rule, but by consensus. Unresolved questions are referred to working groups within the assembly, but eventually everyone has to agree, even in assemblies that swell into the thousands…
>
> When Graeber and his friends showed up on Aug. 2, however, they found out that the event wasn't, in fact, a general assembly, but a traditional rally, to be followed by a short meeting and a march to Wall Street to deliver a set of predetermined demands ("A massive public-private jobs program" was one, "An end to oppression and war!" was another). In anarchist argot, the event was being run by "verticals"—topdown organizations—rather than "horizontals" such as Graeber and his friends. [Georgia] Sagri and Graeber felt they'd been had, and they were angry.[65]

As Graeber recalled, the movement as it had evolved to that point gave every indication of being a conventional protest that would fizzle out with little notice.

> … [A] local anti-budget cut coalition top-heavy with NGOs, unions, and socialist groups had tried to take possession of the process and called for a "General Assembly" at Bowling Green. The title proved extremely misleading. When I arrived, I found the

[64] Delclos, "Podemos."

[65] Pankaj Mishra, "The dead end of globalisation looms before our youth," *The Guardian*, August 25, 2011 <www.guardian.co.uk>.

> event had been effectively taken over by a veteran protest group called the Worker's World Party, most famous for having patched together ANSWER one of the two great anti-war coalitions, back in 2003. They had already set up their banners, megaphones, and were making speeches—after which, someone explained, they were planning on leading the 80-odd assembled people in a march past the Stock Exchange itself.[66]

But Graeber, noticing that most of the people who showed up weren't all that happy with the professional activists' self-appointed leadership ("the sort of people who actually like marching around with pre-issued signs and listening to spokesmen from somebody's central committee"[67]), provided the alternative horizontalist model the movement crystallized around. The demonstration instead emerged as a leaderless, horizontal movement.

> But as I paced about the Green, I noticed something… [T]his wasn't really a crowds of verticals… They were mostly pretty obviously horizontals: people more sympathetic with anarchist principles of organization, non-hierarchical forms of direct democracy, and direct action. I quickly spotted at least one Wobbly, a young Korean activist I remembered from some Food Not Bomb event, some college students wearing Zapatista paraphernalia, a Spanish couple who'd been involved with the indignados in Madrid … I found my Greek friends, an American I knew from street battles in Quebec during the Summit of the Americas in 2001, now turned labor organizer in Manhattan, a Japanese activist intellectual I'd known for years … My Greek friend looked at me and I looked at her and we both instantly realized the other was thinking the same thing: "Why are we so complacent? Why is it that every time we see something like this happening, we just mutter things and go home?"—though I think the way we put it was more like, "You know something? Fuck this shit. They advertised a general assembly. Let's hold one."
>
> So we gathered up a few obvious horizontals and formed a circle, and tried to get everyone else to join us… We created a decision-making process (we would operate by modified consensus) broke out into working groups (outreach, action, facilitation) and then reassembled to allow each group to report its collective decisions, and set up times for new meetings of both the smaller and larger groups. It was difficult to figure out what to do since we only had six weeks, not nearly enough time to plan a major action, let alone bus in the thousands of people that would be required to actually shut down Wall Street—and anyway we couldn't shut down Wall Street on the appointed day, since September 17, the day Adbusters had been advertising, was a Saturday. We also had no money of any kind.
>
> Two days later, at the Outreach meeting we were brainstorming what to put on our first flyer. Adbusters' idea had been that we focus on "one key demand." This was a brilliant idea from a marketing perspective, but from an organizing perspective, it

[66] Joel Kotkin, "The U.K. Riots and the Coming Global Class War," *Forbes*, August 15, 2011 <www.forbes.com>.

[67] The WWP was "almost a caricature" of Old Left Stalinist authoritarianism, according to Graeber. It continues to justify the Soviet invasion of Czechoslovakia in 1968 and the Chinese suppression of the Tienanmen protesters in 1989. The millions of people who participate in WWPorganized protests like the ANSWER anti-war protests have little idea that all the decisions are made by a handful of mostly white party cadres, hiding behind black and Latino front men. Graeber, *The Democracy Project: A History, A Crisis, A Movement* (New York: Spiegel & Grau, 2013), p. 25.

made no sense at all. We put that one aside almost immediately. There were much more fundamental questions to be hashed out. Like: who were we? Who did want to appeal to? Who did we represent? Someone… suggested, "well, why not call ourselves 'the 99%'? If 1% of the population have ended up with all the benefits of the last 10 years of economic growth, control the wealth, own the politicians … why not just say we're everybody else?" The Spanish couple quickly began to lay out a "We Are the 99%" pamphlet, and we started brainstorming ways to print and distribute it for free.

Over the next few weeks a plan began to take shape… We quickly decided that what we really wanted to do was something like had already been accomplished in Athens, Barcelona, or Madrid: occupy a public space to create a New York General Assembly, a body that could act as a model of genuine, direct democracy to contrapose to the corrupt charade presented to us as "democracy" by the US government. The Wall Street action would be a stepping-stone. Still, it was almost impossible to predict what would really happen on the 17th. There were supposed to be 90,000 people following us on the internet. Adbusters had called for 20,000 to fill the streets. That obviously wasn't going to happen. But how many would really show up? What's more, we were keenly aware that the NYPD numbered close to 40,000; Wall Street was, in fact, probably the single most heavily policed public space on the face of Planet Earth. To be perfectly honest, as one of the old-timers scrambling to organize medical and legal trainings, lessons on how to organize affinity groups and do nonviolent civil disobedience, seminars on how to facilitate meetings and the like, for most of us, the greatest concern during those hectic weeks was how to ensure the initial event wouldn't turn out a total fiasco, with all the enthusiastic young people immediately beaten, arrested, and psychologically traumatized as the media, as usual, simply looked the other way.

… On September 17th itself, I was troubled at first by the fact that only a few hundred people seemed to have shown up. What's more the spot we'd chosen for our General Assembly, a plaza outside Citibank, had been shut down by the city and surrounded by high fences. The tactical committee however had scouted out other possible locations, and distributed maps: around 3 PM, word went around we were moving to location #5—Zuccotti Park—and by the time we got there, I realized we were surrounded by at least two thousand people.

The real credit for what happened after that—within a matter of weeks, a movement that had spread to 800 different cities, with outpourings of support from radical opposition groups as far away as China—belongs mainly to the students and other young people who simply dug themselves and refused to leave, despite the endless (and in many cases, obviously illegal) acts of police repression designed to intimidate…[68]

One reason for the totally unexpected success of the Occupy movement, Graeber suspects, is the collapse of so many people's hopes for change through the political system:

[68] "#Occupy Wall Street: A Shift in Revolutionary Tactics," *Adbusters* blog, July 13, 2011 <www.adbusters.org>.

> After all, how could there have been a more perfect alignment of the stars than happened in 2008? That year saw a wave election that left Democrats in control of both houses of congress, a Democratic president elected on a platform of "Change" coming to power at a moment of economic crisis so profound that radical measures of some sort were unavoidable, and at a time when popular rage against the nation's financial elites was so intense that most Americans would have supported almost anything. If it was not possible to enact any real progressive policies or legislation at such a moment, clearly, it would never be. Yet none were enacted… Clearly, if progressive change was not possible through electoral means in 2008, it simply isn't going to possible at all. And that is exactly what very large numbers of Americans appear to have concluded.[69]

One of the most disillusioned demographics, not coincidentally, was also the central demographic in the Occupy movement: the Millennials who had voted for Obama in droves in 2008. They were college graduates unemployed high into the double digits, working unpaid internships, living in their parents' houses again— basically an analog of the Japanese "lost generation" who had discovered that all the propaganda promises about working hard, getting an education and the rest of it were lies and betrayals.

> So in civic affairs as in economic ones, a generation of young people had every reason to feel they'd done exactly what they were supposed to do according to the rulebook— and got worse than nothing. What Obama had robbed them of was precisely the thing he so famously promised: Hope—hope of any meaningful change via institutional means in their lifetimes. If they wanted to see their actual problems addressed, if they wanted to see any sort of democratic transformation of America, it was going to have to be through other means.[70]

So those on the traditional Left who call on Occupy to "do it right" are really missing the point. As Graeber pointed out, the movement very nearly started out that way—and had it done so, it would have failed.

> Asking why OWS refuses to create a leadership structure, and asking why we don't come up with concrete policy statements, is of course two ways of asking the same thing: Why don't we engage with the existing political structure so as to ultimately become a part of it?
>
> If one were compiling a scrapbook of worst advice ever given, this sort of thing might well merit an honorable place. Since the financial crash of 2008, there have been endless attempts to kick off a national movement against the depredations of America's financial elites taking the approach such journalists recommended. All failed. Most failed miserably. It was only when a movement appeared that resolutely refused to

[69] Drake Bennet, "David Graeber, the Anti-Leader of Occupy Wall Street," *BusinessWeek*, October 26, 2011 <www.businessweek.com -occupy-wall-street-10262011.html>.

[70] Graeber, "On Playing By The Rules—The Strange Success of OccupyWallStreet," *Countercurrents.org*, October 23, 2011 <www.countercurrents.org>.

> take the traditional path, that rejected the existing political order entirely as inherently corrupt, that called for the complete reinvention of American democracy, that occupations immediately began to blossom across the country.[71]

From its beginning, Occupy Wall Street was heavily influenced by the "horizontalism" of the Spanish Indignados, and before that of the Argentinian movements of 2001. Graeber, in an interview with Ezra Klein, referred to it as an example of prefigurative politics:

> DG: … It's pre-figurative, so to speak. You're creating a vision of the sort of society you want to have in miniature. And it's a way of juxtaposing yourself against these powerful, undemocratic forces you're protesting. If you make demands, you're saying, in a way, that you're asking the people in power and the existing institutions to do something different. And one reason people have been hesitant to do that is they see these institutions as the problem.
>
> EK: So if you say, for instance, that you want a tax on Wall Street and then you'll be happy, you're implicitly saying that you're willing to be happy with a slightly modified version of the current system.
>
> DG: Right. The tax on Wall Street will go to people controlled by Wall Street.
>
> EK: By which you mean government.
>
> DG: Yes. So we are keeping it open-ended. In a way, what we want is to create spaces where people can think about questions like that. In New York, according to law, any unpermitted assembly of more than 12 people is illegal in New York. Space itself is not an openly available resource. But the one resource that isn't scarce is smart people with ideas. So we're trying to reframe things away from the rhetoric of demands to a questions of visions and solutions. Now how that translates into actual social change is an interesting question. One way this has been done elsewhere is you have local initiatives that come out of the local assemblies.[72]

Graeber also spoke favorably of the "Buenos Aires strategy" from the Argentine meltdown as a model for Occupy:

> Essentially, the strategy is to create alternative institutions, based on horizontal principles, that have nothing to do with the government, and declare the entire political system to be absolutely corrupt… Hence after the popular economic collapse in Argentina in 2001, a popular uprising that ousted three different governments in a matter of months settled into a strategy of creating alternative institutions based on the strategy of creating alternative institutions based on the principles of what they themselves called 'horizontality"; popular assemblies to govern urban neighborhoods, recuperated factories and other workplaces… , self-organized unemployed associations… , even, for a while, an alternative currency system.[73]

[71] Graeber, *The Democracy Project*, p. 27.
[72] Graeber, "On Playing By the Rules."
[73] *Ibid*.

John Holloway argued, in similar terms, that Occupy shouldn't be concerned with influencing state policy or taking control of the present system—which is becoming increasingly impossible—but with seceding from the system and telling capital to go to hell.

> … [P]erhaps we can hope that non-state oriented politics will become more and more common and more widespread throughout society…
>
> As a refusal?
>
> Yes, as a refusal. As a kind of total breakdown of the old way of doing things, which might bring a few little benefits but really it didn't take anybody very far. And I think that more and more people are being forced to reinvent their politics or reinvent their ideas about politics, both in terms of protests—but also I think in terms of creating alternatives. If the system has no room for us, if the system simply leaves 50% of young people unemployed, if state benefits are cut back, if the state absolutely refuses to negotiate, if the police become more repressive, then I think we are forced not only to think of creative forms of protest but also ways of how we actually survive and how we actually create alternative ways of living… But I think what the crisis is also telling us is that that's the way to go, but that we haven't gone far enough yet. We're not yet in a situation where we can just tell capital to go to hell and survive without it… But I think that's the direction we have to go in.[74]

Tiberius Brastaviceanu of the Multitude Project describes the Occupy camps as "embryos of the new world":

> The camps are incubators for new systems of governance… , for open and decentralized economical systems with alternative channels of value exchange (currencies), for a new culture, for new education systems… These new institutions are taking shape in these spaces and are now starting to diffuse throughout society. It is a global phenomenon. The world is going through a profound metamorphosis process.
>
> Yes,… some people may think that we can't apply this to the entire society. They are dead wrong. The new technology enables the scaling of these systems, this is in fact the essence of what we've been saying form the beginning.[75]

The Occupy movement has functioned as a teach-in, with speakers like Michel Bauwens and Juliet Schor appearing at Zuccotti Park. Michel Bauwens of the Foundation for Peer-to-Peer Alternatives appeared on November 2:

> To succeed in social change, you need 3 things.
>
> a genuine mass movement. As the first native movement and great hope of the digital age that is what #ows is all about.
>
> concrete alternatives that can change our lives and allow us to live our values right now. This is what commons-based peer production provides—a new way of producing value.

[74] Graeber, *The Democracy Project*, p. 98.
[75] *Ibid*., pp. 88–89.

> the ability to be able to stop bad policies, and propose new ones that allow alternatives to survive and thrive, for which we need true democratic processes.
>
> A 'commons' rather than 'market state' orientation is a fruitful way to think about solving humanity's problems in a new way.[76]

And Schor spoke November 4 on the principles of Plenitude.[77]

At the time of the nationwide wave of Occupy camp shutdowns in November 2011, many observers thought it removed an impediment to this new phase of the revolution—marking, not the dissolution of the movement, but a phase transition laying the ground for the next wave.

> We've witnessed surface waves in the past [Arab Spring, M15, etc.]… Is the #occupy everywhere the last wave able to tip the establishment over? I don't think so. But every one of these waves leaves permanent marks, which will affect the next wave, and the way the establishment will react to it. If we are not at the tipping point yet, it doesn't mean that change will not happen. The transformative forces introduced by the new technology are extremely powerful. Change will eventually happen, but when and how?
>
> Almost all occupation camps around the world have been dismantled. The energy they had concentrated within them is now diffusing into society, operating these permanent changes that will pave the way for the next wave to come. Neighborhoods are now organizing using new methods that emerged during the occupation. New economical initiatives are taking shape, establishing open and decentralized means of production and distribution of value, establishing new institutions based on a new paradigm, almost entirely outside of the system.[78]

Marina Sitrin and Luis Mareno-Caballud made a comparison to the Spanish Indignado movement:

> This phase is characterized by the gradual shift from a focus on acts of protest… to instituting the type of change that the movements actually want to see happen in society as a whole. The capacity to create solutions grows as the movements expand in all directions, first through the appearance of multiple occupations connected among themselves, and then through the creation of—or collaboration with—groups or networks that are able to solve problems on a local level through cooperation and the sharing of skills and resources. For example, Occupy Harlem is using direct action to prevent heat from being shut off in a building in the neighborhood…
>
> In the case of Spain, this expansion began in June, when the movement decided to focus its energy more on the assemblies and the working groups than on maintaining the encampments themselves. To maintain the miniature models of a society that the movement wished to create did not necessarily contribute to the actual changes

[76] Ezra Klein, "You're creating a vision of the sort of society you want to have in miniature," *The Washington Post*, October 3, 2011 <www.washingtonpost.com>.

[77] Graeber, *The Democracy Project*, p. 267.

[78] Jerome Roos, "Talking About a Revolution With John Holloway," *John Holloway*, April 13, 2013 <www.johnholloway.com.mx>.

> that were needed in the populations that needed them the most. Which is why the decision to move away from the encampments was nothing more than another impulse in the constructive aims of the movement: the real encampment that has to be reconstructed is the world.[79]

From the outset, the Occupy movement generated innovations using the same Bazaar model ("open source protest") John Robb has noted in Al Qaeda and the file-sharing movement.

> Essential rules of open source protest include:
>
> A promise. A simple goal/idea that nearly everyone can get behind. Adbusters did pretty good with "occupy wall street." Why? Nearly everyone hates the pervasive corruption of banks and Wall Street. It's an easy target.
>
> A plausible promise. Prove that the promise can work. They did. They actually occupied Wall Street and set up camp. They then got the message out.
>
> A big tent and an open invitation. It doesn't matter what your reason for protesting is as long as you hate/dislike Wall Street. The big tent is already in place (notice the diversity of the signage)…
>
> Let everyone innovate. Don't create a leadership group. The general assembly approach appears to work.
>
> Support anyone in a leadership role that either a) grows the movement or b) advances the movement closer to its goal. Oppose (ignore) anybody that proposes a larger, more complex agenda or those that claim ownership over the movement.
>
> If a new technique works, document it, use it again, and share it with everyone else. Copy everything that works.
>
> Spread the word of the movement as widely as possible.
>
> That's the gist of it…
>
> What's the big picture? Global guerrillas are getting better at building open source protests. We are going to see more and they are likely to become a prominent feature of the geopolitical landscape…[80]

The beauty of the lack of any specific demands—aside from a general sentiment against Wall Street, corporate corruption and the concentration of wealth—is that it leaves the movement open to issue-oriented activism by component movements in a stigmergic, DIY basis. As Graeber put it, "keeping things open-ended lets you provide a forum for a discontent that everyone feels, but haven't found a way to express yet."[81] Occupy as a common platform energizes all the submovements, empowering them to promote more specific anti-Wall Street agendas in their own constituencies. Robb writes:

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[79] Tiberius Brastaviceanu, "What are the #occupy camps?" *Multitude Project*, October 18, 2011 <multitudeproject.blogspot.com>.

[80] "Michael [sic] Bauwens on peer to Peer," *New York City General Assembly* <www.nycga.net>.

[81] "Juliet Schor at Occupy Wall Street on Vimeo" <vimeo.com>.

> Open source protest is usually focused on a single overarching goal. In most recent cases, it's a call for a government that isn't corrupt.
>
> "No corruption" is the type of goal everyone can get behind…
>
> However, the motivations that actually get people to show up in the street day after day are more specific. Every individual or group that turns up has a very specific gripe/goal for protesting (some elements are often violent, but that's to be expected since there is so much diversity of motive). Yet, despite that diversity, everyone is still onboard with the simple overarching goal of the protest.
>
> This diversity of motive makes it very hard for a government to tailor a response/action that will diffuse the protest.
>
> It also make it nearly impossible for any single group or individual to sieze control of the protest and use it to advance their own agenda.[82]

What's more, it's modular: a "self-organizing, self-replicating nodal network."

> Self-organizing, replicating movements have the ability to spread very fast, because they tap into the ability of everyone to participate and organize. There isn't a hierarchical bottleneck that the movement has to go through…
>
> The Occupy movement has a been a protest movement so far. It could also become a movement which builds a new socio-economic-political system. It could model what a new system would look like. If it did that then it would become autopoetic/self-creating.
>
> A virus replicates by tapping into the DNA of another cell. The Occupy movement is operating like a virus in the sense that its tapping into the dissatisfaction with the current system. A virus replicates but it is not autopoetic.
>
> For the Occupy movement to become autopoetic it needs to model new socioeconomic-political methods which it itself uses to run itself…
>
> The Occupy movement so far knows what it is against, there is a great opportunity for it to create what is for. That can happen at Occupy nodes if there is room for facilitated discussion of what are the best solutions. These solutions can then be modeled there. And replicated elsewhere.[83]

Shlok Vaidya describes the modular/stigmergic principles of the Occupy movement quite well:

> OWS currently consists of thousands/millions/hundreds of millions of cognitive nodes:
>
> Connecting/infecting new nodes. As part of this, the organization is generating memes, testing against live audiences, and dropped if counterproductive. Trying to build sufficient capacity before …

[82] Tiberius Brastaviceanu, "The multitude movement limited by the pace of cultural change and of general understanding of open movements," *The Multitude Project*, December 7, 2011 <multitudeproject.blogspot.com>.

[83] Marina Sitrin and Luis Mareno-Caballud, "Occupy Wall Street, Beyond Encampments," *Yes!*, November 21, 2011 <www.yesmagazine.org>.

> Probing attack vectors. A botnet, like a storm, emphasizes growth of its own capacity before attacking (or raining). Mild DDoS on the Brooklyn bridge or around the Bank of America in SF. Anonymous phishing for corruption, etc. This is enabled by …
>
> Decentralized command and control. Perhaps more specifically, modular design. Each protest in each city is led by independent affiliates (if not further broken down). Crashing a protest in Ohio has no impact on the rest of the network.[84]

Alexis Madrigal compares the platform/module architecture of OWS to Twitter's Application Programming Interface:

> Local organizers can choose from the menu of options modeled in Zuccotti, and adapt them for local use. Occupy Wall Street was designed to be mined and recombined, not simply copied.
>
> … Occupy Wall Street today can be seen like the early days of Twitter.com. Nearly everyone accessed Twitter information through clients developed by people outside the Twitter HQ. These co-developers made Twitter vastly more useful by adding their own ideas to the basic functionality of the social network. These developers don't have to take in all of OWS data or use all of the strategies developed at OWS. Instead, they can choose the most useful information streams for their own individual applications (i.e. occupations, memes, websites, essays, policy papers).[85]

Those who criticize Occupy for its lack of structure and clear demands, Douglas Rushkoff writes, are unable "to comprehend a 21st century movement from the perspective of the 20th century politics, media, and economics in which we are still steeped."

> Yes, there are a wide array of complaints, demands, and goals from the Wall Street protesters: the collapsing environment, labor standards, housing policy, government corruption, World Bank lending practices, unemployment, increasing wealth disparity and so on. Different people have been affected by different aspects of the same system—and they believe they are symptoms of the same core problem…
>
> Anyone who says he has no idea what these folks are protesting is not being truthful. Whether we agree with them or not, we all know what they are upset about, and we all know that there are investment bankers working on Wall Street getting richer while things for most of the rest of us are getting tougher. What upsets banking's defenders and politicians alike is the refusal of this movement to state its terms or set its goals in the traditional language of campaigns.
>
> That's because, unlike a political campaign designed to get some person in office and then close up shop… , this is not a movement with a traditional narrative arc. As the product of the decentralized networked-era culture, it is less about victory than sustainability. It is not about one-pointedness, but inclusion and groping toward consensus. It is not like a book; it is like the Internet.
>
> Occupy Wall Street is meant more as a way of life that spreads through contagion…[86]

[84] John Robb, "OCCUPY WALL STREET (the theory)," *Global Guerrillas*, October 3, 2011 <globalguerrillas.typepad.com>.

[85] Graeber, *The Democracy Project*, p. 22.

[86] John Robb, "Protests Everywhere (here's why)," *Global Guerrillas*, July 7, 2013 <globalguerrillas.typepad.com>.

Occupy Wall Street didn't *have* a platform. It was a platform. Their lack of specific demands gave them strength. It was hard to miss what their main focus was: hatred for Wall Street, for the concentration of wealth, for the unholy alliance between Big Business and the state. That common set of values was the basic operating platform of the movement. Beyond that, the specific agendas built on that platform were potentially unlimited. And the common platform was a source of strength for all those individual agendas. The loosely allied subgroups were modules operating on a common platform. There were as many sub-movements piggybacked on Occupy as there were reasons for hating Wall Street, ways of being affected by it, and walks of life among the Occupiers. There was a shared perception of the evil, but as many emphases and agendas as there were people who'd subjectively experienced it.

In networked protest movements, like other stigmergically organized projects ranging from Linux and Wikipedia to al Qaeda, nobody needs "permission" from "leadership" to try out ideas. And whatever idea works for one node instantly becomes property of the whole network. "Occupy Our Homes," which sprang up almost overnight, was one example of such stigmergic innovation. As they used to say in the civics textbooks, Occupy was a "laboratory of democracy."

In the cities outside New York, the protests were less about occupying symbolic targets related to the national banking system, to occupying targets of significance to the daily lives of people in those communities. For example Aaron Bady of Occupy Oakland observed that the movement in Oakland was asserting ordinary people's control of the city:

> But Oakland is not a center of finance and power or a locus of political privilege. There is a "here" here. No one really lives in Wall Street, but those who "Occupy Oakland" do so because they already did. As a result, when we "Occupy Oakland," we are engaged much less in a symbolic protest against "the banks" or "the 1%"— political actions which are given their shape by the political terrain of protesting abstractions— and much more in a very concrete struggle for a right to the city.

/technology/archive/2011/11/a-guide-to-the-occupy-wall-street-api-or-why-the-nerdiest-way-tothink-about-ows-is-so-useful/248562/>.

> After all, the police who dispersed occupiers with tear gas were only doing the sort of thing they had long been accustomed to doing to the poor, transient, and/or communities of color that make up a great majority of Oakland's humanity. They used inhuman means of regulating human bodies—the declaration of "unlawful assembly"— because the city is accustomed to having the power to do so, the effective right to assemble and disassemble Oakland as they see fit. It's that power that's being contested. When a body calling itself the Oakland Commune renames the front yard of city hall after a police shooting victim, sets out to feed and house anyone who stands in line, and refuses to allow the state's purveyors of violence to police them, the challenge is quite direct and legible, a peaceful revolution…
>
> This is why putting up tents in Oakland was not a symbolic protest, not a part of the movement that can be allowed to die. To put up a tent and sleep in it, in violation of city ordinances, is a tiny way to claim the right *to make the city ourselves*…[87]

[87] "Occupy as Self-Organizing, Self-Replicating Node," *Open Collaboration*, October 13, 2011 <opencollaboration.wordpress.com>; taken down, but quoted at "Occupy as Self-Organizing, Self-Replicating Node," Networked Activism and Asymmetric Conflict Study Group, *LinkedIn* <www.linkedin.com>.

What the "appoint leaders and set an agenda" people have never understood is that there's no way to do this without destroying the agility that characterizes stigmergic organization. The vertical approach "generally leads to heavy, slow, expensive, and high-maintenance structures."[88]

As noted earlier, the networked resistance movement's lack of interest in seizing state power reflected a realistic assessment of the results of conventional revolutionary strategy.

> … [T]he traditional aim of revolutionary movements to take over the state is not a solution but part of the problem, as the state "concentrates power in the hands of the few at the apex of its hierarchy, and defends the system that benefits a ruling class of capitalists, landlords, and state managers. It cannot be used for revolution, since it only creates ruling elites… "[89]
>
> For anarchists, this is the key difference between direct action and protest: "protest, however militant, is an appeal to the authorities to behave differently; direct action … is a matter of proceeding as one would if the existing structure of power did not exist"… In the final analysis, therefore, "direct action is the defiant insistence on acting as if one is already free."[90]
>
> Activists committed to prefigurative politics tend to be less interested in making claims on existing authorities than in creating—in the here and now—the type of social relations in which they actually wish to live and work.[91]

A certain kind of verticalist is as fond of pulling out Jo Freeman's "The Tyranny of Structurelessness," as a certain kind of right-libertarian is of Hardin's "Tragedy of the Commons." Although Freeman's essay is commonly drawn on as a critique of consensus process, consensus process was originally developed *in response to* the problems she described (i.e. informal cliques emerging, controlling information and setting agendas, as feminist groups grew to over twenty people or so).

> … almost everyone who is not emerging from an explicitly anti-authoritarian position… completely misread Freeman's essay, and interpret it not as a plea for formal mechanisms to ensure equality, but as a plea for more transparent hierarchy. Leninists are notorious for this sort of thing, but Liberals are just as bad… First, Freeman's argument about the formation of cliques and invisible power structures is taken as an argument that any group of over twenty people will always have to have cliques, power structures, and people in authority. The next step is to insist that if you want to minimize the power of such cliques, or any deleterious effects those power structures might have, the only way to do so is to institutionalize them: to take the de facto cabal and turn them into a central committee… One needs to get power out of the shadows— to formalize the process, make up rules, hold elections, specify exactly

[88] Shlok Vaidya, "Occupy Wall Street, Botnets, and Thousand-Year Storms," *Shlok Vaidya*, October 5, 2011 <shloky.com>.

[89] Alexis Madrigal, "Guide to the Occupy Wall Street API, Or Why the Nerdiest Way to Think About OWS is So Useful," *The Atlantic*, November 16, 2011 <www.theatlantic.com

[90] Douglas Rushkoff, "Think Occupy Wall St. is a phase? You don't get it," *Rushkoff*, October 5, 2011 <www.rushkoff.com>.

[91] Aaron Bady, "The Oakland Commune," *Possible Futures*, December 5, 2011 <www.possible-futures.org>.

> what the cabal is allowed to do and what it is not. In this way, at least, power will be made transparent and "accountable."…
>
> From a practical, activist perspective, this prescription is obviously ridiculous. It is far easier to limit the degree to which informal cliques can wield effective power by granting them no formal status at all, and therefore no legitimacy; whatever "formal accountability structures" it is imagined will contain the cliques-now-turned-committees can only be far less effective in this regard, not least because they end up legitimating and hence massively increasing the differential access to information which allows some in otherwise egalitarian groups to have greater power to begin with… [S]tructures of transparently inevitably… begin to become structures of stupidity as soon as that takes place.[92]

Comparing the Occupy movement to the Populist movement of the late 19th century, Les Leopold distills its lessons down into these bullet points:

> 1. *Shared Movement Experiences*: The populist cooperatives provided the day-to-day shared experiences that bound the movement together on a local, state, and national level. People worked together and struggled together against powerful opponents, often having to suffer vigilante violence to protect their budding cooperatives that stored produce and livestock, and that sold food, supplies, and farm implements. These shared experiences built up the courage and self-respect of millions of participants. They felt part of something big and important. They shared the common identity of populism.
>
> And today? While there are thousands of cooperatives and progressive nonprofit organizations in the country today, they are not linked in substantial ways. It's also not clear if they are creating the common experiences necessary for movement building.
>
> The Occupy Wall Street encampments certainly are (or were) creating such communities, but as currently conceived and constructed, they just aren't suitable for those who don't want to encamp. Also it's not clear if the encampments will survive the current round of evictions…
>
> 2. *Systematic Education*: The populist lecturing system also was key to movement building as it developed a dialogue with everyday farmers about how the economic system really worked and what the movement should stand for. The base of the movement, not just the leadership, became financially literate as it debated and understood the need for a radical restructuring of the financial system based on the "sub-treasury plan."
>
> And today? We don't as yet have anything like a "lecturer" system to engage the American public in an educational discussion. But one could be built in a hurry. There are plenty of us who could link together to build a "Economics for the 99 Percent" program. But it may need something larger to get it going and give it purpose.

[92] Madrilonia/@PinkNoiseRev, "Protest Analysis (5): Towards a new style of political organization for commons-oriented mobilizations?" *P2P Foundation Blog*, July 14, 2013 <http://blog. p2pfoundation.net/unity-without-convergencetowards-a-new-style-of-political-organization-forcommons-oriented-mobilizations/2013/07/14>.

> 3. *Independent Media*: The populist movement was well-supported with a rag-tag collection of small, but vital newspapers and journals—about 100 of them—throughout the country. These media outlets provided continual news about the key economic and political issues of the day. Its editors ran their journals on a shoestring in order to maintain their independence and the clarity of their message.
>
> And today? We do indeed have our rag-tag newsletters, journals, and thousands of websites, with Alternet.org being one of the best. Running on a shoestring is nothing new to them. But at the moment, there is little coordination or shared identity. But that could come as a movement grows.[93]

His reference to systematic education is tantalizing; it reminds me of Thomas Hodgskin's lectures at the London Mechanics Institute, compiled in his book *Popular Political Economy*.

One early example of stigmergic innovation occurred during the first eviction threat from New York City Mayor Bloomberg. Robb speculated on new methods the movement might adopt, if they were severed from Zuccotti Park as a base.

> Let's start off with an assumption. This is Bloomberg vs. Occupy. One mind vs. many minds. The goal is to coerce him into changing his mind. Dissuade him. Get inside his OODA loop.
>
> Go straight for him. Maximize the eviction's taint on Bloomberg's personal brand. Personalize the protest/eviction by attaching the blame to him personally. Pierce his shield of bureaucratic impersonality. Brand the eviction with the name: Bloomberg. This is/will be a global stage, use it.
>
> Confuse him. Lots and lots of Flash Mobs. Shut down bridges and major streets. Overwhelm with volume/speed. Non-violent disruption. As soon as police arrive in force, disperse and reassemble at new location. Bikes + Kids. Disrupt, disrupt, disrupt. More flashmobs = more disruption. As long as the square is under attack, keep the city tied in knots…
>
> Connect with more people than him. Best way to do this: Eyes in the sky. Get a camera/cameras above Liberty Square. Stream the feed. The better the quality the more impact it will have. It will play across the world…[94]

In the midst of the same standoff, Daniel Denvir offered a similar prescription: "funnel the mass movement and zeal for direct action into ongoing and roving occupations of 1 'percent' targets to win victories and sustain the movement through the winter."

> Imagine if there were a new major action every month, in every major American city, targeting a greedy Wall Street bank or defending a family fighting foreclosure?

[93] Jerome Roos, "We Are Everywhere! The Autonomous Roots of the Real Democracy Movement," Paper delivered at 7th annual ECPR general conference: 'Comparative Perspectives on the New Politics of Dissent' Democracy of the Squares: Visions and Practices of Democracy from Egypt to the US Sciences Po Bordeaux, September 4–7, 2013, p. 9. The quote is from Lucien Van der Walt and M. Schmidt, *Black Flame: The Revolutionary Class Politics of Anarchism and Syndicalism* (Oakland: AK Press, 2009).

[94] *Ibid*., p. 18. Quote is from Graeber, *The Democracy Project.*

> Why not occupy everything, as need be, and on a roving basis?…
>
> Hypothetically, the movement could:
>
> Occupy one of the many troublemaking banks, whether it be Bank of America, Goldman Sachs, JP Morgan or whichever, until it agrees to let people fighting foreclosure stay in their homes and offer meaningful debt forgiveness…
>
> Occupy a home where a family is fighting eviction…
>
> … [L]ink up with a labor struggle like that of the Communications Workers of America (CWA) against Verizon's attempt to roll back benefits and retirement…
>
> Occupy where the 1 percent "live, work and play." The super rich all belong to country clubs and other exclusive institutions. If the movement is targeting a specific bank, a picket of the CEO's country club will hit them one place it hurts: their easy comfort amongst high society.[95]

So Bloomberg's first threat to shut down the Liberty Square encampment coincided with the first wave of proposals for transitioning from static geographical bases to swarming. As it was, that first eviction crisis was defused—in part by Occupy's preemptive resort to a variant of the very "take it to the enemy" approach Robb recommended. Occupy

> goes on the offensive. It personalizes the eviction move (already inside Bloomberg's OODA). It finds Bloomberg. He's at a gala dinner at Ciprianis (a Wall Street restaurant). They surround the restaurant and try to enter it to deliver a petition with 310,000 signatures. Bloomberg hides, departs from the rear.[96]

In response to a later eviction crisis, Occupy Oakland responded with a General Strike—again, a form of swarming supplanting the static encampment model.

> We propose a city wide general strike and we propose we invite all students to walk out of school. Instead of workers going to work and students going to school, the people will converge on downtown Oakland to shut down the city.
>
> All banks and corporations should close down for the day or we will march on them.
>
> While we are calling for a general strike, we are also calling for much more. People who organize out of their neighborhoods, schools, community organizations, affinity groups, workplaces and families are encouraged to self organize in a way that allows them to participate in shutting down the city in whatever manner they are comfortable with and capable of.
>
> The whole world is watching Oakland. Let's show them what is possible.[97]

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[95] *Ibid*., p. 20.

[96] Graeber, *The Utopia of Rules: On Technology, Stupidity, and the Secret Joys of Bureaucracy* (Brooklyn and London: Melville House, 2015), pp. 202–203.

[97] Les Leopold, "Don't 'Occupy the Democratic Party'—Four Lessons From the Populist Movement," *Alternet*, December 13, 2011 <www.alternet.org occupy_the_democratic_party%27_–_four_lessons_from_the_populist_movement>.

Other swarming tactics the Occupy movement experimented with included creating a demonstration effect by squatting vacant buildings and occupying foreclosed homes, and encouraging others to do the same. At the outset of the occupation, on September 17, OccupyWallStreet.org issued a "Modest Call to Action" that included this plank:

> We call for the seizure and use of abandoned buildings, of abandoned land, of every property seized and abandoned by speculators, for the people, for every group that will organize them.[98]

This was first actually attempted, so far as I know, by Occupy Oakland, toward the tail end of their General Strike in response to the police attack on their camp. Some participants entered a vacant office building near the occupation site and issued an announcement encouraging the homeless to occupy vacant offices and homes all across Oakland and across the country as well. Unfortunately they did so in a clumsy and ill-advised manner—occupying the building rather abruptly and without warning, and building a bonfire in the middle of the street—and provoked brutal repression by the police.

> *Business Insider* discussed this decision in an article entitled "The Inevitable Has Happened."
>
> We are well aware that such an action is illegal…. Still, the ferocity of the police response surprised us. Once again, they mobilized hundreds of police officers, armed to the hilt with bean bag guns, tear gas and flashbang grenades… The city spent hundreds of thousands of dollars to protect one landlord's right to earn a few thousand every month. Why is this? Whereas the blockade of the port—an action which caused millions of dollars of losses—met with no resistance, the attempt to take one single building, a building that was unused, met with the most brutal and swift response.
>
> The answer: they fear this logical next step from the movement more than anything else. They fear it because they know how much appeal it will have. All across the US thousands upon thousands of commercial and residential spaces sit empty while more and more people are forced to sleep in the streets, or driven deep into poverty while trying to pay their rent despite unemployment or poverty wages. We understand that capitalism is a system that has no care for human needs. It is a system which produces hundreds of thousands of empty houses at the same time as it produces hundreds of thousands of homeless people. The police are the line between these people and these houses. They say: you can stay in your rat-infested park. You can camp out here as long as we want. But the moment that you threaten property rights, we will come at you with everything we have.[99]

This "logical next step," seemingly abortive, was later revived in the aftermath of the national wave of evictions, which spurred Occupy into a new (albeit sporadic and abortive) phase of activism.

After the wave of evictions had passed, according to Jules Lobel, there was a great deal of internal discussion about the future course of the movement. One alternative would be

[98] John Robb, "Bloomberg vs. Occupy," *Global Guerrillas*, October 13, 2011 <globalguerrillas.typepad.com>.

[99] Daniel Denvir, "6 Places to Occupy Next: Protest the 1% Where They Live, Work and Play," *Alternet*, October 13, 2011 <www.alternet.org _next:_protest_the_1_where_they_live,_work_and_play>.

> to create what essentially would be a non-violent guerrilla movement in American cities. For example, Kalle Lasn, the *Adbuster* magazine publisher and originator of the Wall Street encampment idea, reportedly urged a new "swarming strategy of surprise attacks against business as usual." The Chicago occupiers have resolved to have an event a day throughout the winter, such as defending foreclosed homes, sit-ins, banner drops, building parks, providing supplies to the homeless, or guerrilla theater and art. In the same vein, longtime social movement scholar and activist Francis Fox Piven foresaw some time ago that the movement would develop new phases, utilizing "other forms of disruptive protests that are punchier than occupying a square," or "rolling occupations of public space."
>
> This article suggests another alternative, one that focuses on creating sustainable alternative decentralized institutions that reflect in microcosm the egalitarian, democratic vision of society that the Occupy Movement has put forth…
>
> Perhaps the most critical component of OWS is its creation of alternative communities which reflect the egalitarian, democratic world that its activists seek for the future… [T]his perspective seeks to create in microcosm the alternative models that reflect the future world that the activists support, while at the same time using those institutions to engage in direct action to change the current reality…
>
> To me, the long term viability of the OWS movement as a transformative movement lies in the creation of these communities, which not only directly practice what they believe, but seek to reach out and effect the public consciousness through direct action…
>
> There are many groups which are trying to create alternative models in microcosm: food co-ops, farmer markets, cooperative renewable energy projects. Indeed many of these groups have united in an umbrella formation known as the solidarity economy. But none of these groups have captivated the public as has OWS, and very few combine direct action with community building…[100]

Before it fizzeled out as a nationwide movement, Occupy mainly took the second course, but combining the second with the third would have had far more powerful an effect. Occupy groups might have networked with local micromanufacturing movements—hackerspaces and Fab Labs—and other forms of decentralist economics like local currencies and mutual aid institutions, on ways of integrating such tools into local neighborhood economies, building the horizontal framework of a resilient economy that could provide for members' subsistence needs outside the wage system and reduce precarity for the unemployed.

The Occupy Wall Street Sustainability project in early 2012 offered workshops on alternative energy, rooftop gardening, composting, permaculture, and the capital assets for putting them into practice.

> Occupy Wall Street Sustainability will be undertaking a number of ventures in Spring 2012, including a mobile education lab, monthly skillshare and workshop events, an

[100] Robb, "BLOOMBERG VS. OCCUPY: Round I Occupy #ows," *Global Guerrillas*, October 14, 2011 <globalguerrillas.typepad.com>.

> Eco-Summit, and a rooftop farm‼! We support projects in sustainability, environmental awareness, food justice, permaculture, alternative energy & much more‼…
>
> Contributions will be invested in our programming, as well as the construction of our newest venture, ROOFTOP FARMING‼! At two locations in Brooklyn, NY we will be establishing Rooftop Farms, as a platform to expand rooftop farming in NYC. We seek to reach under served communities, who have been traditionally labeled as food deserts, to provide fresh, nutritious produce‼![101]

During its brief period of innovation after the evictions, Occupy made several promising (if abortive) ventures. On December 1, 2011 OccupyWallSt.org announced plans to re-occupy a foreclosed home on the 6th, as "a national kick-off for a new frontier for the occupy movement: the liberation of vacant bank-owned homes for those in need."[102] The re-occupation wa intended as part of a national day of action, "including eviction defense at foreclosed properties, takeovers of vacant properties by homeless families, and foreclosure action disruptions, … in more than 25 cities across the country." The day of action on December 6 saw real estate occupations in more than twenty cities.[103]

David Ronfeldt wrote this at the outset of the campaign:

> So far, the Occupy movement has generated no major incidents that fully manifest swarming. But a lot of statements… speak to its attractiveness; and swarming is implicit in the efforts at multiple occupations—a swarm of occupations. By some accounts, the swarming phase of the Occupy movement is just beginning; if so, it may take the movement in new directions against new targets, perhaps especially if the physical occupations of parks and other sites are ended.[104]

And in the aftermath of Occupy Our Homes, Nathan Schneider wrote, "this is our best glimpse yet of what Occupy Phase II will look like." In fact "Phase II" fizzled out, but for a brief period autonomous local groups introduced another wave of stigmergic innovation on the common platform, independently taking up the idea of occupying independent real estate for the use of the evicted and homeless.

Occupy Homes remained active, in fits and starts, in communities all over the United States through 2012.[105] OH groups around the country commemorated the project's one-year anniversary in December 2012 with a rash of occupations in places like Minneapolis, Buffalo, Atlanta and Woodland CA.

Although Occupy Homes never operated on anywhere near that scale, there are precedents for much larger-scale action on the same model during the Great Depression.

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[101] "Occupy Oakland Calls for a General Strike, Wednesday, November 2," *amor mundi*, October 27 2011 <amormundi.blogspot.com. html>.

[102] "A Modest Call to Action on this September 17th," *OccupyWallSt.org*, September 17, 2011<occupywallst.org>.

[103] "Statement on the Occupation of the former Traveler's Aid Society at 520 16th Street," *Indybay.org*, November 3, 2011 <www.indybay.org>.

[104] Jules Lobel, "The Future of the Occupy Movement," *The Future of Occupy*, December 6, 2011 <thefutureofoccupy.org>.

[105] "Occupy Wall Street Sustainability," *WePay* <www.wepay.com>.

> The scale of housing organizing during the early 1930s, however, dwarfs what we have seen so far today. Crowds of hundreds, and sometimes even thousands of people, mobilized to stop evictions in New York, Chicago, Detroit, Gary, Youngstown, Toledo and other urban centers, mostly under the direction of the Communist Party. As in much of current housing organizing, women were often on the front lines. Masses of these women filled the streets as others climbed to the roofs and poured buckets of water on the police below. Women beat back the police officers' horses by sticking them with long hat pins or pouring marbles into the streets. If the police were successful in moving the family's furniture out to the curb, the crowd simply broke down the door and moved the family's belongings back inside after the police had left.
>
> "There were times that landlords were saying, 'You can't evict anymore in the Bronx. These people control the streets,'" says Mark Naison, a professor at Fordham University and one of the nation's leading researchers about housing organizing during the Depression.[106]

Another promising development was the Occupy movement's action to shut down major ports along the West Coast. The overall size of the actions was smaller than that of November 2 in Oakland, but managed to shut down several terminals. Two months after the initial port shutdown, undertaken in response to the police assault on Oscar Grant Plaza, Occupy Oakland again marched on the city's port. On December 13, companies operating the 26 berths at the port told employees not to show up for work—before the march had even started.[107] Occupy LA protestors tried unsuccessfully to shut down Terminal J at the Long beach port ("because it houses shipping agent SSA Marine, which is partially owned by investment bank Goldman Sachs"), but were cleared away when they attempted to obstruct truck access to the terminal.[108] Although the official longshoremen's union leadership did not endorse the shutdowns, many members stayed home in support of the occupiers. And an ad hoc committee elected by port truck drivers serving the major ports of the West Coast endorsed Occupy port shutdowns.[109]

Although the port shutdowns—again—fizzled out, their precedent added to the permanent toolkit and social capital available to be taken up by subsequent waves of the post-1994 global movement. They were later applied, on a much larger scale and much more effectively, in the Block the Boat campaign of 2014 in response to Israel's assault on Gaza—causing the Israeli merchant shipping giant Zim to abandon attempts to ship Israeli goods to the West Coast.

Occupy the Farm and Strike Debt were two other Occupy spinoffs that persisted for some time after the shutdown of the camps. Occupy the Farm attempted to stop farm evictions, protect irregular neighborhood gardens against shutdowns by land owners, and build ties with the community-supported agriculture movement. Strike Debt, organized around the first anniversary of Occupy in September 2012, was just what its name implied—an attempt to coordinate

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[106] "Occupy Wall Street Goes Home," *OccupyWallStreet.org*, December 1, 2011 <occupywallst.org>.

[107] David Edwards, "Occupy' protesters reclaiming foreclosed homes in 20 cities," *The Raw Story*, December 5, 2011 <www.rawstory.com>.

[108] David Ronfeldt, "What the Occupy Protests Mean: A TIMN Interpretation (Part Two)," *Visions from Two Theories*, December 6, 2011 <twotheories.blogspot.com>.

[109] Han Shan, "Occupy Homes Wins Crucial Victories for Struggling Homeowners Against Big Banks," *Alternet*, June 20, 2012 <www.alternet.org _crucial_victories_for_struggling_homeowners_against_big_banks>.

mass default on debt, and thereby destroy the systemic power of debt. Like occupations of foreclosed and vacant housing, the potential effect on capitalism would have been devastating had it taken off. And Occupy Sandy was a hugely successful networked relief effort, organized by people with backgrounds in the Occupy movement, for victims of Hurricane Sandy on the eastern seaboard.

Another promising innovation came out of Oakland after the camp shutdowns—the discovery of how to capitalize on the lightness and agility of protesters compared to the cops:

> This evolution in tactics was spontaneous, and went unreported in the media. On December 3rd, we took a park and were driven out of it by riot police; that much made the news. What the media didn't report is that we re-took the park later that same evening, and the police realized that it would be senseless to attempt to clear it again, so they packed up their military weaponry and left. Occupy Portland has developed a tactic to keep a park when the police decide to enforce an eviction.
>
> The tactical evolution that evolved relies on two military tactics that are thousands of years old- the tactical superiority of light infantry over heavy infantry, and the tactical superiority of the retreat over the advance…
>
> The lack of weaponry on the part of the protesters grants them the luxury of opposing riot cops at close quarters, or remaining at long range in a refusal to engage the heavy infantry riot police at all. They have the advantage of the retreat, they can quickly move away, or in any direction, and the heavy infantry riot cops lack the swiftness to respond.
>
> So far, all the occupations have, in a grave tactical error, agreed to engage the riot cops when they march in to clear parks. This has been a show of bravado that has the tactical benefits of providing media coverage of the brutal methods of police and the benefit of draining the resources of the oppressor by forcing them to incur the expense of arresting and prosecuting people for trivial offenses.
>
> Now, to move on to the actual application of these tactical principles… , we can take the example of Shemanski park on the 3rd. We occupied the park and set up a few tents and facilities to serve food and coffee. The police soon declared an emergency closure of the park and came out in force, with full riot gear and all the weaponry. The line of riot cops soon forced us out of the park, so someone decided that we ought to march to City Hall… Once there, the riot cops once again lined up to disperse the crowd. However, since City Hall was closed and there was no point in staying there anyway, someone had the idea to march down to the area of town where all the clubs were, so we took off marching again. The riot cops were trailing behind us, as was the truck with the giant speakers on the top repeatedly announcing "This street is open to traffic, individuals blocking traffic will be subject to arrest." Announcing this repeatedly was useless. One principle of non-violent resistance is this: one person has to walk on the sidewalk, 500 people can walk wherever they please. The riots cops had no place to form a line, so they were crippled.
>
> Since we had no clear destination, the police were unable to get ahead of us and set up roadblocks. They were helpless to do anything but trail along as an escort to the march…

> After marching for 3–4 hours, we eventually found ourselves a block away from the park that we'd been forced out of, so we took it again. The riot police lined up and prepared to take the park again, but the attempt was called off and the police just left. They realized that they would have to go through the standard military procedure of clearing the park inch by inch, only to have us go back out into the streets and march again while they, one more time, trailed along helplessly…
>
> In summary: when the cops come to clear the park, don't resist. As they are preparing for their military maneuver and use of force that the Occupiers cannot reasonably be expected to resist, the occupiers should be packing up their tents and baggage and loading them into wagons, bicycles, backpacks, etc.
>
> Force the cops to clear the park inch by inch, but try to avoid arrest in so doing. Once they have cleared the park, rouse the crowd through loud amplification announcing that you intend to march (any destination will do). Get the music blaring and then march aimlessly, blocking traffic the whole way, for hours…
>
> The police will eventually trim down their entourage because they realize that they are helpless. Eventually, work your way back to the park. Or, if the police have fenced off the park, head to another park. If the police force you out, march again and they will be forced to follow. Eventually, they will inevitably come to the conclusion that they would rather have you in a park than disrupting traffic.[110]

When discussing the nature of Occupy as a fair or school, we can't go without mentioning the way the stigmergic organization of the movement itself facilitated collaboration with innovators, and the rapid adoption of new skills and technology. For example the New York City General Assembly Technology Operations Group

> supports the online communication and organization needs of OWS and the New York City General Assembly. We seek to provide online tools that promote participation among occupiers and beyond by extending communication streams and promoting the exchange of information… Although we promote the use of Open Source solutions, we intend to use whatever technology will best meet the needs of the communities we serve.[111]
>
> … [The group] seeks to bring the Occupy and Free/Libre/Open Source movements together through the development, deployment and documentation of the tools and techniques people need to create the world they want.[112]

There were equally significant forms of innovation other than secure communications systems. Vinay Gupta, designer of the Hexayurt refugee and disaster housing unit, designed a set of cheap protective gear to protect protestors from punitive chemical assault by police.[113]

[110] Laura Gottesdiener, "Occupy Homes, One Year On And Growing Daily," *Z Communications*, December 26, 2012 <www.zcommunications.org>.

[111] Justin Berton, Kevin Fagan,Demian Bulwa, "Oakland port workers stay home as protestors rally," *San Francisco Chronicle*, December 13, 2011 <www.sfgate.com>.

[112] "Occupy Ports: 'Occupy' Protesters Demonstrate at Port of Los Angeles," *KTLA.com*, December 12, 2011 <www.ktla.com>.

[113] "An Open Letter from America's Port Truck Drivers on Occupy the Ports," *Coalition for Clean and Safe Ports*, December 12, 2011 <cleanandsafeports.org>.

John Robb analyzes Occupy in terms of John Boyd's thought on the isolation and internal cohesion of elites:

> It appears that Occupy's extreme non-violence/passivity has finally generated a social system disruption. Videos and pictures showing policemen using violence against passive protesters have gone viral (UC Berkeley students, Grandma, and open mouth were the leading examples). Stories about this violence are now sweeping the media (7,910 news stories over the last 24 hours). Is this going to have a strategic effect?
>
> Let's look at this from the late, great American strategist John Boyd's perspective. The dynamic of Boyd's strategy is to isolate your enemy across three essential vectors (physical, mental, and moral), while at the same time improving your connectivity across those same vectors. It's very network centric for a pre-Internet theoretician. Here's more detail what disconnection looks like:
>
> Physical isolation is accomplished by severing communications both to the outside world (ie. allies) and internal audiences (ie. between branches of command and between the command organization and its supporters).
>
> Mental isolation is done through the introduction of ambiguous information, novel situations, and by operating at a tempo an enemy cannot keep up with. A lack of solid information impedes decision making.
>
> Moral isolation is achieved when an enemy improves its well being at the expense of others (allies) or violates rules of behavior they profess to uphold (standards of conduct). Moral rules are a very important reference point in times of uncertainty. When these are violated, it is very hard to recover.
>
> Was it effective?
>
> Using John Boyd's framework as a guide, this media disruption did have an effect across all three vectors:
>
> Physical. No isolation was achieved. The physical connections of police forces remained intact. However, these incidents provided confirmation to protesters that physical filming/imaging of the protests is valuable. Given how compelling this media is, it will radically increase the professional media's coverage of events AND increase the number of protesters recording incidents.
>
> Mental. These incidents will cause confusion within police forces. If leaders (Mayors and college administrators) back down or vacillate over these tactics due to media pressure, it will confuse policemen in the field. In short, it will create uncertainty and doubt over what the rules of engagement actually are. IN contrast, these media events have clarified how to turn police violence into useful tools for Occupy protesters.
>
> Moral. This is the area of connection that was damaged the most. Most people watching these videos feel that this violence is both a) illegitimate and b) excessive. Watch

> this video UC Davis Chancellor Katehi walking from her building after the incident. The silence is eerie.[114]

From the beginning, the threat of cooptation was a problem: there were fears the Occupy movement would be hijacked by an influx of "allies," professional activists from the Institutional Left. No doubt a lot of center-left Democrats would have loved to turn Occupy into a mass base for Obama's jobs program, or an arm of the Coffee Party movement. Van Jones' Rebuild the Dream movement and MoveOn.org both attempted to do this. In the spring of 2012 Jones' hobby-horse "The 99% Spring" dominated public perceptions of the Occupy Movement.[115]

But that's pretty hard to do with a leaderless movement. As John Robb pointed out,

> the Occupy movement is organized in a way that makes taking control difficult… :
>
> Consensus decision making (blocks leadership…).
>
> Geographic Decentralization. Not many people in any one location.
>
> No hiearachy or bureaucracy. A coup d'etat requires a bureaucratic hierarchy… Occupy doesn't have a bureaucracy to seize control of.
>
> No behind the scenes space. Everything is out in the open/transparent. How do you cut a deal in a smoke filled room when there isn't one?[116]

According to Ken Knabb, the shutdown of Occupy encampments in cities around the United States

> simply had the effect of forcing the participants onto other, more diverse terrains of struggle. Countless people all over the country continue to meet regularly, to network with each other and to carry out all sorts of actions—picketing banks, disrupting corporate board meetings, blocking home foreclosures, protesting environmental policies (Monsanto, Tar Sands Pipeline, fracking, etc.), in addition to more specifically "occupy" type actions such as attempting to take over and reopen schools and libraries that have been closed and abandoned, or "Homes Not Jails" attempted takeovers of vacant housing to provide dwellings for homeless people.[117]

The Real Lessons of Occupy's "Death." The focus on Occupy's "death," I think, misses the point. Even asking "What happened to Occupy?" or "What happened to M15?" as though they were discrete entities with a beginning and an end reflects a misconception as to their nature. It makes more sense to think of the whole trajectory of movements including the Arab Spring, M15 and Syntagma, Madison, Occupy, and its successors, as one loose global network of associated networked movements. This networked movement is always throwing up new avatars, with new names, which appear to decline after a while. But when something new arises—and it always does,

[114] Lester MacGurdy, "Occupy Portland Outsmarts Police Creating Blueprint for Other Occupations," *Portland Occupier*, December 15, 2011 <www.portlandoccupier.org>.

[115] "Technology Operations Group," *Occupy.Net* wiki <wiki.occupy.net>.

[116] "Main Page," *Occupy.Net* wiki <wiki.occupy.net>.

[117] Vinay Gupta, "Protecting democratic protest from suppression by use of sublethal chemical weapons," *The Bucky-Gandhi Design Institution*, December 11, 2011 <vinay.howtolivewiki.com/blog/other/protecting-democratic-protest-from-suppression-using-sublethal-chemicalweapons-2918>.

whether in the same country or halfway around the world—it's built on the same infrastructure and foundations, and the same social capital, as its predecessors. Here's how Nathan Schneider described the phenomenon in an interview:

> What did Occupy Wall Street succeed at? What did it fail at?
>
> It very powerfully succeeded at introducing activists from around the country to one another and turned a lot of people into activists that weren't before. It produced a tremendous number of networks, both online and offline, which continue to mobilize people on a number of fronts, though few are still called Occupy.
>
> It also won a ton of disparate victories in communities across the country, from small and large labor disputes, a dramatic reduction in stop and frisks in New York, to the overturning of regulations concerning the policing of the homeless in various cities. It strengthened and encouraged various types of political organization as well as turned movements into international networks around the world that didn't exist before.
>
> Do you feel any sense of shared vision or hope from other places on the globe affected by Wall Street's shortcomings?
>
> Occupy Wall Street organizers are constantly discussing what other related movements around the world are doing, both on social media and in their own planning meetings. They are closely in touch with activists on the ground in many of these places. Every time Occupy Wall Street quiets down for a period time in the U.S., the organizers watch closely (and travel to) places where things are flaring up…
>
> What innovation in this area do you think is in store for us in the future? What should we be getting excited about?
>
> It's hard to say what is going to blow up next. Certainly right now Occupy Sandy and Strike Debt are the fights to watch, in addition to the Walmart labor struggle. This is a movement that has an endless number of clever ideas appearing all the time, but it's never clear which ones are going to rise above the rest until it happens. The next big idea might very well not be called "Occupy", which may be a good thing—but the chances are high that, even so, it will be the result of networks that were forged during the Occupy movement.[118]

John Holloway dismisses concerns about the institutional continuity or persistence of any particular movement.

> Before we can break with capital altogether, you suggest we begin by 'cracking' it in different places and times. Yet these 'cracks', as you call them, seem to flourish particularly in times of crisis. We saw this in the popular uprising in Argentina in 2001'02… , and we're seeing it in Southern Europe today. Do you think there is a way to perpetuate such cracks beyond these economic 'hard times'? Or is this type

[118] John Robb, "OCCUPY NOTE 11/20/11: The HIDDEN logic of the Occupy Movement," *Global Guerrillas*, November 20, 2011 <globalguerrillas.typepad.com>.

> of autonomous popular self-organization bound to be something that flourishes in times of crisis and then secedes back into… state capitalist populism?
>
> I don't know, first I don't think times necessarily get better and secondly I'm not sure that we should worry too much about perpetuation. If you look at Argentina, there was clearly a sense that things did get better. Like the economy, rates of profit recovered, in which a lot of the movements of 2001 and 2002 became sucked in into the state. But the problems have obviously reappeared somewhere else. If you look at Spain and Greece, firstly there are no short-term perspectives of things getting substantially better. Secondly, if they did get better, then the crisis would move on somewhere else. And the search for alternative ways of living moves on.
>
> I think there is an accumulation of experience, and also an accumulation of growing awareness that spreads from one country to another, that capitalism just isn't working and that it is in serious problems… There is a growing confidence perhaps that the cracks we create or the crazinesses we create may really be the basis for a new world and a new society, and may really be the only way forward.
>
> What I don't like about the idea of perpetuation is that it has to be a smooth upward progress. I don't think it works like that. I think it's more like a social flow of rebellion, something that moves throughout the world, with eruptions in one place and then in another place. But there are continuities below the discontinuities. We have to think in terms of disrupting bubbling movements rather than thinking that it all depends on whether we can perpetuate the movement in one place. If we think in terms of perpetuation in one place, I think at times it can lead us into either an institutionalization, which I think is not much help, or it can lead us into a sense of defeat, perhaps, which I don't think is right.[119]

The various iterations of this networked movement since Occupy have consciously viewed themselves as manifestations of a single global movement.

> all revolts are connected somehow. The fact that a Brazilian flag was flying in Istanbul's Taksim Square, or that the slogan "Brazil will be another Turkey" was used during Brazil's demonstrations, are examples. The Interagentes study [Es] of digital networks mentioned that when the first protests were called in Sao Paulo on June 6, there were two Turkish Facebook pages among the ten most influential in Brazil on that day…[120]

The most important thing to remember, as Graeber pointed out, is that "once people's political horizons have been broadened, the change is permanent.

> Hundreds of thousands of Americans (and not only Americans, of course, but Greeks, Spaniards, and Tunisians) now have direct experience of self-organization, collective action, and human solidarity. This makes it almost impossible to go back to one's

[119] The Insider, "MoveOn's 99 Percent Spring, Obama and the Dems March in Lock-Step," *Counterpunch*, April 12, 2012 <www.counterpunch.org>.

[120] Robb, "LEADERSHIP & OPEN SOURCE PROTEST," *Global Guerrillas*, October 11, 2011 <globalguerrillas.typepad.com>.

> previous life and see things the same way. While the world's financial and political elites skate blindly toward the next 2008-scale crisis, we're continuing to carry out occupations of buildings, farms, foreclosed homes, and workplaces—temporary or permanent—organizing rent strikes, seminars, and debtors' assemblies, and in doing so, laying the groundwork for a genuinely democratic culture, and introducing the skills, habits, and experience that would make an entirely new conception of politics come to life.[121]

Globalization of the Occupy Movement. Like the Arab Spring before it, the Occupy movement went global—returning, in fact, to many of the same countries whose earlier protest movements had provided its inspiration. According to Francesca Rheannon, it spread to 1500 cities in 82 countries.[122] And, Marcia Stepanik writes,

> the #OWS movement had its largest single day of protests Saturday not in New York but far from Wall Street. Writes blogger Nate Silver: "In Europe, crowds in cities like Rome, Barcelona, and Madrid were estimated at 200,000 to 500,000 per city—more, probably, than the protests in the U.S. combined."[123]

Networked Uprisings After Occupy. As suggested above, Occupy didn't really "die." In China in 2011 an uprising against a corrupt land deal became a global news event when people blockaded entrances into their village to protest local officials' giveaway of common land to a private developer—an all-too-common event in that country—and used social media to take their protest viral. Quebec student uprisings began in February 2012 over a tuition increase, leading to protests by hundreds of thousands all over the province—including demonstrations that continued in Montreal for months. Demonstrations in Chiapas launched a resurgence of the Zapatista movement in December 2012.

In Turkey the Taksim Square movement was launched in May 2013, in immediate response to a decision to hand over the Gezi Park to developers, and quickly exploded into a massive nationwide protest against neoliberalism in general. It quickly spread to include protests by hundreds of thousands in major cities all over Turkey, and gained a worldwide support network with the help of social media. In Brazil, also in mid-2013, a protest over increased public transit fares—a significant burden on precarious workers who had to commute to work from the *favelas*—similarly grew into a massive nationwide uprising against neoliberalism in general.

The situation has been complicated by some movements on the Right— neoliberal opponents of the Bolivarian regime in Venezuela with apparent support from the American state, and right-populists and neo-fascists in Ukraine—who have adopted the same networked protest model.

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[121] "Looking Back on Occupy," *Bureau of Public Secrets*, October 2012 <www.bopsecrets.org/recent/occupy-looking-back.htm>.

[122] Joel Dietz, ""Occupy Wall Street turned movements into international networks that didn't exist before," *OuiShare*, January 7, 2013 <ouishare.net>.

[123] Jerome Roos, "Talking About a Revolution With John Holloway," *John Holloway*, April 13, 2013 <www.johnholloway.com.mx>.

V. Anonymous and Other Hacktivists

Anonymous. The Anonymous group originally grew out of the 4chan/b/discussion community. Given the common quality of discussion among its membership of hackers and anime enthusiasts—discussion ranging from deliberately offensive (constant references to "n*****s" and "f**s") to the apparently sociopathic—it's not the sort of venue from which you'd ordinarily expect social justice activism to emerge. You can get a pretty good feel for the culture just by looking at *Encyclopedia Dramatica*, whose content comes mainly from 4chan participants.

Anonymous itself is simply a brand, a common label under which selforganized projects operate. Operations under the Anonymous brand are organized virally, often spurred by something as random as an individual tweet that inspires others to get up to deviltry.[124]

Anonymous originally arose as a group of 4chan participants organizing pranks within the 4chan message board community entirely for the "lulz"—4chan slang for mindless laughter at the stupidity or misfortune of others. The name "Anonymous" derived from the 4chan website's practice of automatically assigning the username "Anonymous" to anyone who didn't register an individual nickname on signing up. Since most users never bothered to register nicknames, the majority of channers simply appeared on the message boards as "Anonymous." This became the source of a common sense of identity.[125]

Anonymous's first prominent appearance in the news, and for all intents and purposes its emergence as a movement with a social conscience, was the Anonymous attack on the Church of Scientology. Before then, its attacks were capricious and seemingly unmotivated by any coherent ideology.

> … Anonymous had a vigilante streak, and it could be downright mean. They'd d0x someone who abused a cat. In particular they went after abusers of cats, because Anonymous loves cats and pictures of cats. They blocked the pool at the online kid's game Habbo Hotel with black, generously fro'd avatars declaring "Pool is closed due to AIDS" as a protest to perceived racism on the part of Habbo's admins.
>
> But Anonymous was never particularly focused. Raids could be devastating or funny, but either way they came and went quickly, the net's own little tornado system. Anonymous was never anyone's personal army, and never stayed on any one topic for very long.
>
> It took Tom Cruise to change all that and give Anonymous a political consciousness…
>
> A video of a disturbingly manic Cruise leaked out of Scientology in January 2008, and the notably litigious church tried to force hosting services and Gawker to take it down with legal nastygrams.
>
> But the video contained some truly epic lulz, and Anonymous wouldn't let it die. The church's effort to kill it off so enraged Anons they decided to destroy the church itself… For Anonymous being mad meant wanting to troll the church very hard, but it was never to get serious, because getting serious for Anons meant losing.

[124] Bernardo Gutierrez, "What do Brazil, Turkey, Peru and Bulgaria have in common?" *Al Jazeera*, September 7, 2013 <www.aljazeera.com>.

[125] Graeber, *The Democracy Project*, xix-xx.

> To accomplish this op (short for operation), Anons created Project Chanology, which arguably marked both the birth of political consciousness for Anonymous, and the development of its methods of taking mass action.[126]

From the very beginning, Anonymous was defined by its swarming tactics and lack of an official hierarchy:

> The collectives deliberately have no leaders, and reject the principle of representation in favour of individuals directly participating in concrete actions. Their diversity means decisions can be made quickly, by the participants coming together on a specific issue, rather than by getting an official majority. The political establishment cannot understand such forms of organisation or their lack of concrete demands.
>
> These temporary collectives, or "swarms", consist of independent individuals using simple tools and rules to organise themselves horizontally. As the founder of the Swedish Pirate Party, Rick Falkvinge, put it: "As all the people in the swarm are volunteers … the only way to lead is by inspiring others through action"…
>
> A collective starts with an appeal, accompanied by the resources to carry out an immediate action. Clay Shirky, an expert in social media, has identified three key elements in this supple form of cooperation: a promise, a tool, and a bargain. The promise lies in the appeal, which must interest enough activists and seem achievable. It might involve attacking a government website in response to censorship. Tools available online, such as the Low Orbit Ion Cannon (LOIC) programme (named in reference to the *Star Wars* films), allows scattered volunteers to coordinate their actions. The bargain refers to the conditions everyone agrees to when they take part in the collective action.
>
> Over time these three aspects can evolve, and the collective can grow, change direction or break up. To make sure it does not disappear as quickly as it appeared, a fourth element is needed, a common horizon, which "allows the scattered members of a network to recognise each other as existing within a shared referential and imaginary universe," explains the essayist Brian Holmes. This is where the Anonymous mask— the Guy Fawkes mask worn by the hero of *V for Vendetta*, a graphic novel by Alan Moore and David Lloyd set in a totalitarian world—comes in…[127]

As Norton argues, Anonymous was in one sense a major departure from the /b/ethos. That ethos was captured by the phrase "getting serious for Anons meant losing." Anon was originally in it for the lulz; those who acted out of serious motivations like social justice were dismissed as "moralf**s."

> But Anons caring about doing the right thing is about morality, and morality, at least straight morality, is not the lulz. Many veterans saw this as a corruption of the purity of Anonymous…

[126] Francesca Rheannon, "Occupy Goes Global: Is Another World Possible?" *CSRwire*, October 18, 2011 <www.csrwire.com>.

[127] Marcia Stepanek, "Wirearchy," *Cause Global: Social Media for Social Change*, October 17, 2011 <cause-global.blogspot.com>.

> On February 10, 2008, the "moralfags" took the whole thing to a new level…
>
> Anons left the internet by the thousands and showed up in front of church locations and Scientology centers around the world, many wearing their new Guy Fawkes masks, V for Vendetta movie merchandise sold by Warner Brothers, to obscure their identities.
>
> They played music and walked around with signs that both accused Scientology of crimes and referenced obscure internet memes. They met each other in meat space for the first time. They partied with their own in front of aghast Scientologists in more than 90 cities.[128]

Adherents of the traditionalist Lulz ethos—or "Purists"—within Anonymous who had participated in Operation Chanology were dismayed by an influx of new "Moralist" members inspired by the activist vision of Anonymous that had arisen from Chanology. The new blood further shifted the community into an ideological orientation toward fighting injustice as a matter of principle rather than simply for the lulz.

At the same time, the 4chan administrator banned the organization of raids using the 4chan message board, causing Anonymous members to leave 4chan for other venues—and actually launch a DDoS attack on 4chan itself in retaliation. At this point Anonymous ceased to be dependent on any central infrastructure and became a genuinely decentralized, cell-based p2p organization.[129]

So in a sense, Anonymous after Chanology became a sort of heretical moralf** offshoot of 4chan/b/.

> In the beginning, there were lulz, pranks and a culture of trolling just to get a rise out of anyone. But despite many original Anons best efforts, Anonymous has grown up to become the net's immune system, striking back whenever the hive mind perceived that the institutions that run the world crossed the line into hypocrisy.
>
> … But this immune response changed Anonymous as well. The lulz had to make room for righteous indignation, and not even a pretend indignation.
>
> The empowerment anons felt from vigilantism had swung the movement to moralfaggotry permanently, and many anons liked it that way.[130]

Since then Anonymous has gravitated into an activist movement centered on combating Internet censorship and other aspects of the police state, as well as randomly motivated action on behalf of perceived underdogs.

The relationship between Anonymous and 4chan is still quite complicated, and the mainstream press—as you might expect—has trouble grasping the complexity of the situation.

> In 2009, denizens of 4chan were still using the name Anonymous for notorious trolling escapades. Trolling began to wane in 2010, when Anonymous' political portfolio diversified considerably. At the time of this writing, pure trolling under the

[128] Meghan Kelly, "Anonymous is all about privacy," *VentureBeat*, August 18, 2011 <venturebeat.com>.

[129] Max Halupka, "The Evolution of Anonymous as a Political Actor" (Honors thesis in fulfillment of B.A. Requirements, 2011), pp. 33–34.

[130] Quinn Norton, "Anonymous 101: Introduction to the Lulz," *Wired.com*, November 8, 2011 <www.wired.com>.

> name Anonymous had largely ceased. There is, however, nothing preventing its resurrection.[131]

And it has in fact been resurrected, as evidenced by 4chan trolling campaigns to sabotage various "social justice" hashtags on Twitter, and the brutal campaign of harassment and threats of rape and murder against Anita Sarkeesian and Zoe Quinn in 2014.

The same is true of the relationship between various self-organized swarming groups using the Anonymous label.

> While Anonymous had initially deployed DDoS attacks during their first trolling raid against the Church of Scientology, Project Chanology abandoned this tactic. It never approved of nor relied much on hacking. To this day, Project Chanology opposes the use of DDoS attacks and tends to dismiss the networks that deploy them. To acknowledge its internal feuds and sectarianism, Anonymous eventually adopted the refrain "Anonymous is not unanimous." This message has yet to penetrate public consciousness—the mainstream media still tends to describe participants only as hackers, technological actors already freighted with simplistic and pejorative associations.[132]

And in the atmosphere of moral panics over "cyberwar" since the Wikileaks cable dump, the media has reported their activities in increasingly alarmist terms.

From Chanology on, Anonymous continued to refine its arsenal of tactics. From then til now, its operations have become increasingly more sophisticated and more devastating to the organizations targeted. The first wave of major attacks, using the "Low Orbit Ion Cannon" (a distributed denial of service attack to shut down websites with swarms of traffic their servers couldn't handle) had more of an effect on public consciousness, through a technologically illiterate mainstream media, than on the organizations targeted.[133]

One of the first prominent uses of the Lwas the February 2010 "OperatTitstorm," DDoS attack on Australian government websites to protest legislation which required Internet service providers to use porn filters.[134]

In September 2010, with Operation Payback, Anonymous turned its attention to a new target: copyright law—and more particularly the maximalist versions of copyright law being promoted by content industry lobbyists. Operation Payback was, specifically, retaliation for MPAA/RIAA actions against The Pirate Bay.

> Organizing in the name of Internet freedom, a group of Anons had set their eyes on protesting the multilateral Anti-Counterfeiting Trade Agreement (ACTA) through legal channels alone. A handful of the group clamoured for direct action tactics, which included "black fax, emails, phone calls, pizzas called to the office, a full on classic Anon assault," as one participant described it to me. In the minority, they were banned from a particular Internet Relay Chat (IRC) server, but naturally could still

[131] Felix Stalder, "Anonymous Power," *Social Network Unionism*, February 22, 2012 <snuproject.wordpress.com>.

[132] Norton, "Anonymous 101."

[133] Halupka, *op. cit.*, pp. 44–49.

[134] Norton, "Anonymous 101 Part Deux: Morals Triumph Over Lulz," *Wired.com*, December 30, 2011 <www.wired.com>.

> use the name. So they did, and proceeded to "blitz these guys [copyright industry] into paying attention" by DDoSing pro-copyright associations such as the Motion Picture Association of America in defence of piracy and file sharing
>
> This group eventually managed to attract a sizable street team of participants and supporters. After roaming from one IRC network to another, these participants eventually established a dedicated IRC server named AnonOps in November 2010. This network, known by the name of its IRC server, would come to boldly embrace DDoS tactics and eventually endorse hacking as a political weapon, thus becoming one of the biggest and most controversial media sensations.[135]

The result of these high-profile attacks, with targets that resonated with a large information freedom movement on the Internet, was dramatic.

> … [T]housands of people who had never considered themselves Anonymous… joined in and became a new generation of moralfag. Though they didn't care about the Church of Scientology or 4chan's history of shenanigans, they shared one important quality with their raiding 4chan predecessors.
>
> They saw acting as Anonymous, taking up the iconography, and joining the op, as a path to empowerment. They could finally do something more than sign an online petition and give money to the EFF.
>
> They took down AiPlex immediately, and the MPAA shortly after, and expanded the attack to the RIAA and rightsholders and enforcement groups around the world. They wrote manifestos and released videos, but more than anything, they got a lot of media coverage. The coverage brought in more people.
>
> Anonymous swelled to a crowd of moralfags that likely dwarfed whatever had been in the "legion" before.[136]

Unfortunatelthe large influx of enthusiastic new members occurred as the attack on the entertainment industry was running its course. "early December 2010… , AnonOps IRC chat rooms, once bustling with life, had come to a standstill. Core AnonOps participants—system administrators, organizers, media makers and hackers—were concerned by its dwindling number of supporters."[137]

This was the background in December 9, 2010, when Anonymous began the second phase of Operation Payback—a major operation in defense of Wikileaks.

> Just when it looked like Anonymous would take a breather in December 2010, the government started an extra-legal crackdown on WikiLeaks in response to the release of hundreds of thousands of diplomatic cables allegedly leaked to the site by Bradley [sic] Manning. Senator Joe Lieberman called Amazon to pressure them, successfully, to stop hosting WikiLeaks files, despite no charges being filed against WikiLeaks or its public face, Julian Assange. Mastercard, Visa, and Paypal all blocked

[135] Coleman, "Anonymous in Context," p. 6.
[136] *Ibid*., p. 6.
[137] Norton, "Anonymous 101 Part Deux."

> payments to WikiLeaks for alleged terms of service violations and Assange's Swiss bank froze his account.[138]

The Wikileaks support campaign was the first real upward ratcheting in the severity of Anonymous attacks.[139]

> AnonOps managed to tap into, channel and thus render visible the collective furor over what its supporters deemed to be a wholly inappropriate act of censorship against the whistle- blowing organization WikiLeaks… Anonymous, specifically AnonOps, launched a DDoS campaign aimed at PayPal, MasterCard and Visa in response to their refusal to accept donations for WikiLeaks' front man, Julian Assange…
>
> This gathering was also one of the first large-scale spontaneous online demonstrations. The outpouring of support even surprised AnonOps. Numbers on the IRC channel jumped from 70 individuals to 7,000 in a couple of days… The targeting of WikiLeaks was yet another catalyst for politicizing Anonymous; some key participants and organizers active today jumped aboard at a momentous time.[140]

Although DDoS actions were pioneered by groups like EDT and the electrohippies—e.g. EDT's campaign of "digital storms" supporting the Zapatistas in the late '90s—Operation Payback was a major generational improvement in technical sophistication.[141]

> During this action, the high level of quotable, embed-able graphic and video artifacts produced by the group allowed them a level of control over the media narrative that, for example, the EDT had never enjoyed… By pushing the peer production and distribution of these artifacts, which include video manifestos, graphical calls to action, and solidarity images, Anonymous was able, to a certain extent, dictate the visual tools and language used in the media's coverage of Operation Payback.[142]

This tendency was even more pronounced given the media's confusion over Anonymous's leaderless structure and who to talk to, the convenience of simply reprinting Anonymous press releases, and the tendency of media outlets everywhere to circulate the same material once one outlet had "legitimized" it.[143]

AnonOps was also the first appearance of an operation organized by what Halupka calls a "dedicated cell" or ''phantom cell"—a node of like-minded Anonymous members engaged in coordinated missions reflecting their own agenda.[144]

On January 2, 2011, in response to the Tunisian government's blocking of Wikileaks, AnonOps announced the launch of OpTunisia with anonline video. "technical team of hackers

[138] Gabriella Coleman. *Anonymous in Context: The Politics and Power behind the Mask*. Internet Governance Papers No. 3 (Centre for International Governance Innovation, September 2013), p. 6.

[139] *Ibid*., pp. 6–7.

[140] Norton, "Anonymous 101 Part Deux."

[141] Coleman, *Anonymous in Context*, pp. 6–7.

[142] Norton, "Anonymous 101 Part Deux."

[143] Halupka, *op. cit*., p. 62.

[144] Coleman, *Anonymous in Context*, pp. 6–7.

attacked Tunisian government websites and undermined software the dictatorial regime was using to spy on citizens. Many others aided by translating information, writing manifestos and crafting publicity videos."[145]

As one might expect, the increasing scale and audacity of attacks by Anonymous and its offshoots, and its alliance with an official enemy like Wikileaks, did not go unnoticed by the security-industrial complex. Sacramento-based security firm HBGary Federal formulated an online attack plan against Wikileaks supporters like Glenn Greenwald; HBGary CEO Aaron Barr boasted to the *Financial Times* that he'd "pwned" Anonymous. HBGary

> put together proposals for Hunton & Williams—which represents conservative corporations like Bank of America, the Chamber of Commerce and Koch Industries—that would scrape the internet, including social networking outlets like Facebook, LinkedIn and Classmates.com, for informational dirt that could be distilled into disinformation attacks that could potentially to bring down supporters of Anonymous and Wikileaks…[146]

AnonOps' response, as Gabriella Coleman puts it, "fundamentally and dramatically reconfigured the political culture of AnonOps."

> Participants transitioned from covert to public forms of hacking, such as web defacing. Hacking, always a tool but often used more clandestinely, became a public act, wielded for multiple purposes: vengeance, turf protection, technological assistance, theatrics, exposing security vulnerabilities, searching for information to leak and for the lulz.[147]

With the campaign against HBGary, AnonOps launched its first large-scale doxxing attack. And to be sure, the damage was massive. AnonOps raided the company's drives,

> releasing 40,000 HBGary Federal emails, remotely wiping [Barr's] iPad and engendering a scathing public disconnection from those who have known and employed him…
>
> "Rarely in the history of the cybersecurity industry has a company become so toxic so quickly as HBGary Federal," Andy Greenberg blogged Feb. 15 for Forbes' Firewall column. "Over the last week, many of the firm's closest partners and largest clients have cut ties with the Sacramento start-up. And now it's canceled all public appearances by its executives at the industry's biggest conference in the hopes of ducking a scandal that seems to grow daily as more of its questionable practices come to light.
>
> HBGary planned to tag-team Wikileaks and Anonymous with Palantir Technologies and Berico Technologies, which has publicly admitted that it was asked to develop a proposal analyzing internal security and public relations problems for a law firm, without naming names. Palantir quickly apologized, explaining that the "right to free speech and the right to privacy are critical to a flourishing democracy" and

[145] Sauter, *The Coming Swarm*, p. 60.
[146] *Ibid*., p. 67.
[147] *Ibid*., pp. 68–69.

> personally apologizing to pro-Wikileaks supporters like Glenn Greenwald, who it was planning to personally discredit. For its part, Hunton & Williams hasn't publicly commented on the clusterfuck, although Anonymous' data dump featured emails between Barr and Hunton & Williams' partner and corporate investigator John W. Woods. Not so with the much better-known Bank of America, which openly derided HBGary's PowerPoint presentation to Hunton & Williams: "We've never seen the presentation, never evaluated it, and have no interest in it."
>
> That categorical denial rings hollow, given Bank of America's itinerant controversy, which includes inhaling bailout billions in taxpayer cash, purchasing toxic mortgage scammers like Countrywide Financial, nailing loyal customers with skyrocketing interest rates, robosigning foreclosures and even shutting down payment transfers to Wikileaks, lamely claiming "reasonable belief that WikiLeaks may be engaged in activities that are, among other things, inconsistent with our internal policies for processing payments." Add it together with the shady "competitive intelligence" practices of the Chamber of Commerce—which solicited Palantir, Berico and HBGary to scrape the Internet for personal data on Chamber opponents like Brad Blog, Change to Win, CodePink and others—and what is immediately apparent is that all of the included parties are sorry for mostly one thing: Getting caught with their pants down."[148]

The doxxing of HBGary, which foreshadowed a later attack on Stratfor— another quasi-private firm in the security-industrial complex—exposed internal documents which horrified many Americans.

> In the course of the trolling and doxing, an enormous amount of detail uncovered in the emails centered on the way HBGary Federal and its affiliates proposed to act as agent provocateurs: hired thugs for the purposes of disruption. Some of the leaked emails included a Power Point presentation outlining how HBGary Federal and other companies could help discredit WikiLeaks by submitting fake documents to the site which, when revealed as false, would presumably discredit the organization. They also devised plans to undermine the careers of various figures seen as ideological supporters of WikiLeaks, such as Glenn Greenwald, a writer for Salon.com. The inner workings of a privatized COINTELPRO-type proposal were exposed for the world to see; these details were so shocking, some Congressmen even called for an investigative committee to look into these actions.[149]

The HBGary hackers had so much fun they were eventually inspired to spin off as an independent organization, LulzSec, which carried out its own prominent exploits in mid-2011.[150]

Meanwhile, AnonOps continued its own attacks, in March 2011 releasing a cache of Bank of America emails which it alleged to show wrongdoing. The significance of the documents, which Anonymous posted to BankofAmericaSucks.com, was stated by the leaker:

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[148] Halupka, *op. cit.*, p. 62.

[149] Coleman, *Anonymous in Context*, p. 7.

[150] Scott Thill, "'Anonymous' Hacker Group Teaches Shady Cyber-Security Companies a Lesson They'll Never Forget," *AlterNet*, February 11, 2011 <www.alternet.org>.

> For the last 7 years, I worked in the Insurance/Mortgage industry for a company called Balboa Insurance. Many of you do not know who Balboa Insurance Group… is, but if you've ever had a loan for an automobile, farm equipment, mobile home, or residential or commercial property, we knew you. In fact, we probably charged you money … a lot of money … for insurance you didn't even need…
>
> How is Balboa able to charge such inflated premiums and get away with it?…
>
> First, when you call in to customer service, for say, GMAC, you're not actually speaking to a GMAC employee. You're actually speaking to a Bank of America associate working for Balboa Insurance who is required by their business to business contract with GMAC to state that they are, in fact, an employee of GMAC. The reasoning is that if you do not realize you're speaking to a Bank of America/Balboa Insurance employee, you have no reason to question the validity of the information you are receiving from them. If you call your insurance agent and ask them for the lienholder information for your GMAC/Wells Fargo/etc lien (home or auto) you will be provided with their name, but the mailing address will be a PO Box at one of Balboa's 3 main tracking locations (Moon Township/Coreaopolis, PA, Dallas/Ft Worth, TX, or Phoenix/Chandler, AZ)[151]

In May 2011 LulzSec launched a two-month spree of attacks, announcing to the press in no uncertain terms that it was an independent operation, and not AnonOps or any other subgroup of Anonymous.[152]

LulzSec took Anonymous's DOS attacks, which for the most part have failed to take down websites like that of Amazon and PayPal, a step further. It launched a wave of six attacks against in which it "dumped internal code." Following the U.S. government's declaration of war on "cyberterrorism," Lulzsec launched "Fuck FBI Friday" and hacked the FBI affiliate InfraGard, culminating in "the anonymous hacking group's publication of InfraGard e-mails, passwords and personal contact information for about 180 members… "[153]

Although LulzSec retired on June 25, many of its members regrouped under the name "AntiSec."

> Unlike LulzSec, Antisec loudly and proudly branded itself as an Anonymous operation. While not forsaking deviant humour… Antisec adopted a more militant tone. This was largely attributable to two hackers: Jeremy Hammond, a political radical who is currently in jail awaiting sentencing, and Hector Xavier Monsegur, known as "Sabu," who worked with Anonymous, LulzSec and Antisec.[154]

Sabu was briefly arrested on June 7—the beginning, as it later became known, of a stint as an FBI informer that culminated in the arrest of a number of leading LulzSec veterans in early 2012. Nevertheless, he was a key participant in several extremely high profile AntiSec operations

[151] Coleman, *Anonymous in Context*, p. 8.

[152] Thill, *op. cit.*

[153] Michael Ralph and Gabriella Coleman, "Is it a Crime? The Transgressive Politics of Hacking in Anonymous," *OWNI.eu News, Augmented*, September 29, 2011 <owni.eu/is-it-a-crime-the-transgressive-politics-of-hacking-in-anonymous/>.

[154] Coleman, *Anonymous in Context*, pp. 8–9.

late 2011; "became the public face of Antisec through his popular Twitter account, where he specialized in 140character tirades against the group's main targets: the government, security firms, the police and corporations."[155]

In August 2011 Bay Area Rapid Transit Authority shut down wireless communications in the BART system to thwart attempts to organize protests—against recent police shootings on the system—via social media. AntiSec responded by hacking BART's computers and releasing public data.[156]

The organization's next big hack was the publication, in response to a major arrest of Anonymous suspects, of a large cache of Texas law enforcement emails.

> Thousands of documents are available on tor hidden services /bittorrent and include several dozen FBI, Border Patrol, and counter-terrorism documents classified as "law enforcement sensitive" and "for official use only". The emails also included police records, internal affairs investigations, meeting notes, training materials, officer rosters, security audits, and live password information to government systems. The private chief emails also included several racist and sexist chain email forwards and personal details sure to embarrass, discredit, and incriminate several of these so-called "community leaders".[157]

Anonymous intersected with the course of the Occupy movement in an amusing way, as recounted by David Graeber. Apparently one reason for the NYPD's hesitancy to shut down the Occupy encampment in the early days of the protest was

> the presence of Guy Fawkes-masked members of the hackers collective Anonymous in Zuccotti Park. Most, he said, were genuinely worried that if they attacked the camp and expelled the protestors, Anonymous would hack their bank and credit card accounts, and the fear of this played a major role in their decision to hold off from doing so.[158]

December was the beginning of another upsurge in AntiSec activity, sparked by a series of controversial bills in Congress like the National Defense Authorization Act's indefinite detention provisions and the content industry's latest proposals for more stringent copyright legislation. In response to the passage of the NDAA, AntiSec launched an attack on its supporters in Congress.

> Upon discussion of routes to take to show their opposition to the overwhelming number of politicians who voted in favor of NDAA, Anonymous members agreed to begin with Senator Robert J Portman, a Republican lawmaker from the state of Ohio.
>
> By Thursday morning, an Anonymous operative released personal information pertaining to the lawmaker, and revealed that not only was Sen. Portman among the

[155] Lauren Kelley, "'Anonymous' Hackers Release Bank of America Emails, Allegedly Showing 'Corruption and Fraud'," *Alternet*, March 14, 2011 <www.alternet.org/newsandviews/527928>.

[156] Coleman, *Anonymous in Context*, p. 9.

[157] CovOps, "HA—Ha! 'Fuck FBI Friday'—Hackers LulzSec Strike FBI Affiliate InfraGard," *Ancaps Super-Forum*, June 4, 2011 <ancaps.super-forum.net>.

[158] Coleman, *Anonymous in Context*, p. 9.

> politicians to vote "aye" on the legislation, but it has also been revealed that the senator had good reason to do so.
>
> According to a OpenCongress.org, Sen. Portman received $272,853 from special interest groups that have shown support for NDAA.
>
> "Robert J. Portman, we plan to make an example of you," writes an Anonymous operative. The hacktivist has also released personal data including the senator's home address, phone number and social networking accounts in an attempt to further an infiltration from the Internet to show the opposition to the bill that colossally impacts the constitutional rights of Americans.
>
> According to the information posted by the operative, the nearly $300,000 in special interest monies lobbied at Portman could have helped him purchase around $1.7 million in real estate in Ohio.
>
> The next lawmaker to receive anywhere near as much as Sen. Portman is Senate Majority Leader Harry Reid, a Democrat from Nevada and third-ranked official in Congress, who pulled in more than $100,000 less than his Ohio counterpart with $172,635.[159]

Also in December 2011, AntiSec launched an attack—even more severe than that on HBGary—on "private" components of the security-industrial complex. They included Stratfor, a think tanks that provides independent strategic analysis of world affairs for both private corporations and the state "national security" apparatus, and a firm that sells military-grade equipment for police work.

> Anonymous hackers broke into web servers of Stratfor and copied 200 gigabytes worth of data. Thus far, it appears that the hackers have details only about Stratfor customers who purchased Stratfor's newsletter, but the hackers could easily have more than that. Several reports indicate Anonymous will next release more than 3.3 million client emails.
>
> An independent analysis by data loss and identity theft prevention service Identity Finder says that, so far, 9,651 active credit cards, 47,680 unique e-mail addresses, 25,680 unique phone numbers and 44,188 encrypted passwords were hacked from the A through M name list. More details will be released in the coming days as Anonymous publishes the N through Z list of names…
>
> Using various Twitter accounts, including @AnonymousIRC and @YourAnonNews, and the site Pastebin, Anonymous has published names, credit card numbers, and encrypted password information. None of what has been posted so far jeopardizes companies or government agencies, but that doesn't mean other types of sensitive data won't be posted in the near future…
>
> So far, nothing that has been released that will compromise military operations or national security. Stolen credit cards will cause headaches for a lot of people but not endanger them.

[159] *Ibid*., p. 9.

> However, if Anonymous releases the 3.3 million client e-mails it claims to have, there's no telling the damage it could cause. When companies and governments provide off-the-record information to Stratfor, they could easily be issuing confidential data. Anonymous has said it is now in possession of a "smoking gun for a number of crimes," but we will see in the next days if they are just spouting hot air or have something substantial…
>
> Anonymous has thus far published the credit card numbers of Stratfor customers starting with the letter A an ending with M, and it still plans on publishing customers N through Z. It also plans to release the aforementioned client e-mails to shed "some light on just how clueless this company really is when it comes to database security." These e-mail spools may have already hit the web, but preliminarily through the "darknet" or a network originally intended for those who want extra privacy. Those who want to read the exchanges through the "darknet" need special permissions to gain access.[160]

In the wake of the Internet blackout in protest of SOPA, and in direct reaction to the Kim Dotcom shutdown,

> Anonymous coordinated its largest DDoS campaign to date. This time, it did not reach out to the public at large to take part; it relied on its own (or rented) botnets. Anonymous targeted a slew of websites, including the homepages of Universal Music, the FBI, the US Copyright Office, the Recording Industry Association of America and the Motion Picture Association of America, all of which experienced downtime.[161]

In early February, in response to a Wylie, Texas policeman being placed on administrative leave for a kiddie porn offense, Anonymous breached the Texas Police Association's website and published the email and snail mail addresses of hundreds of officers.[162] Around the same time, Anonymous publicized a cache of emails from the website of the military law firm that represented accused American war criminals from the Haditha massacre, in response to their acquittal. A spokesman for the firm, Puckett & Faraj, complained that the attack might "completely destroy" it.[163]

Unfortunately later AntiSec operations like the Stratfor doxing attack, in retrospect, fall under the shadow of LulzSec/AntiSec hacker Sabu's arrest in March 2012, followed by reports of earlier collaboration with the FBI. In an earlier draft of this section, just before the news broke, I wrote this:

> Anonymous' new methods of attacking large-scale institutions—as demonstrated in HBGary, Stratfor, and the neo-Nazis—make the Low Orbit Ion Cannon look like the

[160] *Ibid*., p. 10.

[161] "Antisec Messes with Texas, Attacks Dozens of Police Systems and Chief Emails," *Infoshop News*, September 23, 2011 <news.infoshop.org>.

[162] Graeber, *The Democracy Project*, p. 253.

[163] Don Allen, "Anonymous attacking creators of indefinite detention bill," *The Wings of Lyra*, December 15, 2011 <wingsoflyra.blogspot.com.html>; RJ, "Anonymous Retaliates: Massive Information dump released on Senators who Passed NDAA," *The Daily Attack*, December 19, 2011 <thedailyattack.com>.

> Model-T. Indeed, doxing seems to be becoming as much a part of the standard Anonymous toolkit as LOIC was. At this rate, we can probably expect the equivalent of an Enron or Diebold email release every week before long.

This triumphalist perspective hit hard against the reality of the FBI's infiltration of LulzSec. Sabu (aka Hector Xavier Monsegur) was quietly arrested by the FBI in Summer 2011 as a result of sloppy information security. After a couple of months of keeping a low profile, Sabu re-emerged in September 2011 and— blackmailed with the prospect of punitive sentencing and removal from his dependent children—worked as a mole inside LulzSec. The information he provided led in March 2012 to the arrest of several leading figures in LulzSec.[164]

According to the FBI, the Stratfor attack was actually carried out on U.S. government computers—perhaps with the government's knowledge.

> A second document shows that Monsegur… provided an FBI-owned computer to facilitate the release of 5m emails taken from US security consultancy Stratfor… That suggests the FBI may have had an inside track on discussions between Julian Assange of WikiLeaks, and Anonymous, another hacking group, about the leaking of thousands of confidential emails and documents.[165]

But subsequent comments from FBI officials denied this possibility:

> "That's patently false," said one F.B.I. official, who would speak only on anonymity because the investigation was continuing. "We would not have let this attack happen for the purpose of collecting more evidence."
>
> F.B.I. officials said they learned of the Stratfor breach on Dec. 6, after hackers had already infiltrated the company's network and were knee-deep in Stratfor's confidential files. On that date, F.B.I. officials said, Jeremy Hammond, suspected as the attack's ringleader, informed Mr. Monsegur he had found a way into Stratfor's network and was already working to decrypt its data.
>
> The F.B.I. said that it immediately notified Stratfor, but said that at that point it was too late. Over the next several weeks, hackers rummaged through Stratfor's financial information, e-mail correspondence and subscribers' personal and financial information, occasionally deleting its most valuable data—all in full view of F.B.I. agents.
>
> In addition to monitoring hackers' chat logs, the F.B.I. managed, with Mr. Monsegur's help, to persuade Mr. Hammond and Stratfor's other attackers to use one of the agency's own computers to store data stolen from Stratfor…
>
> In an interview, F.B.I. officials clarified that they were able to salvage the Stratfor data that hackers transferred to its servers. Officials said this included some, but not all, of Stratfor's data. As for why the F.B.I. was not able to stop hackers from siphoning five million Stratfor e-mails to Wikileaks later on, the F.B.I. said hackers had also stored data on their own servers.[166]

[164] Sean Ludwig, "10 things you need to know about Anonymous' Stratfor hack," *VentureBeat*, December 28, 2011 <venturebeat.com>.

[165] Coleman, *Anonymous in Context*, p. 11.

[166] Jason Whiteley, "Hackers publish names, addresses of hundreds of Texas police officers," *wfaa.com Dallas-Fort Worth*, February 2, 2012 <www.wfaa.com>.

Online security experts at the time expected the long-term effect of Sabu's arrest to be minimal.

> "Anonymous is a huge sprawling octopus, and Sabu and his buddies are just a few suckers," said Graham Cluley, a senior technology consultant with online security company Sophos.
>
> Cut those off and the creature will continue to function—and if anything it will only be even more cross than before.
>
> There's no real estimate about how many people are involved with the group, but the kinds of attacks that have marked Anonymous' work recently, DDoS attacks, rely on big networks of users operating in unison, "like a sledgehammer," said Cluley.
>
> Unlike other cases like Megaupload, where the central repository of information shut down, or the LulzSec arrests, which went after specific hackers who broke down firewalls, all these Anonymous networks need to do is follow a little light organization and they can continue to function. Anonymous' supporters have said as much themselves: "Anonymous has grown beyond LulzSec and Sabu," it noted earlier today, quoting the title of an article written on the Death + Taxes blog on the arrests.[167]

Quinn Norton similarly anticipated limited damage from the arrests:

> Depending on what frame you look at Anonymous through, this may be true. While these arrests are devastating for the mediagenic hacking wing of Anonymous, other parts of the collective that more involved in traditional activism remain largely untouched. Anonymous activity against SOPA and other legislation in the USA, like the recent HR 347, and ACTA in Europe, are gaining steam. And the freedom ops involved with supporting protesters in the Middle East continue unphased.[168]

Unfortunately, despite all this optimism, there has been no subsequent return to major doxxing attacks on the scale of HBGary and Stratfor. There have, however, been some significant smaller-scale attacks by Anonymous offshoots, like Operation Last Resort (which included the publication in February 2013 of private information on 4,000 bank executives.

One attack associated with Operation Last Resort, in early February 2013, resulted in the publication of the logins, IP addresses and contact information on 4,000 bank executives which it collected from a Federal Reserve website.[169]

The Par:AnoIA group, or "Anonymous Intelligence Agency," claimed three weeks later to have

> leaked sensitive information related to Bank of America executives and the company's alleged effort to "spy and collect information on private citizens."

[167] Sam Biddle, "Anonymous May Have Completely Destroyed This Military Law Firm," *Gizmodo.com*, February 6, 2012 <gizmodo.com>.

[168] Kim Zetter, "LulzSec Leader Was Snitch Who Helped Snag Fellow Hackers," *Threat Level* (*Wired*), March 6, 2012 <www.wired.com>.

[169] Xeni Jardin, "Stratfor docs to Wikileaks from an FBI-owned computer," *Boing Boing*, March 7, 2012 <boingboing.net>.

> Par:AnoIA, a group that identifies itself as the Anonymous Intelligence Agency, said in a press release yesterday that it had released 14 gigabytes of data on hundreds of thousands of executives at companies around the world, including Bloomberg, Thomson Reuters, and TEKSystems, which the hacktivist collective claims was hired last year to spy on hackers and social activists.
>
> The group says the data was not acquired during a hack but rather was retrieved from an unsecured server in Israel.
>
> "The source of this release has confirmed that the data was not acquired by a hack but because it was stored on a misconfigured server and basically open for grabs," Par:AnoIA said. "Looking at the data it becomes clear that Bank of America, TEKSystems, and others (see origins of reports) gathered information on Anonymous and other activists' movement on various social-media platforms and public Internet Relay Chat (IRC) channels."
>
> The documents leaked by Anonymous include "intelligence" reports allegedly compiled by TEKSystems on "daily cyber threats" from around the world and Internet activity related to the Occupy Wall Street movement…[170]

The operation also published a large cache of information from the FBI's Regional Forensics Computer—much of which could be used for social engineering and phishing attacks to gain further information.[171]

In the meantime, Anonymous celebrated President's Day by hacking into U.S. State Department computers, doxing the agency, and

> leaking what appeared to be work email addresses for more than 170 U.S. State Department employees. In a separate attack, Anonymous also said it had doxed the investment banking firm George K. Baum & Company, and released what appeared to be 150 customer records via ZeroBin.[172]

Although there's been no attack on the HBGary/Stratfor scale by any selfidentified Anonymous offshoot, the so-called Sony Hack of 2014 was a cyberattack of unprecedented scale, carried out by an unknown group of hackers. Some of the group's demands referenced the film *The Interview*, which included the assassination of North Korean leader Kim Jong-Un. The U.S. government alleged that the hackers were connected with the North Korean government, although that is by no means clear. At any rate the attack was not particularly innovative in technical terms,[173] and would probably have been within the material capacity of any anticorporate hacker group with the technical capabilities of LulzSec or AntiSec in 2011.

The Sony Hack not only accessed and distributed extremely private information of all Sony employees, but basically destroyed the corporate intranet using "viper malware." Computer

[170] Nicole Perlroth, "Inside the Stratfor Attack," *Bits* (*New York Times*), March 12, 2012 <bits.blogs.nytimes.com>.

[171] Ingrid Lunden, "Too Big To Fail: Why Anonymous And Hacktivism Will Go On After Sabu," *TechCrunch*, March 6, 2012 <techcrunch.com>.

[172] Quinn Norton, "Anonymous Rocked by News That Top Hacker Snitched to Feds," *Threat Level* (*Wired*), March 7, 2012 <www.wired.com>.

[173] Violet Blue, "Anonymous posts over 4000 U.S. bank executive credentials," *ZDNet*, February 4, 2013 <www.zdnet.com-

systems were down for days, all content files were destroyed or rendered inaccessible, and employees were reduced to using their private email accounts and working with pencil and paper. Even Sony's payroll system was destroyed. According to Assistant FBI Director James Demarest, 90% of 7000010740/>; Reuters, "Federal Reserve Hacked," *The Guardian*, February 6, 2013 <www.guardian.co.uk>. corporate systems would have been unable to withstand a similar attack—even though it did not, to repeat, require any extraordinary level of technical expertise.[174]

What's interesting about the attack, and had far more to do with its effectiveness than the malware attacks on internal systems, according to John Robb, is that it "pierced the corporate veil." It targeted Sony employees as individuals, drove a wedge between the targeted workers and the company, and demoralized them by showing them the company was unable to protect them.

> The corporate veil is a fictive barrier that protects employees, as individuals, from what they do as employees for the corporations they work for. While the veil is primarily used as a legal term (when determining liability for example), it's also useful in thinking about what happens when corporations go to war.[175]

Regarding that last reference, it's instructive to compare the cyber-attack on Sony to the physical assaults on the employees of Halliburton and other Western corporations in Iraq and caused some contractors to withdraw from the country in an utter state of demoralization because nobody would work for them.[176]

Conclusion

For all the promise of Wikileaks and Anonymous, and the arc of uprisings beginning with the Arab Spring, and the unprecedented scale and scope of the latter, they demonstrated a rapid growth curve followed by levelling off and decline, just like the Seattle movement before them. And like the Seattle movement, they left as much unfulfilled promise as achievements behind them.

Even so, their aftershocks continue to jar entire nations almost five years since the uprising in Tunisia.

And to repeat, while movements like the Arab Spring, M15 and Occupy all have ends as well as beginnings, the grand post-1994 wave of which they are a part shows no sign of even leveling off yet. Each major cluster of movements, like the post-Seattle globalization movement and the cluster that included the Arab Spring and Occupy, is on a larger scale than its predecessor. This cluster of movements, from 2011 to the present, was associated with the 2008 economic downturn and the neoliberal austerity programs adopted in response to it. So while this wasn't the terminal crisis of the system, it probably won't be the last such wave of networked risings; and it's probably not much of a stretch to guess that the next cluster of networked movements to emerge in reaction to a new crisis will be even larger and more disruptive than this one.

[174] Steven Musil, "Anonymous leaks alleged data on BofA execs, surveillance," *CNet*, February 28, 2013 <news.cnet.com>.

[175] Boone, *op. cit.*

[176] *Ibid*.

Finally, we can expect the unfulfilled promise of this wave of movements to become part of the basic toolkit of the next one. Occupy failed to seize on all the possibilities for neighborhood self-governance, economic counter-institution building, mobile swarming and projects like Occupy Our Homes and Strike Debt after the closure of the camps. And Anonymous and its offshoots failed to continue corporate doxxings on the scale of HBGary and Stratfor. These are all possibilities that were experimented with and never developed to their full potential in the last round, but promise to do major structural damage to the system if and when they ever are fully implemented.

So let's see what happens next time. Better yet, let's *make* it happen.

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