

capitalism, growing out of it in a matter analogous to how the manorial economy emerged from the collapse of the slave economy of classical antiquity and capitalism emerged from late feudalism. And like the previous transitions, peer-production will evolve as a solution to the crisis tendencies of late capitalism when the latter reaches its limits.

Although his approach is closer to the Exodus and horizontalism of Negri and Hardt, it is not purely one of quietism towards the state. Bauwens sees a need for active engagement with the state to manage the transition and to run interference on behalf of emergent P2P institutions, even if the primary path is evolutionary rather than by seizure of the state and implementation of a post-capitalist successor society through it.

A first step is to become aware of the isomorphism, the commonality, of peer to peer processes in the various fields. That people devising and using P2P sharing programs, start realizing that they are somehow doing the same thing than the alterglobalisation movement, and that both are related to the production of Linux, and to participative epistemologies. Thus what we must do first is building bridges of cooperation and understanding across the social fields. ...

...[T]he second step is to “furiously” build the commons. When we develop Linux, it is there, cannot be destroyed, and by its very existence and use, builds another reality, based on another social logic, the P2P logic. Adopting a network sociality and building dense interconnections as we participate in knowledge creation and exchange is enormously politically significant. By feeding our immaterial and spiritual needs outside of the consumption system, we can stop the

Techno-Utopianism, Counterfeit and Real

(With Special Regard to Paul Mason’s Post-Capitalism)

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The basic principles of the emerging post-capitalist economy, with the peer-to-peer movement as its core, are:

“Firstly, there is the mutualisation of knowledge, the idea that it is unethical to withhold basic keys of knowledge that could solve the problems of the world.

“The second key point of open-source is called the ‘sharing economy’. It involves mutualising idle resources.

“The third point is relocating production. New types of technology — such as 3-D printing — mean we can apply a typical rule: what is physically heavy is produced locally; what is light is globally distributed.”

It’s a twist on the traditional economic paradigm of supply and demand.

“At present we have a supply-driven economy in which companies either respond to real needs or try to create a perception of need; they centralise production, have massive over-production then require marketing and advertising to get rid of products.

“Studies have shown that two-thirds of matter and energy go into the transportation of goods, not their actual production. If we can diminish that transportation, we can have a much lighter impact on the planet.”

Bauwens suggests an economic model involving micro-factories that produce designs created via open-source networks.²⁸

Bauwens sees commons-based peer production as a post-capitalist mode of production that will succeed

²⁸ Shane Gilchrist, “Sharing the Future,” Otago Daily Times Online News (New Zealand), November 30, 2015 <www.odt.co.nz>.

sphere”; the “market” and the “mission-oriented” activities of the new private sphere; and all the public services that are necessary for the common good of all citizens.

It is very important here to distinguish the market from capitalism. Markets predate capitalism, and are a simple technique to allocate resources through the meeting of supply and demand using some medium of exchange. The allocation mechanism is compatible with a wide variety of other, eventually dominant systems. It is compatible with methods of “just pricing,” full or “true cost accounting” (internalization of all costs), fair trade, etc. It does not require that labor and money be considered as commodities nor that workers be separated from the means of production. Markets can be subsumed to other logics and modalities such as the state or the commons.

Capitalism, on the other hand, considered by some as an “anti-market”..., requires amongst other features: 1) the separation of producers and the means of production; and 2) infinite growth (either through competition and capital accumulation, as described by Karl Marx, or through compound interest dynamics, as described by Silvio Gesell).

In the vision of a commons-oriented society, the market is subsumed under the dominant logic of the commons and regulated by the Partner State. ...

The essential characteristic of the new system is that the commons is the new core, and a variety of hybrid mechanisms can productively coexist around it, including reformed market and state forms.²⁷

²⁷ Bauwens and Iacomella, op. cit.

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Cooperative enterprises are the more prominent and developed form of private organization in this new economy.²⁵

The markets will be non-capitalist — without the artificially cheap material inputs and the artificial scarcity of naturally free information — and the state will increasingly take on the character of a networked support platform in its relationship to self-managed, horizontal civil society organizations.

- A powerful and re-invigorated sphere of reciprocity (gift-economy) centered around the introduction of time-based complementary currencies.
- A reformed sphere for market exchange, the kind of ‘natural capitalism’ described by Paul Hawken, David Korten and Hazel Henderson, where the costs for natural and social reproduction are no longer externalized, and which abandons the growth imperative for a throughput economy as described by Herman Daly.
- A reformed state that operates within a context of multi-stakeholdership and which is no longer subsumed to corporate interests, but act as a fair arbiter between the Commons, the market and the gift economy.²⁶

The public sector of the P2P economy is neither a corporate welfare state at the service of a financial elite, nor a welfare state that has a paternalistic relation to civil society, but a Partner State, which serves civil society and takes responsibility for the metagovernance of the three spheres. The Partner State is dedicated to supporting “the common value creation of the civic

²⁵ Bauwens and Iacomella, op. cit.

²⁶ Ibid.

with the commons as its main institution, which uses peer production to generate common value outside of the market logic. These commons consist of both the natural heritage of mankind (oceans, the atmosphere, land, etc.), and commons that are created through collective societal innovation, many of which can be freely shared because of their immaterial nature (shared knowledge, software and design, culture and science). Civil society hosts a wide variety of activities that are naturally and structurally beneficial to the commons — not in an indirect and hypothetical way, as claimed by the “Invisible Hand” metaphor, but in a direct way, by entities that are structurally and constitutionally designed to work for the common good. This sphere includes entities such as trusts, which act as stewards of physical resources of common use (land trusts, natural parks), and for-benefit foundations, which help maintain the infrastructure of cooperation for cultural and digital commons. ...

Around this new core is a private sphere, where market entities with private agendas and private governance can still create added-value around the commons by producing relatively scarce goods and services. However, because of the pathological and destructive nature of profit-maximizing corporations, in the P2P economy this private sphere is reformed to serve more ethical ends by using proper taxation, revenue and benefit-sharing modalities to help generate positive externalities, e.g., infrastructure, shareable knowledge, and by using taxation, competition, and rent-for-use to minimize negative externalities, e.g., pollution, overuse of collective resources.

Too often state socialists and verticalists react dismissively to commons-based peer production and other networked, open-source visions of socialism, either failing to see any significant difference between them and the vulgar '90s dotcom hucksterism of Newt Gingrich, or worse yet seeing them as a Trojan horse for the latter.

There is some superficial similarity in the rhetoric and symbols used by those respective movements. But in their essence they are very different indeed.

I. Capitalist Techno-Utopianism from Daniel Bell On

According to Nick Dyer-Witheford, capitalist techno-utopianism is “the immediate descendant of a concept of the late 1960s — postindustrial society.” And post-industrial society, in turn, was an outgrowth of Daniel Bell’s earlier “end of ideology” thesis.

Postwar affluence, the institutionalization of collective bargaining, and the welfare state had banished the class conflicts of an earlier era from the scene. [Western industrial] societies presented the successful socioeconomic model toward which other experiments, including those in the “underdeveloped” and “socialist” world, would gradually converge. This was the condition of the “end of ideology” — which meant, in general, an end of alternatives to liberal capitalism....¹

According to Bell, post-industrialism meant that knowledge would become “society’s central wealth-producing resource.” This change would bring with it a shift from heavy manufacturing to the tertiary economy of services and from “manual labor to the

¹ Nick Dyer-Witheford, *Cyber-Marx: Cycles and Circuits of Struggle in High-Technology Capitalism* (Urbana and Chicago: University of Illinois Press, 1999). pp. 16–17.

distributed technology: spare computing cycles, distributed telecommunications and any kind of viral communicator meshwork.

- P2P can arise wherever other forms of distributed fixed capital are available: such is the case for carpooling, which is the second most used mode of transportation in the U.S.
- P2P can arise wherever the process of design may be separated from the process of physical production. Huge capital outlines for production can co-exist with a reliance on P2P processes for design and conception.
- P2P can arise wherever financial capital can be distributed....
- P2P could be expanded and sustained through the introduction of universal basic income.²⁴

(As an anarchist who sees universal basic income as a positive step compared to the capitalist welfare state but also sees it as at least potentially problematic as an end-state institution, I would note that the same function is likely to be served by other, more decentralized voluntary institutions for pooling costs, risks and income through micro-villages, multi-family cohousing units and the like.)

The state and market will continue to exist, but will take on a fundamentally different character, defined by its relation to the larger society — with the commons as its hegemonic institution — into which it is embedded.

The peer-to-peer vision relies upon the three major sectors of society — the state, market and civil society — but with different roles and in a revitalized equilibrium. At the core of the new society is civil society,

²⁴ Ibid.

mutualities of the workers in the industrial age), but it also differs mostly through its largely immaterial characteristics. The older Commons were localized, used, and sometimes regulated by specific communities; the new Commons are universally available and regulated by global cyber-collectives, usually affinity groups. While the new Commons is centered around non-rival goods (that is, in a context of abundance) the older forms of physical Commons (air, water, etc.) increasingly function in the context of scarcity, thus becoming more regulated.²²

- peer production effectively enables the free cooperation of producers, who have access to their own means of production, and the resulting use-value of the projects supercedes for-profit alternatives...
- peer governance transcends both the authority of the market and the state
- the new forms of universal common property, transcend the limitations of both private and public property models and are reconstituting a dynamic field of the Commons.²³

Although commons-based peer production first appeared in the immaterial sphere, new technological possibilities for the widespread ownership of cheap, small-scale material production tools and distributed aggregation of capital have laid the groundwork for the same mode of production to spread rapidly into the physical realm as well.

- P2P can arise not only in the immaterial sphere of intellectual and software production, but wherever there is access to

²² Ibid.

²³ Ibid.

preeminence of professional and technical work,” meaning that the dominant figures would be

scientists, engineers, and administrators, a new “knowledge class” lodged primarily within government and academia, bearers of the rationalist skills and virtues required by increasing organizational and technological complexity. Bell argue that the endeavors of this new class could create an epoch of rationalized integration and prosperity, which... would finally escape from the material want, economic crisis, and class conflict of the industrial era.²

Knowledge would “replace both labor and capital as the main factor of production,” with the conflict between workers and capitalist being transcended by an emerging new class of professionals, “based on knowledge rather than property.”

Capital will be transformed by technical and administrative experts, abandoning fixation with profit, becoming more socially responsible, and giving “moral issues” equal priority with balance sheets. Labor too will be transfigured. Technological development will raise living standards, automate manual toil, and thereby liquidate Marx’s subject of history — the immiserated industrial proletariat.³

The primary enemy of this emerging technocratic utopia was radical politics.

Rational progress — embodied in the technocratic state and its knowledge elite — is under siege by the

² Ibid., pp. 17–18.

³ Ibid., p. 19.

irrational protest by the New Left, student revolt, affirmative action groups, and an “adversary culture.” Only if the pilotage of society is entrusted to the cadres of technical experts, scientists, engineers, and administrators will chaos be avoided and the dawning era safely ushered in.⁴

But in fact all these beliefs could be attributed almost verbatim to the ideologists of the Progressive movement at the turn of the 20th century. Progressivism had its origins as the ideology of the managerial and professional stratum which ran the new, large institutions (corporations, regulatory agencies, universities, large municipal governments, public school systems and foundations) that sprang up to dominate society in the late 19th century.

The first corporate managers came from an industrial engineering background. They saw the corporation — as well as other large organizations — as something to be rationalized the same way engineers on the factory floor rationalized the production process. According to Rakesh Khurana they sought to apply the engineer’s approach of standardizing and rationalizing tools, processes and systems to rationalizing the organization.⁵

And as time passed and the kinds of organizations they headed came to be the hegemonic norm that characterized the larger society, they came to view outside society as a whole as something to be organized and managed by the same scientific principles that governed the large organization. Yehouda Shenhar described, in *Manufacturing Rationality: The Engineering Foundations of the Managerial Revolution*, the transfer of mechanical and industrial engineers’ understanding of production processes to the management

⁴ *Ibid.*, p. 19.

⁵ Rakesh Khurana, *From Higher Aims to Hired Hands: The Social Transformation of American Business Schools and the Unfulfilled Promise of Management as a Profession* (Princeton and Oxford: Princeton University Press, 2007), p. 56.

in creating the new immaterial use value, just as the merchants and capitalists were more effective in the material economy.²⁰

As the hegemonic organizational form of the new society, peer-to-peer is characterized by processes that

- produce use-value through the free cooperation of producers who have access to distributed capital: this is the P2P production mode, a ‘third mode of production’ different from for-profit or public production by state-owned enterprises. Its product is not exchange value for a market, but use-value for a community of users.
- are governed by the community of producers themselves, and not by market allocation or corporate hierarchy: this is the P2P governance mode, or ‘third mode of governance.’
- make use-value freely accessible on a universal basis, through new common property regimes. This is its distribution or ‘peer property mode’: a ‘third mode of ownership,’ different from private property or public (state) property.²¹

With P2P, people voluntarily and cooperatively construct a commons according to the communist principle: “from each according to his abilities, to each according to his needs.” The use-value created by P2P projects is generated through free cooperation, without coercion toward the producers, and users have free access to the resulting use value. The legal infrastructure [of open licenses] creates an ‘Information Commons.’ The new Commons is related to the older form of the commons (most notably the communal lands of the peasantry in the Middle Ages and of the original

²⁰ Section 7.1.A. Marginal trend or premise of new civilization? in Bauwens, *The Peer to Peer Manifesto*.

²¹ Bauwens, “The Political Economy of Peer Production.”

It can no longer grow extensively, but it cannot replace it by intensive growth. The history of slave empires and their transition to feudal structures is about to repeat itself, but in a different form.¹⁷

The successor society centered on peer production will not have capitalism's core logic (material abundance, immaterial scarcity) at all. It will be steady-state and sustainable, with true cost pricing, in its use of physical resources, and it will permit the free replication, sharing and use of information without limit.¹⁸

Much as when "Marx identified the manufacturing plants of Manchester as the blueprint for the new capitalist society," Bauwens sees commons-based peer production as the core logic of the post-capitalist successor society.¹⁹

A new class of knowledge workers, in its broad sense already the majority of the working population in the West, and poised to be in the same situation elsewhere in a few decades, are creating new practices and tools that enable them to do what they need to do, i.e. knowledge exchange. As they create these new tools, bringing into being a new format of social exchange, they enable new types of subjectivation, which in turn not only changes themselves, but the world around them. When Marx wrote his Manifesto, there were only 100,000 industrial workers, yet he saw that this new social model was the essence of the new society being born. Similarly, even if today only a few million knowledge workers consciously practice P2P, one can see the birth of a new model of a much larger social consequence. This new model is inherently more productive

¹⁷ Bauwens, "Can the Experience Economy be Capitalist?"

¹⁸ Bauwens, *The Peer to Peer Manifesto: The Emergence of P2P Civilization and Political Economy* (MasterNewMedia: November 3, 2007) <www.masternewmedia.org>.

¹⁹ Bauwens, "The Political Economy of Peer Production" CTheory.net, December 1, 2005 <www.ctheory.net>.

of organizations, and of the managers' understanding of organizations to society as a whole.⁶

Since the difference between the physical, social, and human realms was blurred by acts of translation, society itself was conceptualized and treated as a technical system. As such, society and organizations could, and should, be engineered as machines that are constantly being perfected. Hence, the management of organizations (and society at large) was seen to fall within the province of engineers. Social, cultural, and political issues... could be framed and analyzed as "systems" and "subsystems" to be solved by technical means.⁷

Probably the most important feature of Progressivism, and its closest point of intersection with liberal post-industrialism, was its focus on the application of disinterested expertise as transcending politics and class conflict. Of course it's no coincidence this was the heyday of Taylorist "scientific management," whose purpose was to suppress labor conflict on the shop floor by substituting the manager's and engineer's expertise for the skilled worker's direction of the work process. And according to Shenhav

[l]abor unrest and other political disagreements of the period were treated by mechanical engineers as simply a particular case of machine uncertainty to be dealt with in much the same manner as they had so successfully dealt with technical uncertainty. Whatever disrupted the smooth running of the organizational machine was viewed and constructed as a problem of uncertainty.⁸

⁶ Yehouda Shenhav, *Manufacturing Rationality: The Engineering Foundations of the Managerial Revolution* (Oxford and New York: Oxford University Press, 1999).

⁷ Ibid., p. 74.

⁸ Ibid., p. 174.

Christopher Lasch argued that for the new managerial class

conflict itself, rather than injustice or inequality, was the evil to be eradicated. Accordingly, they proposed to reform society... by means of social engineering on the part of disinterested experts who could see the problem whole and who could see it essentially as a problem of resources... the proper application and conservation of which were the work of enlightened administration.⁹

Going back to Shenhav, “American management theory was presented as a scientific technique administered for the good of society as a whole without relation to politics.”¹⁰ Taylor saw bureaucracy as “a solution to ideological cleavages, as an engineering remedy to the war between the classes.”¹¹ At the level of state policy, the Progressives’ professionalized approach to politics was “perceived to be objective and rational, above the give-and-take of political conflict.” It reflected “a pragmatic culture in which conflicts were diffused and ideological differences resolved.”¹² Both Progressives and industrial engineers “were horrified at the possibility of ‘class warfare’” and saw “efficiency” as a means to “social harmony, making each workman’s interest the same as that of his employers.”¹³

The end of ideology and post-industrialism exemplified all these earlier qualities of Progressivism in full measure. And so, equally, have all the various strands of capitalist techno-utopianism that have emerged from the 1990s on.

Bell’s post-industrialist thesis intersected, in the 1970s, with the rise of networked digital communications and the personal com-

⁹ Christopher Lasch, *The New Radicalism in America* (1889–1963): *The Intellectual as a Social Type* (New York: Vintage Books, 1965), p. 162.

¹⁰ Shenhav, p. 5.

¹¹ *Ibid.*, p. 8.

¹² *Ibid.*, p. 35.

¹³ *Ibid.*, p. 96.

1. The creation of non-monetary value is exponential

2. The monetization of such value is linear

In other words, we have a growing discrepancy between the direct creation of use value through social relationships and collective intelligence (open platforms create near infinite value through the operations of the laws of Metcalfe and Reed), but only a fraction of that value can actually be captured by business and money. Innovation is becoming social and diffuse, an emergent property of the networks rather than an internal R & D affair within corporations; capital is becoming an a posteriori intervention in the realization of innovation, rather than a condition for its occurrence; more and more positive externalizations are created from the social field.

What this announces is a crisis of value, most such value is *beyond measure*, but also essentially a crisis of accumulation of capital. Furthermore, we lack a mechanism for the existing institutional world to re-fund what it receives from the social world. So on top of all of that, we have a crisis of social reproduction: peer production is collective sustainable, but not individually. For all of this, we will need new policies, major reforms and restructurations in our economy and society.

But one thing is sure: we will have markets, but the core logic of the emerging experience economy, operating as it does in the world of non-rival exchange, is unlikely to have capitalism as its core logic.

And in addition, as we saw above, the artificial scarcities on which rent extraction depends are becoming largely unenforceable in the information realm.

The dream of our current economy is therefore one of intensive development, to grow in the immaterial field, and this is basically what the experience economy means. The hope that it expresses is that business can simply continue to grow in the immaterial field of experience.

But is that really so? I have a set of arguments and observations that argue against that hope. First of all, in the field of the immaterial, we are no longer dealing with scarce goods, but with marginal reproduction costs and non-rival goods. With such goods, sharing does not diminish the enjoyment of the good, since all parties retain their ability to use them. The emergence of peer production shows a new form of creating value, that is in fundamental aspects “outside the market” TM. Typically, in commons-based production we have a common pool, accessible to everyone (Linux, Wikipedia), around which an ecology of business can form to create and sell scarcities (usually services and experiences). In sharing-oriented production (YouTube, Google documents), we have proprietary platforms that enable and empower the sharing, but at the same time, sell the aggregated attention (a scarcity), to the advertising market. Finally, in the third crowdsourcing mode, companies try to integrate participation in their own value chain and framework.

So the good news is that indeed business is possible. But I would like the readers to entertain the following proposition, nl. That:

puter revolution. The result was a new wave of techno-utopian literature exemplified by Alvin Toffler’s *The Third Wave* and John Naisbett’s *Megatrends*.

Exponents of this model have used exuberantly optimistic, “revolutionary” or utopian rhetoric about the nature of the social transformations that can be expected.

The undesirable features of industrial society — meaningless work, huge impersonal organizations, rigid routines and hierarchies, anonymous and alienating urban existences — are seen dissolving. In their place the information age holds out the hope of diversification, localism, flexibility, creativity, and equality. Promises include the computer-aided recovery of craft skills and artisanal traditions...; the revivication of domestic life in an electronic cottage; the participatory democracy of electronic town halls; and a historically unprecedented diffusion of every sort of knowledge — “all information in all places at all times.”¹⁴

The liberal capitalist variant of information age utopianism is distinguished — like its Progressive and post-industrial antecedents — by its hand-waving away of class antagonism. The transition to Third Wave information capitalism will be peaceful. It will be positive-sum and benefit everybody, rendering the old class struggles irrelevant.¹⁵

But the class struggles remain very much real — only under post-industrialism they center on the ownership, not of land or physical capital, but of knowledge. Dyer-Witheford’s reference above to knowledge as a “wealth-creating resource” is central to the real nature of capitalist techno-utopianism.

¹⁴ Dyer-Witheford, p. 25.

¹⁵ *Ibid.*, pp. 26–27.

“The generation of wealth increasingly depends on an ‘information economy’ in which the exchange and manipulation of symbolic data matches exceeds, or subsumes the importance of material processing.”¹⁶

As Manuel Castells summed up the post-industrial thesis:

1. The source of productivity and growth lies in the generation of knowledge, extended to all realms of economic activity through information processing.
2. Economic activity would shift from goods production to services delivery....
3. The new economy would increase the importance of occupations with a high informational and knowledge content in their activity. Managerial, professional, and technical occupations would grow faster than any other occupational position and would constitute the core of the new social structure.¹⁷

Toffler described it as a “new system of accelerated wealth creation” based on “the exchange of data, information and knowledge.” Land and labor are less important than the knowledge that can find substitutes for them.¹⁸

The same principle resurfaces in one of the most recent iterations of post-industrialism, Paul Romer’s “New Growth Theory.” The main source of growth is not simply adding inputs of material resources or labor, which are finite, but developing better ideas —

¹⁶ *Ibid.*, p. 24.

¹⁷ Manuel Castells, *The Rise of the Network Society* (Blackwell Publishers, 1996), pp. 203–204.

¹⁸ Dyer-Witheford, p. 24.

drawing on this vast reservoir of a ‘commons of general intellectuality’, without which they could not function. That innovation is diffused throughout the social body.¹³

...Just as post- or late feudal society and its absolutist kings needed the bourgeoisie, late capitalist society cannot survive without knowledge workers and their P2P practices. It can be argued that the adoption of P2P processes is in fact essential for competitiveness: a strong foundation of P2P technologies, the use of free or open source software, processes for collective intelligence building, free and fluid cooperation, are now all necessary facets of the contemporary corporation.¹⁴

On the other hand, P2P systems are not just the outcome of plans of the establishment, but are the result of the active intervention of consumers avid for free access to culture, of knowledge workers actively working to find technical solutions for their needed cooperative work, and of activists consciously working for the creation of tools for an emerging participative culture. P2P is both ‘within’ and ‘beyond’ the current system.¹⁵

Some of the more “progressive” elites see “cognitive capitalism” as a way out of the crisis, but it simply isn’t a viable alternative. Although cognitive capitalism needs P2P, “it cannot cope with it very well, and often P2P is seen as a threat.... [W]hile being part and parcel of the capitalist and postmodern logics, it also already points beyond it....”¹⁶

¹³ Section 3.1.B. The Communism of Capital, or, the cooperative nature of Cognitive Capitalism, in Bauwens, *The Peer to Peer Manifesto*.

¹⁴ Section 7.1.B. P2P, Postmodernity, Cognitive Capitalism: within and beyond, in Bauwens, *The Peer to Peer Manifesto*.

¹⁵ 2.1.B. The emergence of peer to peer as technological infrastructure, in Bauwens, *The Peer to Peer Manifesto*.

¹⁶ 7.1.B. P2P, Postmodernity, Cognitive Capitalism: within and beyond, in Bauwens, *The Peer to Peer Manifesto*.

This process will take time but there is one crucial difference: the biosphere will not allow centuries of transition. So the maturation of the new configuration will have to consolidate faster and the political revolutions come earlier.¹¹

“Cognitive capitalism” is increasingly dependent on p2p productive relations and communications infrastructures, and is attempting to incorporate them into its old corporate framework as a way of injecting life into the dying system. But it is a force that cannot be contained within the institutional framework of the old society, and can only come into its full development as the basis for a successor society.

Companies have used these technologies to integrate their processes with those of partners, suppliers, consumers, and each other, using a combination of intranets, extranets, and the public internet, and it has become the absolutely essential tool for international communication and business, and to enable the cooperative, internationally coordinated projects carried out by teams. As we will see in our full review on the emergence of P2P practices across the social field, an emphasis on business and economic processes would be very one-sided. Politics, culture, and science are equally changed by distributed practices enabled by the new technological infrastructure. Examples are the growth of massive multi-authorship in different scientific fields, with hundreds of people involved in research projects, and the distributed use of scientific instruments, such as arrays of small radio telescopes.¹²

So the general conclusion of all the above has to be the essentially cooperative nature of production, the fact that companies are

¹¹ Bauwens. “Three Times Exodus, Three Phase Transitions” P2P Foundation Blog, May 2, 2010 <blog.p2pfoundation.net>.

¹² Section 2.1.B. The emergence of peer to peer as technological infrastructure, in Bauwens, *The Peer to Peer Manifesto: The Emergence of P2P Civilization and Political Economy* (MasterNewMedia: November 3, 2007) <www.masternewmedia.org>.

which can be imitated without limit — on how to use the same amount of resources and labor in more effective ways.¹⁹

The problem is that, absent coercion, the natural result of ephemeralization — the use of knowledge to reduce the material inputs required for production — is deflation. The only way to transform this improved efficiency into wealth — money wealth — is prevent competition from diffusing the benefits and making things cheaper for everybody.

Knowledge can only be a wealth-creating resource — or capital — if it is owned. It can function as a source of rents only if it is enclosed, if access to it is restricted, if tribute can be demanded for allowing such access.

It’s no coincidence that the most fervent enthusiasts of the “Information Superhighway” in the ’90s, were also strident advocates of draconian “intellectual property” laws and subsidies to the telecom industry. Newt Gingrich’s Progress and Freedom Foundation issued a pamphlet called “Cyberspace and the American Dream: A Magna Carta for the Knowledge Age,” whose agenda included proposals that sounded remarkably like the Digital Millennium Copyright Act and Telecommunications Act.

And it’s likewise no coincidence that Romer’s model of growth relies heavily on “intellectual property” for monetizing the increased productivity as rents to investors rather than allowing it to deflate prices for consumers.

Romer: ...When we speak of institutions, economists mean more than just organizations. We mean conventions, even rules, about how things are done. The understanding which most sharply distinguishes science from the market has to do with property rights. In the market, the fundamental institution is the notion of

¹⁹ Ronald Bailey, “Post-Scarcity Prophet: Economist Paul Romer on growth, technological change, and an unlimited human future” Reason, December 2001 <reason.com>.

private ownership, that an individual owns a piece of land or a body of water or a barrel of oil and that individual has almost unlimited scope to decide how that resource should be used.

In science we have a very different ethic. When somebody discovers something like the quadratic formula or the Pythagorean theorem, the convention in science is that he can't control that idea. He has to give it away. He publishes it. What's rewarded in science is dissemination of ideas. And the way we reward it is we give the most prestige and respect to those people who first publish an idea.

reason: Yet there is a mechanism in the market called patents and copyright, for quasi-property rights in ideas.

Romer: That's central to the theory. To the extent that you're using the market system to refine and bring ideas into practical application, we have to create some kind of control over the idea. That could be through patents. It could be through copyright. It might even be through secrecy....²⁰

Although Romer classifies "intellectual property" as an "institution of the market," it is in fact no such thing (except perhaps insofar as it's an institution that enables people to charge money for something on the "market," in the sense of the cash nexus, that would otherwise be naturally free). The fact that he distinguishes IP, as an "institution of the market," from "institutions of science" like free sharing of knowledge, is an admission that for him the "market" is not simply the realm of voluntary interaction but the cash nexus as such. "Intellectual property" is an artificial creation

²⁰ *Ibid.*

In short, we have the same scheme:

1. Systemic crisis
2. Exodus
3. Mutual reconfiguration of classes
4. After a long period of re-orientation and phase transitions: the political revolutions that configure the new capitalist system as dominant

Again, the process of reconfiguration takes several centuries, and the political revolutions come at the end of it.

Hypothesis of a third transition: capitalism to peer to peer

Again, we have a system faced with a crisis of extensive globalization, where nature itself has become the ultimate limit. It's way out, cognitive capitalism, shows itself to be a mirage.

What we have then is an exodus, which takes multiple forms: precarity and flight from the salaried conditions; disenchantment with the salaried condition and turn towards passionate production. The formation of communities and commons are shared knowledge, code and design which show themselves to be a superior mode of social and economic organization.

The exodus into peer production creates a mutual reconfiguration of the classes. A section of capital becomes netarchical and 'empowers and enables peer production', while attempting to extract value from it, but thereby also building the new infrastructures of cooperation.

the new system (doubling of the population between 10 and 13th century).⁹

...[T]he failure of extensive development is what brought down earlier civilizations and modes of production. For example, slavery was not only marked by low productivity, but could not extend this productivity as that would require making the slaves more autonomous, so slave-based empires had to grow in space, but at a certain point in that growth, the cost of expansion exceeded the benefits. This is why feudalism finally emerged, a system which refocused on the local, and allowed productivity growth as serfs had a self-interest in growing and ameliorating the tools of production.

The alternative to extensive development is intensive development, as happened in the transition from slavery to feudalism. But notice that to do this, the system had to change, the core logic was no longer the same.¹⁰

The second transition: feudalism to capitalism

Something very similar starts occurring as of the 16th century. The feudal system enters in crisis, and serfs start fleeing the countryside, installing themselves in the cities, where they are rejected by the feudal guild system, but embraced by a new type of proto-capitalist entrepreneurs. In other words, a section of the feudal class (as well as some upstarts from the lower classes) re-orient themselves by investing in the new mode of production (and those that don't gradually impoverish themselves), while serfs become workers.

⁹ Bauwens and Iacomella, op. cit.

¹⁰ Bauwens, "Can the Experience Economy Be Capitalist?" P2P Foundation Blog, September 27, 2007 <blog.p2pfoundation.net>.

of the state. Romer — again — implicitly admits as much, arguing that the natural functioning of the market price-setting mechanism, under which price tends towards marginal production cost, is inadequate to pay back the original outlays for R&D.²¹ In fact he explicitly argues for the superiority of monopoly pricing over market competition for some purposes.

There was an old, simplistic notion that monopoly was always bad. It was based on the realm of objects — if you only have objects and you see somebody whose cost is significantly lower than their price, it would be a good idea to break up the monopoly and get competition to reign freely. So in the realm of things, of physical objects, there is a theoretical justification for why you should never tolerate monopoly. But in the realm of ideas, you have to have some degree of monopoly power. There are some very important benefits from monopoly, and there are some potential costs as well. What you have to do is weigh the costs against the benefits.²²

Romer's model is essentially Schumpeterian, in the sense that Schumpeter regarded the market power of the monopoly corporation as "progressive" because it enabled it to charge a price above marginal cost in order to subsidize innovation. Hence Romer's Schumpeterian schema precludes price-taking behavior in a competitive market; rather, it presupposes some form of market power ("monopolistic competition") by which firms can set prices to cover average costs. Romer argues that his model of economic growth based on innovation is incompatible with price-taking behavior. A firm that invested significant sums in innovation, but sold only at marginal cost, could not survive as a price-taker. It is necessary,

²¹ *Ibid.*

²² *Ibid.*

therefore, that the benefits of innovation — even though non-rival by their nature — be at least partially excludable through “intellectual property” law.²³

And cognitive capitalism and Romer’s “new growth theory” are implicit in all the models of “progressive capitalism,” “green capitalism” and the like that we hear from Bill Gates, Warren Buffet, Bono and their ilk. ...

²³ Paul M. Romer, “Endogenous Technological Change” (December 1989). NBER Working Paper No. W3210.

capitalist political economy is reaching crises of extensive inputs and will be supplanted by a successor system that is able to pursue intensive use of inputs in ways its predecessor couldn’t. And the phase transition includes an “Exodus” very much like that envisioned by Negri and Hardt.

The first transition: Rome to feudalism

At some point in its evolution (3rd century onwards?), the Roman empire ceases to expand (the cost of maintaining empire and expansion exceeds its benefits). No conquests means a drying up of the most important raw material of a slave economy, i.e. the slaves, which therefore become more ‘expensive’. At the same time, the tax base dries up, making it more and more difficult to maintain both internal coercion and external defenses. It is in this context that Perry Anderson mentions for example that when Germanic tribes were about to lay siege to a Roman city, they would offer to free the slaves, leading to an exodus of the city population. This exodus and the set of difficulties just described, set of a reorientation of some slave owners, who shift to the system of coloni, i.e. serfs. I.e. slaves are partially freed, can have families, can produce from themselves and have villages, giving the surplus to the new domain holders. Hence, the phase transition goes something like this: 1) systemic crisis ; 2) exodus 3) mutual reconfiguration of the classes.

This whole process would of course take five centuries. In the First European Revolution, ... the feudal system would only consolidate around 975, the date of the political revolution confirming the previous phase transition, and setting up a consolidated growth phase for

ism inherited the artificial property rights in land of earlier systems of exploitation, by which vacant and unimproved land is engrossed and held out of use on a continuing basis, such engrossed land is made available to cultivators only on condition of paying tribute to the engrosser, or a landed oligarchy is superimposed on existing cultivators. Other forms of artificial scarcity are regulatory entry barriers that impose unnecessary capital outlays for undertaking production or limit the number of producers, regulations that impose artificial floors under the cost of subsistence, restraints on competition between producers that facilitate administered pricing, and restraints on competition in the issuance of credit and currency that enable those engaged in that function to charge usurious prices for it. Perhaps the most important form of artificial scarcity today is so-called “intellectual property,” which is a legal monopoly on the right to perform certain tasks or use certain knowledge, rather than engrossment of the means of production themselves.

Artificial scarcity, like artificial abundance, is becoming increasingly unsustainable. Copyright is rapidly becoming unenforceable, as the proprietary content industries are learning to their dismay. And the implosion of necessary capital outlays for manufacturing and of the feasible scale for micro-manufacturing, coupled with the ease of sharing digital CAD/CAM files, is raising the transaction costs of enforcing industrial patents to unsustainable levels. Intensive growing techniques like Permaculture are far more efficient in terms of output per acre than factory-farming, thus reducing the necessity and value of engrossed land for people to feed themselves. And the explosion vernacular building technologies, coupled with the fiscal exhaustion of states that enforce zoning regulations and building codes and the like, means that the imposition of artificial costs of comfortable subsistence is likewise becoming unsustainable.

Meanwhile, as capitalism reaches these terminal crises, it is generating its successor — its gravedigger classes — from within its own interstices. Like the classical slave economy and feudalism,

II. Categories of Leftist Techno-Utopianism

Dyer-Witheford goes on to survey the approaches to cybernetic technology on the part of assorted Marxisms — or at least schools of left-wing or socialistic analysis — of the 20th century.

The “scientific socialists” or neo-orthodox Marxists celebrate the liberatory potential of technology, and its role in both making capitalism unsustainable and providing the building blocks of a post-capitalist society of abundance. Their failing, as he sees it, is a tendency towards technological determinism which reduces the agency of the working class — its central role in self-liberation — to almost nothing. Rather an almost inevitable transition is driven by the forces of production or social relations of production.¹

The second strand of Marxist thought on high technology is the pessimists or neo-Luddites, who emphasize the nature of technology as a totalizing system of control. They include theorists of work-discipline like Braverman and Marglin, and David Noble’s work on deskilling through automated CNC machine tools.² Similarly cultural theorists like Marcuse and media analysts Herbert Schiller view the corporate control of communications as a totalitarian force that closes off possibilities of critique.³

The ruling class, by definition, always selects among the variety of technological alternatives for one that best serves its interest; it follows that the ruling classes’ need for control is built into

¹ Dyer-Witheford, pp. 43–47.

² Ibid., pp. 48–49.

³ Ibid., p. 50.

whatever technology is in use and there is exploitative by its very nature.⁴

This approach is useful, Dyer-Witheford argues, because it sees through the liberal capitalist techno-utopian project's treatment of technology as class-neutral and positive-sum, and points to the very real class agenda embodied in that project.⁵

But its shortcomings are far more significant. It makes the mistake of equating "capitalism's intentions and its capacities," and "ignores the consequences of [workers'] counter-strategies and resistances." In particular, it neglects "the possibility — particularly apparent in the field of media and communications technologies — that capital's laboring subjects may find real use-values, perhaps even subversive ones, for the new technologies."⁶

These latter possibilities are heightened, I would add, by the radical cheapening and ephemerality of new production and communications technology, and the resulting collapse of entry barriers — at least those based on material conditions — for production directly undertaken and controlled by producers.

The strand on the Left which most resembles liberal capitalist "information society" theory — post-Fordism — may include Marxists but is not necessarily Marxist as such. It shares a blurry border area with liberal capitalist models. The post-Fordist ranks include Michael Piore and Charles Sabel, authors of *The Second Industrial Divide*. Their flavor, Dyer-Witheford notes, is more Proudhonian than Marxist: "fascinated by the prospects of escaping the alienation of modern capitalism by return to small-scale, cooperative, artisanal production" — a situation which will "allow the restoration to the workplace of the judgment, learning, and variety lost to Taylorism."⁷

⁴ Ibid., p. 52.

⁵ Ibid., p. 53.

⁶ Ibid., pp. 53–54.

⁷ Ibid., p. 56.

main role of the US Navy is to keep the major sea lanes open at general taxpayer expense to subsidize the transportation of oil and other looted natural resources from the Global South, and to provide secure shipping lanes for container ships hauling offshored production back to the shelves of Walmart.

The problem is that when a particular factor input is subsidized and artificially cheap, a business will consume increasing amounts of it as it substitutes it for other factors. And at the same time, capitalism has been beset by a long-term tendency, since the depressions of the late 19th century, towards crises of overinvestment and excess capacity, demand shortfalls and declining organic rates of profit.

This means that an ever growing amount of state subsidies, and ever larger inputs of subsidized material inputs, are necessary just to keep the corporate economy running artificially in the black. In the words of James O'Connor, in *Fiscal Crisis of the State*, the state must subsidize a perpetually increasing share of the operating costs of capital to keep the economy out of depression.

The result is two forms of input crisis. First (in the words of O'Connor's title) the "fiscal crisis of the state," as the state must run increasingly large deficits, and incur increasingly large debt, in order to meet the constantly increasing demands for subsidized education, transportation infrastructure, and foreign imperial wars. Of course the growing deficits are necessary in their own right, in order to stimulate aggregate demand and counter the chronic crisis of excess capacity. And the growing debt, which is sold to the rentier classes, soaks up trillions in surplus investment capital that would otherwise lack a profitable outlet.

Capitalism — like every other class society in history — has likewise depended since the beginning on artificial scarcities. Such scarcities include all forms of artificial property rights that erect barriers between labor and natural productive opportunities, so that producers can be forced to work harder than necessary in order support privileged classes in addition to themselves. Capital-

from innovation and slows the collective learning of humanity. In an age of grave global challenges, the political economy keeps many practical alternatives sequestered behind private firewalls or unfunded if they cannot generate adequate profits.⁸

These structural contradictions have always made for reduced efficiency and irrationality. But in recent decades they have resulted in increasingly chronic crisis tendencies, which amount to a terminal crisis of capitalism as a system. Both artificial abundance and artificial scarcity have been integral to capitalism since its beginnings five centuries or so ago, and absolutely essential for the extraction of profit. But capitalism is becoming increasingly dependent on both artificial abundance and artificial scarcity for its survival at the very same time that the state's ability to provide them is reaching its limits and going into decline. Hence a crisis of sustainability.

Capitalism has pursued a model of growth based on the extensive addition of artificially cheap inputs. This has been possible either because the colonial conquest of the world outside Europe has given the extractive industries privileged access to mineral deposits, fossil fuels and other natural resources, or because capitalist states have subsidized important material inputs to the corporate economy like transportation infrastructure and the reproduction of trained labor-power, at the expense of the general population.

Western states have engaged in constant wars, not only directly intervening with military force and maintaining military and naval forces all over the world, but backing death squads and terrorist dictators like Suharto, Mobutu and Pinochet, to guarantee continued global corporate control of local land and natural resources. The

⁸ Michel Bauwens and Franco Iacomella, "Peer to Peer Economy and New Civilization Centered Around the Sustenance of the Commons" in David Bollier and Silke Helfrich, eds., *The Wealth of the Commons: A World Beyond Market and State* (Levellers Press, 2013). Online version at <wealthofthecommons.org>.

And the more optimistic post-Fordists share the negative qualities of liberal capitalist "information society" enthusiasts, downplaying the extent to which post-Fordist industrial organization and networked supply and distribution chains have been integrated into a corporate capitalist institutional framework and subjected to the logic of labor exploitation and neoliberal austerity.⁸ Even post-Fordists from a Marxist background tend to downplay the significance of class conflict and the contradictions of late capitalism, instead framing the emergence of a post-capitalist society in largely peaceful and evolutionary terms.⁹

After surveying all these thought systems, Dyer-Witheford goes on to discuss his own preferred model for transition to a high-tech post-capitalist society: autonomist Marxism.

Autonomism stresses the working class's role as creative subject of revolutionary struggle, actively laying the basis for a new society.

Far from being a passive object of capitalist designs, the worker is in fact the active subject of production, the wellspring of the skills, innovation, and cooperation on which capital depends. Capital attempts to incorporate labor as a object, a component in its cycle of value extraction, so much *labor power*. But this inclusion is always partial, never fully achieved. Laboring subjects resist capital's reduction. Labor is for capital always a problematic "other" that must constantly be controlled and subdued, and that, as persistently, circumvents or challenges this command.¹⁰

Workers, autonomists argue, "are not just passive victims of technological change but active agents who persistently contest capital's attempts at control." One of the most important forms this contestation takes is workers use of "their 'invention power'

⁸ Ibid., pp. 57–59.

⁹ Ibid., p. 60.

¹⁰ Ibid., p. 65.

— the creative capacity on which capital depends for its incessant innovation — in order to reappropriate technology.”¹¹

Another theme of autonomism is the way in which workers’ own social relationships have become the main source of productive capital, as physical capital has declined in importance relative to human capital and production has taken on a networked, horizontal character. And at the same time, the boundaries between this increasingly social production process and the rest of life — the spheres of consumption, family life, lifelong learning and the reproduction of labor-power — are becoming more and more blurred.

The activities of people not just as workers but as students, consumers, shoppers and television viewers are now directly integrated into the production process. During the era of the mass worker, the consumption of commodities and the reproduction of labor had been organized as spheres of activity adjunct to, yet distinct from, production. Now these borders fray.... Work, school, and domesticity are re-formed into a single, integrated constellation.¹²

And the growing centrality of network communications and information to all forms of production, and the penetration of this networked culture into the entire cultural sphere, means that it becomes a familiar part of the worker’s life.

The “system of social machines” increasingly constitutes an everyday ambience of potentials to be tapped and explored. The elaboration and alteration of this habitat become so pervasively socialized that they can no longer be exclusively dictated by capital.¹³

¹¹ Ibid., pp. 70–71.

¹² Ibid., pp. 80–81.

¹³ Ibid., p. 84.

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.⁷

All this suggests we need a new model for struggle and for the post-capitalist transition.

Michel Bauwens

Left-wing theories of systemic transition to a high-tech post-capitalist economy are hardly limited to Marxism. One of the most useful non-Marxist schools is the post-capitalist model of commons-based peer production, which includes that of Michel Bauwens of the Foundation for Peer-to-Peer Alternatives.

Late capitalism, Bauwens writes (with Franco Iacomella), is beset by two main structural irrationalities: artificial abundance and artificial scarcity.

1. *The current political economy is based on a false idea of material abundance.* We call it pseudo-abundance. It is based on a commitment to permanent growth, the infinite accumulation of capital and debt-driven dynamics through compound interest. This is unsustainable, of course, because infinite growth is logically and physically impossible in any physically constrained, finite system.
2. *The current political economy is based on a false idea of “immaterial scarcity.”* It believes that an exaggerated set of intellectual property monopolies — for copyrights, trademarks and patents — should restrain the sharing of scientific, social and economic innovations. Hence the system discourages human cooperation, excludes many people from benefiting

⁷ Ibid. pp. 17–18

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 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. Twentieth-century 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

When workers' skills and social relationships become the main form of capital, the converse is that — in contrast to the days when "capital" was expensive, absentee-owned physical capital that workers were paid to come to a physical location and work — workers are in direct possession of a much larger share of the prerequisites of production.

In both these regards, Dyer-Witheford's analysis is rooted in Antonio Negri's *Grundrisse*-based approach to Marx, a treatment of class antagonism framed around the working class as revolutionary subject and constitutive element of communist society, and its historic role of abolishing "work" as a conceptual category as it now exists. The mainstream line of Marxist analysis by the Old Left saw *Capital* as the crowning achievement of Marx's theoretical system, and after the publication of the *Grundrisse* tended to treat the former as having distilled everything of importance in the latter. Negri, on the other hand, sees *Capital* as only a partial completion of the larger project outlined in the *Grundrisse*. The chapter on labor in Volume One of *Capital* did not at all cover the ground envisioned by Marx in the projected book on wage labor; he dealt with it only in part, in "reduced and objective terms" in that chapter, whereas the analysis in the *Grundrisse* that was never incorporated into a separate volume on labor, was intended to link "Marx's critique of the wage and his revolutionary definition of communism and communist subjectivity."¹⁴

The objectivisation of categories in *Capital* blocks the action of revolutionary subjectivity. Is it not possible... that the *Grundrisse*, on the other hand, is a text supportive of revolutionary subjectivity? Is it not the case

¹⁴ Antonio Negri, "Marx Beyond Marx: Working Notes on the *Grundrisse* (1979)," in Antonio Negri, *Revolution Retrieved: Writings on Marx, Keynes, Capitalist Crisis and New Social Subjects*, 1967–1983. Volume 1 of the Red Notes Italian Archive. Introductory Notes by John Merrington (London: Red Notes, 1988), p. 166.

that it succeeds in rebuilding something that the Marxist tradition has all too often broken and split apart — ie the unity between the constitutive process and the strategic project of working-class subjectivity?¹⁵

...In the *Grundrisse*, labour appears as immediately abstract labour. ... Labour becomes abstract inasmuch as it is immediately intelligible only in terms of the social relations of production. Thus labour can only be defined in terms of the relations of exchange and the capitalist structure of production. The only concept of labour that we find in Marx is that of wage labour, of labour that is socially necessary for the reproduction of capital. Work, as Marx describes it, is not something to be reformed, reinstated, liberated, or sublimated; it exists only as a concept and a reality to be abolished.¹⁶

4) The open-ended dynamism of Marx's "system" is directed wholly towards identifying the relationship between crisis and the emergence of revolutionary subjectivity. ... In this regard, the *Grundrisse* is perhaps the most important — maybe the only — Marxian text on the question of *transition*, and it is curious to note that among the thousand and one positions published on the question of transition, this fact goes completely unregarded.

5) Marx's definition of *communism* in the *Grundrisse*... is an extremely radical definition. The fundamental element here is the nexus between communism and class composition. ... The nexus between class composition and power, like that between class composition and transition, is articulated on the real material na-

¹⁵ Ibid., pp. 162–163.

¹⁶ Ibid., p. 165.

Old Left workerism did the reverse, blurring the boundaries between factory and society. Verticalism is characterized by the Old Left's lionization of the industrial proletariat, and a model of society built around the workplace as its central institution. Guy Standing used the term "labourism" to describe this tendency on the Old Left (including Leninist Communism, Social Democracy and CIO-style industrial unionism). 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 full-time employment at wage labor as the norm. They 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.⁶

But since then — especially in the past two decades — the conventional full-time 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, part-time workers, temporary workers, and guest workers) have grown as a share of the economy. For these workers the old model of a

⁶ Guy Standing, *A Precariat Charter: From Denizens to Citizens* (London, New Delhi, New York, Sydney: Bloomsbury, 2014), p. 16.

their political ideology. And regardless of the domestic balance of power between capital and the state, the same analysis applies — as Immanuel Wallerstein has shown — to the relationship between the domestic socialist state and the forces of global capital when a country is part of the larger division of labor in a capitalist world-system.

Compare Holloway's views on state socialism to Negri and Hardt's comment on the Social Democratic agenda as being "to reintegrate the working class within capital."

It would mean, on the one hand, re-creating the mechanisms by which capital can engage, manage, and organize productive forces and, on the other, resurrecting the welfare structures and social mechanisms necessary for capital to guarantee the social reproduction of the working class.⁵

To work, social democracy would have to first use the state to forcibly integrate production under the control of capital even when capital was technically obsolete, either by outlawing competition from more efficient forms of production or giving legacy capitalist interests a "property" right in the ability to put the new forms of production to work. It's an essentially Hamiltonian approach of propping up the worth of large concentrations of capital by artificially maintaining a need for them.

This also entails a Schumpeterian approach (explained in our discussion of Romer above) which views size and capital-intensiveness as inherently "progressive," which adds yet another reason for hostility to new production technology.

The verticalist approach is obsolete in another sense. If the new horizontalist Left depicts the boundaries between production process and society as blurred by the dissolution of the production process into the workers' social relationships in society at large,

⁵ Negri and Hardt, *Commonwealt*, p. 294.

ture of forms of behaviour, of needs, of structure, and of self-valorisation.¹⁷

Translated into plain language, that means analysis of the working class in terms of "revolutionary subjectivity" and its role in the transition means looking at the actual working class as it exists right now, how it exercises agency through its actual practices, forms of organization and activity, and how those practices and organizational forms prefigure (or form the nucleus of) the future communist society it will create.

Getting back to Dyer-Witheford's own analysis of revolutionary subjectivity, it follows from all this that the main form of revolution ceases to be seizing the factories, and instead becomes — to use the term of perhaps the most notable autonomists, Michael Hardt and Antonio Negri — "exodus." It is feasible to undertake an ever larger share of production of life's necessities in the social sphere, in self-provisioning in the informal economy, through commons-based peer production, or through cooperative labor by workers using affordable high-tech tools in their own homes and shops. And the social relationships which capital has enclosed as a source of profit are vulnerable to being repurposed in the form of counter-institutions. Because the "social factory" is immaterial and permeates every aspect of life, there is no need to physically seize it.

Likewise, as Dyer-Witheford paraphrases Negri, "the new communicative capacities and technological competencies manifesting in the contemporary work force..."

exist in "virtual" form among the contingent and unemployed labor force. They are not so much the products of a particular training or specific work environment but rather the premises and prerequisites of ev-

¹⁷ Ibid., p. 166.

everyday life in a highly integrated technoscientific system permeated by machines and media.¹⁸

In Negri's own words, "the raw material on which the very high level of productivity is based — the only raw material... which is suitable for an intellectual and inventive labour force — is *science communication and the communication of knowledge*." To extract profit from the cooperative relationships between workers, capital "must... appropriate communication. It must expropriate the community and superimpose itself on the autonomous capability of manufacturing knowledge..."

The socialized worker's labour is more productive than that of the mass worker. It is endowed with a very high level of productive potential because it is capable of setting in motion the productive potentiality of the whole of society. ... At all levels and in all contexts, community has increasingly become the foundation of the productivity of labour.... Today capitalist expropriation no longer takes place through wages alone. Given the conditions we have described, expropriation no longer simply consists in the expropriation of the producer, but, in the most immediate sense, in the expropriation of the producers' community. ... Advanced capitalism directly expropriates labouring cooperation. Capital has penetrated the entire society by means of technological and political instruments... to anticipate, organize and subsume each of the forms of labouring cooperation which are established in society in order to generate a higher level of productivity. Capital has insinuated itself everywhere, and everywhere attempts to acquire the power to coordinate,

¹⁸ Dyer-Witheford p. 84.

labor movement and that of the left governments that currently exist in Latin America.²

The state option, including the seizure of state power by movements like Syriza and Podemos,

entails channeling aspirations and struggles into institutional conduits that, by necessity, force one to seek a conciliation between the anger that these movements express and the reproduction of capital. Because the existence of any government involves promoting the reproduction of capital (by attracting foreign investment, or through some other means), there is no way around it. This inevitably means taking part in the aggression that is capital. It's what has already happened in Bolivia and Venezuela, and it will also be the problem in Greece or Spain.³

The new networked, horizontalist movements take just the opposite approach:

The rejection of alienated and alienating labor entails, at the same time, a critique of the institutional and organizational structures, and the mindset that springs from it. This is how we can explain the rejection of trade unions, parties, and the state that we observe in so many contemporary movements, from the Zapatistas to the Greek or Spanish *indignados*.⁴

Nicos Poulantzas's structuralism is relevant here. Under capitalism, the state is forced by structural imperatives to serve the needs of capital regardless of the personnel who compose it or

² Ibid.

³ Ibid.

⁴ Ibid.

If we're not going to accept the annihilation of humanity, which, to me, seems to be on capitalism's agenda as a real possibility, then the only alternative is to think that our movements are the birth of another world. We have to keep building cracks and finding ways of recognizing them, strengthening them, expanding them, connecting them; seeking the confluence or, preferably, the commoning of the cracks.

...[L]et's bear in mind that a precondition for the French Revolution was that, at a certain point, the social network of bourgeois relations no longer needed the aristocracy in order to exist. Likewise, we must work to reach a point where we can say "we don't care if global capital isn't investing in Spain, because we've built a mutual support network that's strong enough to enable us to live with dignity."¹

Holloway sees socialist models based on taking state power as reproducing rather than abolishing the capital-labor relationship in many ways. It takes for granted the existence of alienated wage labor under capitalism, set over against institutional structures like corporate management and the state which are separate from and above labor. The traditional Left aims at capturing these structures and using them for the benefit of labor:

...a movement that struggles to improve the living standards of workers (considered as victims and objects) immediately refers to the state. Why? Because the state, due to its very separation from society, is the ideal institution if one seeks to achieve benefits for people. This is the traditional thinking of the

¹ Amador Fernández-Savater, "John Holloway: cracking capitalism vs. the state option," *ROAR Magazine*, September 29, 2015 <roarmag.org>.

commandeer and recuperate value. But the raw material on which the very high level of productivity of the socialized worker is based... is science, communication and the communication of knowledge. Capital must, therefore, appropriate communication.¹⁹

But in doing this, capital must diffuse the informational tools of production into workers' hands. And the skills and social relationships capital profits off of become an inseparable part of the worker's mind and personality. Unlike the case of the physical factory, where management could search workers' lunchboxes for tools and parts on the way out the door, employers cannot force workers to upload their knowledge and skill, or their social relationships, to a company mainframe when they clock out.

By informing production, capital seems to augment its powers of control. But it simultaneously stimulates capacities that threaten to escape its command and overspill into rivulets irrelevant to, or even subversive of, profit.²⁰

In many areas of production, the communication and information processing tools used in the workplace are becoming virtually indistinguishable from those used in the social sphere. Wikis and blogs, and social media like Twitter, developed primarily for use outside the workplace, have been seized on by champions of the "Wikified Firm" or "Enterprise 2.0" as tools for coordinating production within the workplace. At the same time, open-sourced desktop or browser-based utilities are frequently more productive and usable than the proprietary "productivity software" forced on

¹⁹ Antonio Negri, "Expropriation in Mature Capitalism," in *The Politics of Subversion: A Manifesto for the Twenty-First Century*. Translated by James Newell (Cambridge, UK: Polity Press, 1989), pp. 115–116.

²⁰ Dyer-Witheford, p. 85.

workers in the workplace. As Tom Coates put it, “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.”²¹

Since Marx’s day, his simple schema of the circuit of capital (production and circulation) has expanded to encompass virtually all of society, including both the reproduction of nature and the reproduction of labor-power — the “social factory.”²² And, Dyer-Witheford notes, the map of the circuit of capital, in addition to being something capital seeks to control through automation and cybernetics, is also a map of capital’s vulnerabilities.

...[T]he cartography of capital’s circuit maps not just its strength but also its weaknesses. In plotting the nodes and links necessary to capital’s flow, it also charts the points where those continuities can be ruptured. At every moment we will see how people oppose capital’s technological discipline by refusal or reappropriation; how these struggles multiply throughout capital’s orbit; how conflicts at one point precipitate crises in another; and how activists are using the very machines with which capital integrates its operations to connect their diverse rebellions. In particular, ...the development of new means of communication vital for the smooth flow of capital’s circuit — ...especially computer networks — also creates the opportunity for otherwise isolated and dispersed points of insurgency to connect and combine with one another. The circuit of high-technology capi-

²¹ Tom Coates, “(Weblogs and) The Mass Amateurisation of (Nearly) Everything...” Plasticbag.org, September 3, 2003 <www.plasticbag.org>

²² Dyer-Witheford, pp. 91–92.

already built — and that can be done, to a large extent, by circumvention rather than conquest.

John Holloway

A good contemporary specimen of the type is John Holloway’s approach of “changing the world without taking power.” That means

to create, within the very society that is being rejected, spaces, moments, or areas of activity in which a different world is prefigured. Rebellions in motion. From this perspective, the idea of organization is no longer equivalent to that of the party, but rather entails the question of how the different cracks that unravel the fabric of capitalism can recognize each other and connect. ...

...In the last twenty or thirty years we find a great many movements that claim something else: it is possible to emancipate human activity from alienated labor by opening up cracks where one is able to do things differently, to do something that seems useful, necessary, and worthwhile to us; an activity that is not subordinated to the logic of profit.

These cracks can be spatial (places where other social relations are generated), temporal (“Here, in this event, for the time that we are together, we are going to do things differently. We are going to open windows onto another world.”), or related to particular activities or resources (for example, cooperatives or activities that pursue a non-market logic with regard to water, software, education, etc.). The world, and each one of us, is full of these cracks. ...

III. Other Non-Capitalist Techno-Utopianisms

So far I've relied on Dyer-Witheford's schema for classifying liberal capitalist and non- or anti-capitalist versions of techno-utopianism. But his categorization is hardly exhaustive.

Within the Marxist milieu, autonomism is just one in a series of Marxist theories of high-tech, post-scarcity communism going back to Bogdanov, as well as existing within a broader category of post-capitalist models based on mixtures of prefigurative politics and counter-institutions very similar to Negri's and Hardt's *Exodus*.

All these Marxist subcurrents are haunted by the spirit of Gramsci's concept of the "War of Position" — a prolonged process of culture change and institution-building in civil society, aimed at surrounding the state as last bastion of capitalist power, as an alternative to a direct assault ("War of Maneuver") aimed at capturing the state itself. The only difference is that the autonomists and other prefigurative movements no longer see the war of position as a preparatory state for the war of maneuver — a final all-out assault on the state. For Gramsci the War of Maneuver — the conquest of state power — was still the final step; it was just to be postponed until the cultural sappers had finished their preparatory work.

For the autonomists and like-minded thinkers, the goal is *Exodus* rather than taking power. Since the means of production are increasingly coextensive with our relationships in civil society, we no longer need the obsolescent institutions of state and capital. We just need to tear down their enclosures of the social economy we've

tal thus also provides the pathways for the *circulation of struggles*.²³

...In virtual capitalism, the immediate point of production cannot be considered the "privileged" site of struggle. Rather, the whole of society becomes a wired workplace — but also a potential site for the interruption of capital's integrated circuit.²⁴

Dyer-Witheford wrote in the early days of a trend towards networked struggles and comprehensive campaigns (his most notable example was the Justice for Janitors campaign in Silicon Valley), based in the entire social factory rather than in a particular workplace.²⁵

...workers' organizations have entered into experimental coalitions with other social movements also in collision with corporate order, such as welfare, antipoverty, students, consumer, and environmental groups. The result has been new oppositional combinations. Thus striking telephone workers join seniors, minorities, and consumer groups to beat back rate hikes, or unionizing drives in the ghettos of the fast food and clothing industries intertwine with campaigns against racism and the persecution of immigrants. ... [Such alliances] expand the boundaries of official "labor" politics, so that the agency of countermobilization against capital begins to become, not so much the trade union, defined as a purely workplace organization, but rather the "labor/community alliance," with a broader, social sphere of demands and interests.²⁶

²³ Ibid., pp. 97–99.

²⁴ Ibid., p. 129.

²⁵ Ibid., p. 99.

²⁶ Ibid.

Although it was written after the completion of *Cyber Marx*, the *Empire* trilogy, coauthored by Negri and Michael Hardt, was a masterpiece of the autonomist tradition. And in particular the concept of “Exodus,” developed in the last book of the trilogy (*Commonwealth*) was a direct outgrowth of the ideas in Negri’s earlier work as well as Dyer-Witheford’s.

...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. ... What is common to these different forms of labor... is best expressed by their biopolitical character. ... 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.²⁷

²⁷ Antonio Negri and Michael Hardt, *Commonwealth* (Cambridge: Belknap Press, 2009), pp. 132–133.

But second, and at least as important, we have to ask ourselves what kind of “success” is likely to be achieved by leavening predominantly horizontal movements with a bit of verticalism in the form of electoral movements. Admittedly, the idea of supplementing horizontalist movements based on prefigurative politics and counter-institution building, with auxiliary political parties aimed at capturing the state and running political interference for the real effort of building the new society within the shell of the old, or perhaps helping the transition process along, sounds superficially plausible. The problem is that, in practice, such political parties wind up sucking the energy and life out of the counter-institution building effort in civil society, and diverting it instead into parliamentary politics. Or worse yet, when political parties formed out of horizontalist movements actually achieve state power, as with Syriza in Greece, they actually sabotage the efforts of those movements or give away their gains on the ground in order to cut a “realistic” deal with capitalist states.³⁶

³⁶ blog.p2pfoundation.net

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.³⁴

The most important thing to remember, as Graeber points 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 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.³⁵

³⁴ Jerome Roos, "Talking About a Revolution With John Holloway," *John Holloway*, April 13, 2013 <www.johnholloway.com.mx>.

³⁵ Graeber, *The Democracy Project*, xix-xx.

Capitalist accumulation today is increasingly external to the production process, such that exploitation takes the form of expropriation of the common.²⁸

To be sure Negri recently backtracked to some extent on his earlier focus on Exodus, based on what I consider a false lesson taken from the ostensible "failure" of horizontalist movements like M15, Syntagma and Occupy. In a 2015 interview he criticized the "exclusive horizontalism" of the 2011 movements, and suggested based on his assessment of those movements that a partial shift of focus towards seizing power was necessary.

...I must confess that I have developed a problem in recent years. If I am asked to assess the struggles of 2011, I can't help but concentrate my critical remarks on the question of horizontality — or of exclusive horizontality, at least. I have to criticize it because I think that there is no project or political development capable of transforming horizontal spontaneity into an institutional reality. I think, instead, that this passage must be governed in some way or another. Governed from below, of course, on the basis of shared programs, but always bearing in mind the necessity of having, in this passage, an organized political force capable of constituting itself and of managing this transformation.

I think that the present state of the movement forces us to be self-critical about what happened in 2011, and I think this self-criticism must focus on the question of political organization. ...

On this question of struggle at the institutional level and of political organization, I would like to conclude with two more general propositions. The first one is

²⁸ Ibid., p. 137.

that after 2011 horizontality must be criticized and overcome, clearly and unambiguously — and not just in a Hegelian sense. Secondly, the situation is probably ripe enough to attempt once again that most political of passages: the seizure of power. We have understood the question of power for too long in an excessively negative manner. Now we can reinterpret the question of power in terms of multitudes, in terms of absolute democracy — that is to say, in terms of a democracy that goes beyond canonical institutional forms such as monarchy, aristocracy and “democracy.” I believe that today the problem of democracy is best formulated and addressed in terms of the multitude.²⁹

...[C]lass struggle in the biopolitical context 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 produc-

²⁹ “Toni Negri: from the refusal of labor to the seizure of power,” *ROAR Magazine*, January 18, 2015 <roarmag.org>.

ular self-organization bound to be something that flourishes in times of crisis and then secedes back into this kind of Kirchnerismo-style 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. I think that people in Greece look to Argentina and recognize the importance of the experiences of 10 years ago. And I think that people in Argentina — even if things have improved economically for them — look to Greece and see the instability of capitalism. The failure of capitalism is showing up again in another place. I think there is a growing sense throughout the world that capitalism isn’t working. 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

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.

...

What innovation in this area do you think is in store for us in the future? What should we be getting excited about?

...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.³³

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, as Marina Sitrin powerfully portrayed in her book Everyday Revolutions, 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 of autonomous pop-

³³ Joel Dietz, "Occupy Wall Street turned movements into international networks that didn't exist before," *OuiShare*, January 7, 2013 <ouishare.net>.

tive 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 relations of production and mode of social organization under which we live.³⁰

First, I think assessments that the wave of movements that began in 2011 somehow "failed" are fundamentally wrong-headed. The very choice of the word "failure" ignores the fact that networked struggles like Seattle, the Arab Spring and Occupy 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:

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. ...

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... 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,

³⁰ Negri and Hardt, *Commonwealth*, pp. 152–153.

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. Consider, for example, the revolt that broke out in Argentina on the nineteenth and twentieth of December 2001 in the midst of economic crisis and has continued in different forms, with successes and failures, ever since. ...The response of the Argentine population was immediate and creative: industrial workers refused to let their factories close and took over managing the factories themselves, networks of neighborhood and city assemblies were formed to manage political debates and decisions, new forms of money were invented to allow for autonomous exchange, and the piqueteros, the movements of employed..., experimented with new forms of protest in their conflicts with police and other authorities. All of this is clearly specific to the national situation, but it is also... common to all those who suffer and struggle against the exploitation and hierarchy of the global system. The revolt of Argentina was born with the common heritage of the global cycle of struggle at its back. ...

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.³¹

Both David Graeber and Immanuel Wallerstein regard the various networked movements since the EZLN uprising in 1994 as a continuing “revolutionary cycle” or “Fourth World War.” — in Wallerstein’s opinion being “the beginning of the counteroffensive of the world left against the relatively short-lived successes of the world right between the 1970s and 1994...”³²

So rather than asking “What happened to Occupy?” or “What happened to M15?” as though they were discrete entities with a beginning and an end, it makes more sense to think of the whole trajectory of movements including the Arab Spring, M15 and Syntagma, Madison, Occupy, Quebec, the N14 General Strike, and so on, as one loose global network of associated networked movements. This loose, 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, 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. And the process represents a spiral rather than a mere cycle, with each iteration transcending the previous one. Here’s how Nathan Schneider described the phenomenon in an interview:

What did Occupy Wall Street succeed at? What did it fail at?

³¹ Antonio Negri and Michael Hardt, *Multitude: War and Democracy in an Age of Empire* (Penguin, 2004), pp. 213–217.

³² David Graeber, “Situating Occupy Lessons From the Revolutionary Past,” InterActivist Info Exchange, December 4, 2011 <interactivist.autonomedia.org>; Immanuel Wallerstein, “The Neo-Zapatistas: Twenty Years After,” *Immanuel Wallerstein*, May 1, 2014 <www.iwallerstein.com>.

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logic which is destroying our ecosphere. The present system may not like opposition, but even more does it fear indifference, because it can feed on the energy of strife, but starts dying when it is shunted. This is what is being expressed by Toni Negri's concept of Exodus, and what others call 'Desertion'. These commentators note that it was 'the refusal of work' in the seventies, with blue-collar workers showing increasing dissatisfaction with the Taylorist/Fordist system of work, that led to the fundamental re-arrangement of work in the first place. In the past, the labor movement and other social movements mostly shared the same values, and it was mostly about a fairer share of the pie. But the new struggles are mostly about producing a new kind of pie, and producing it in a different way. Or perhaps an even more correct metaphor: it is about the right to produce altogether different kinds of pie.

Today, the new ethic says that 'to resist is in the first place to create'. The world we want is the world we are creating through our cooperative P2P ethos, it is visible in what we do today, not an utopian creation for the future. Building the commons has a crucial ingredient: the building of a dense alternative media network, for permanent and collective self-education in human culture, away from the mass-consumption model promoted by the corporate media.

Thus, if there is an 'offensive' strategy it would look like this: to build the commons, day after day, the process of creating of a society within society. In this context, the emergence of the internet and the web, is a tremendous step forward. ...

Regarding the commons such an approach would entail:

1. a defense of the physical commons and the development of new institutions such as trusts to manage the environment;
2. an end to exaggerated private appropriation of the knowledge commons;
3. a universal basic income to create the conditions for the expansion of peer production;
4. any measure that speeds up the distribution of capital.

In the field of the gift economy: the promotion of reciprocity-based schemes, using alternative currency schemes based on equal time (Time Dollars and the like)

Finally, peer to peer also demands self-transformation. As we said, P2P is predicated on abundance, on transcending the animal impulse based on win-lose games. But abundance is not just objective, i.e. also, and perhaps most importantly, subjective. This is why tribal economies considered themselves to live in abundance, and were egalitarian in nature. This is why happiness researchers show that it is not poverty that makes us unhappy, but inequality. Thus, the P2P ethos demands a conversion, to a point of view, to a set of skills, which allow us to focus ourselves to fulfilling our immaterial and spiritual needs directly, and not through a perverted mechanism of consumption. As we focus on friendships, connections, love, knowledge exchange, the cooperative search for wisdom, the construction of common resources and use value, we direct our attention away from the artificial needs that are currently promoted, and this

time we personally and collectively stop feeding the Beast that we have ourselves created.²⁹

Accelerationism

The Accelerationist movement is roughly divided between right-Accelerationism (closely associated with Nick Land, who went on to be a major figure in the neo-Reactionary movement), which envisions capitalist technological development culminating in a Singularity, and left-Accelerationism. My remarks here refer to the latter exclusively.

Accelerationism, like autonomism and commons-based peer production, aims at unleashing productive forces from their capitalist institutional constraints, and achieving a world without work.

...We need to revive the argument that was traditionally made for post-capitalism: not only is capitalism an unjust and perverted system, but it is also a system that holds back progress. Our technological development is being suppressed by capitalism, as much as it has been unleashed. Accelerationism is the basic belief that these capacities can and should be let loose by moving beyond the limitations imposed by capitalist society.³⁰

7. As Marx was aware, capitalism cannot be identified as the agent of true acceleration. Similarly, the assessment of left politics as antithetical to technosocial acceleration is also, at least in part, a severe misrepresentation. Indeed, if the political left is to have a

²⁹ Section 7.1 Possible political strategies, in Bauwens, *Peer to Peer Manifesto*.

³⁰ Nick Srnicek and Alex Williams, "Manifesto for an Accelerationist Politics," *Critical Legal Thinking*, May 14, 2013 <syntheticedifice.files.wordpress.com>

future it must be one in which it maximally embraces this suppressed accelerationist tendency.³¹

Its main shortcoming is a failure to understand the significance of the technologies it sees as the basis for the post-capitalist system. Although Accelerationism celebrates advances in cybernetic technology and network communications as the building blocks of post-scarcity communism, it is tone deaf when it comes to the specific nature of the promise offered by these technologies, and actually runs directly counter to them. This failure includes a lazy conflation of localism and horizontalism with primitivism and backwardness (to the point of treating “neo-primitivist localism” as a single phrase), and a lionization of verticality, centralism and planning.

5. ... The new social movements which emerged since the end of the Cold War, experiencing a resurgence in the years after 2008, have been similarly unable to devise a new political ideological vision. Instead they expend considerable energy on internal direct-democratic process and affective self-valorisation over strategic efficacy, and frequently propound a variant of neo-primitivist localism, as if to oppose the abstract violence of globalised capital with the flimsy and ephemeral “authenticity” of communal immediacy. ...

6. Indeed, as even Lenin wrote in the 1918 text “Left Wing” Childishness:

“Socialism is inconceivable without large-scale capitalist engineering based on the latest discoveries of modern science. It is inconceivable without planned state organisation which keeps tens of millions of people to

Antonio Negri and Michael Hardt. *Commonwealth* (Cambridge: Belknap Press, 2009).

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the strictest observance of a unified standard in production and distribution. We Marxists have always spoken of this, and it is not worth while wasting two seconds talking to people who do not understand even this (anarchists and a good half of the Left Socialist-Revolutionaries).”

* * *

1. We believe the most important division in today’s left is between those that hold to a folk politics of localism, direct action, and relentless horizontalism, and those that outline what must become called an accelerationist politics at ease with a modernity of abstraction, complexity, globality, and technology. The former remains content with establishing small and temporary spaces of non-capitalist social relations, eschewing the real problems entailed in facing foes which are intrinsically non-local, abstract, and rooted deep in our everyday infrastructure. The failure of such politics has been built-in from the very beginning. By contrast, an accelerationist politics seeks to preserve the gains of late capitalism while going further than its value system, governance structures, and mass pathologies will allow. ...

7. We want to accelerate the process of technological evolution. But what we are arguing for is not technoutopianism. Never believe that technology will be sufficient to save us. Necessary, yes, but never sufficient without socio-political action. Technology and the social are intimately bound up with one another, and changes in either potentiate and reinforce changes in the other. Whereas the techno-utopians argue for acceleration on the basis that it will automatically overcome social conflict, our position is that technology

should be accelerated precisely because it is needed in order to win social conflicts.

8. We believe that any post-capitalism will require post-capitalist planning. The faith placed in the idea that, after a revolution, the people will spontaneously constitute a novel socioeconomic system that isn't simply a return to capitalism is naïve at best, and ignorant at worst. To further this, we must develop both a cognitive map of the existing system and a speculative image of the future economic system.

9. To do so, the left must take advantage of every technological and scientific advance made possible by capitalist society. We declare that quantification is not an evil to be eliminated, but a tool to be used in the most effective manner possible. Economic modelling is — simply put — a necessity for making intelligible a complex world. The 2008 financial crisis reveals the risks of blindly accepting mathematical models on faith, yet this is a problem of illegitimate authority not of mathematics itself. The tools to be found in social network analysis, agent-based modelling, big data analytics, and non-equilibrium economic models, are necessary cognitive mediators for understanding complex systems like the modern economy. The accelerationist left must become literate in these technical fields.

10. Any transformation of society must involve economic and social experimentation. The Chilean Project Cybersyn is emblematic of this experimental attitude — fusing advanced cybernetic technologies, with sophisticated economic modelling, and a democratic platform instantiated in the technological infrastructure itself. Similar experiments were

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Conclusion

As I noted at the outset of this study, there are two broad groups — sometimes using superficially similar rhetoric but in fact fundamentally opposed — that celebrate the emergence of a new kind of society based on current technological trends. One such group, whose material interests center on putting new wine in old bottles, enclosing the new liberatory technologies of abundance within a corporate framework of artificial scarcity for the sake of rent extraction, are trying to pass off a counterfeit of the real thing. Another group is promoting the real thing — among them autonomists like Dyer-Witheford, Hardt and Negri, groups like Oekonux that see peer-production and free and open-source software as kernels of a future communist society, and thinkers like Michel Bauwens of the P2P Foundation who envision a system incorporating non-capitalist markets along with cooperative production based on the natural resource and information commons.

Mason, I think, falls unmistakably in the latter category.

The false prophets of corporate information capitalism do a great deal of harm in passing themselves off as the real thing. But deluded figures on the Left like McMillan, who pretend that the two groups are the same, arguably do even more damage by discrediting our best hope for a post-capitalist society.

conducted in 1950s-1960s Soviet economics as well, employing cybernetics and linear programming in an attempt to overcome the new problems faced by the first communist economy. That both of these were ultimately unsuccessful can be traced to the political and technological constraints these early cyberneticians operated under.

11. The left must develop sociotechnical hegemony: both in the sphere of ideas, and in the sphere of material platforms. Platforms are the infrastructure of global society. They establish the basic parameters of what is possible, both behaviourally and ideologically. In this sense, they embody the material transcendental of society: they are what make possible particular sets of actions, relationships, and powers. While much of the current global platform is biased towards capitalist social relations, this is not an inevitable necessity. These material platforms of production, finance, logistics, and consumption can and will be reprogrammed and reformatted towards post-capitalist ends.

12. We do not believe that direct action is sufficient to achieve any of this. The habitual tactics of marching, holding signs, and establishing temporary autonomous zones risk becoming comforting substitutes for effective success. “At least we have done something” is the rallying cry of those who privilege self-esteem rather than effective action. ...

13. The overwhelming privileging of democracy-as-process needs to be left behind. The fetishisation of openness, horizontality, and inclusion of much of today’s ‘radical’ left set the stage for ineffectiveness. Secrecy, verticality, and exclusion all have their place as

well in effective political action (though not, of course, an exclusive one).

14. ... We need to posit a collectively controlled legitimate vertical authority in addition to distributed horizontal forms of sociality, to avoid becoming the slaves of either a tyrannical totalitarian centralism or a capricious emergent order beyond our control. The command of The Plan must be married to the improvised order of The Network.³²

Given the amount of straw consumed in these passages it's a wonder Nebraska has any left. To begin at the end, equating the stigmergic order of networks to "improvisation" is about as clueless as it's humanly possible to be. And reducing the tactics of the horizontalist movements to "marching, holding signs, and establishing temporary autonomous zones" is an insult to the enormous effort of building counter-institutions by activists in M15, Syntagma, Occupy and all over the world.

That the authors see global financial and logistical platforms as progressive contributions of capitalism to be preserved under post-capitalism also says a great deal. Rather than seeing global supply chains and the present international division of labor as subsidized inefficiencies of transnational capitalism — as business models that are profitable only thanks to the socialization of costs — the Accelerationists see them as inherently efficient.

But the main "efficiency" of global supply and distribution chains is access to cheap labor and friendly authoritarian governments for enforcing work discipline. And far from being a throwback to hippie Luddism, relocalized production is the optimal way to capitalize on the potential of advanced CNC micro-manufacturing technology.

³² Ibid.

has a much more distributed and locally focused character, functioning much more as a facilitating platform for the local counter-institutions themselves — arguably closer to Bauwens's idealized Partner State model than to Syriza.

"Political action" focused mainly on representation in the state, and working through it, on the other hand, is a different matter altogether. And the choice of the Syriza movement as a positive example is particularly unfortunate, for all the reasons we considered earlier.

Political action may be necessary. As Aronoff suggested, it is indeed a mistake to create a false dichotomy with counter-institution building. But framing "political action" as primarily state action, rather than a component of the counter-institution building movements themselves, is precisely the kind of false dichotomy we need to avoid. Political models centered on the conquest of power, and collective action through captured institutional hierarchies, are — to repeat — obsolete.

We don't need the state's policy apparatus to implement the new society, as envisioned by Marxist models of the transitional proletarian dictatorship.

All we need is to block efforts by the state to suppress the emergence of the new society; and for that purpose movements outside the state, engaged in swarming, blocking and sabotage, are what is needed.

Aronoff's revision of Lucy Parson's notwithstanding, we're not talking about the rich *letting* us do anything. The whole point of all the horizontalist analyses we've seen of the internal contradictions of capitalism is that they can't *stop* us. The technological changes that are destroying the capitalist state's enforcement mechanisms are part and parcel of the technologies of the new society itself. The same technologies that serve as building blocks of the new society are rendering the state unable to suppress the new society. In that sense, we can indeed innovate our way out of capitalism.

writing new rules for how popular uprisings work in the 21st century. Podemos, Spain's ascendant populist party, uses a sub-Reddit to make decisions among members at the national level. Thankfully, technology is changing organizing at least as much as it is the economy. Capitalism isn't going anywhere without a fight, no matter how inventive the alternatives.

If the early 20th century labor heroine Lucy Parsons were alive now, she might add an addendum on to the statement she's best remembered by: "Never be deceived that the rich will permit you to innovate away their wealth." Today's movements will need to be at least as creative as the forces they're taking on, and be building solutions that are even more so. Post-capitalism is coming, but a new and even more disruptive tradition of organizing will have to clear the way first.¹³

The problem is that Aronoff conflates "political action" as such with political action aimed at controlling the state. It may well be that networked movements like Occupy Wall Street or Syntagma are useful both in articulating the subjectivity of the classes building the new society, and in running political interference and mobilizing the public in defense of the new counter-institutions where the state actively menaces them. The swarming done by the worldwide support movement for the EZLN, back in the '90s, is a good example of this approach. The direct actions taken by Occupy Wall Street and Occupy Oakland, the Block the Boat campaign on the U.S. west coast, and Black Lives Matter, are also good examples. And such movements can exist as direct outgrowths of the groups engaged in building counter-institutions, if not actually coextensive with them. And Podemos, which Aronoff also mentioned,

¹³ Kate Aronoff, "Have reports of the death of capitalism been greatly exaggerated?" OpenDemocracy.net, July 28, 2015 <www.opendemocracy.net>.

The Accelerationist view is directly analogous to that of the Old Left on the inherent efficiencies of capital-intensive mass-production technology in the early and mid-20th century.

The claim that "techno-utopians" believe technological advances "will automatically overcome social conflict" — as opposed to the Accelerationist view of new technology as a weapon "to win social conflicts" — is particularly disingenuous. It conflates left-wing techno-utopianism with the technocratic managerialism of the Tofflers, Newt Gingrich and Jack Kemp. It also conflates "political action" as such with an insurrectionist or parliamentary politics aimed at seizure of the state. But in fact the autonomist Exodus is very much a class struggle, and also treats technology as a political weapon insofar as it frees self-organized social labor from dependence on the enormous heaps of obsolescent capital controlled by the ruling class.

Michel Bauwens compares the Accelerationist approach to politics to that of the P2P Foundation:

What seems to be in the end, is that the combined demand for full automation and the basic income, functions as an utopia, and while utopias are very useful to free the mind and the desires and show possibilities, they are also dangerous. They appear to be a political program to unite a variety of forces, who win power and then, afterwards, can start changing things. But what if we do not gain power this way?

At the P2P Foundation, we see that a bit differently. The first task is to create prefigurative livelihoods which actually embody different post-capitalist logics, and to build social and political forces around this concrete transformative change. ...

In the end, asking for two utopian demands that are extremely hard to achieve and impose, seems

an expression of the traditional leftist strategy, that we must first win power, and then ‘we will change everything’. The alternative is to build the future right now, to change the mode and relations of production where we can, right now, and to build political power and transition proposals on the basis of a counter-hegemony that has already changed reality through its practice and strength.³³

³³ Michel Bauwens, “Michel Bauwens on P2P and Accelerationism (1),” P2P Foundation Blog, January 14, 2016 <blog.p2pfoundation.net>.

am saying we now have real tactical options beyond confronting them directly until they come to us.

(originally a series of tweets as @zhinxy in July 2012 — paragraph divisions mine.)

Kate Aronoff

Other critics are more thoughtful than McMillan (it would be hard to be less so). Kate Aronoff, for example, recognizes the liberatory potential of the new technologies, despite her fear that they will be successfully hijacked by Silicon Valley capitalism absent political action to divert the currents of change into a more progressive channel. And above all she gets credit for at least describing Mason’s position honestly.

Mason’s call to “direct all actions towards the transition — not the defense of random elements of the old system,” to focus solely on building alternatives, is a false dichotomy. If Syriza’s project in Greece has shown anything, it’s that combining a broad-based solidarity economy with political power is deeply threatening to neo-liberalism, the top brass of which will risk self-implosion to stamp it out. Acting alone, Solidarity for All didn’t provoke a sadistic backlash from Greece’s creditors. Syriza’s victory at the polls, its leadership’s presence at the negotiating table in Brussels, and the egalitarian populist parties grasping at state power across the Mediterranean did — but neither the challenge nor the solution could exist without the other.

Millennial-led movements from Black Lives Matter to Occupy Wall Street have already put the social technologies Mason describes into practice, and are

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 its 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

IV. Analysis: Comparison of the Two Strands of Techno-Utopianism

There's a whole host of left-wing critiques of the capitalist version of techno-utopianism, centered on the Silicon Valley tech industry and corporate-enclosed sharing economy. A good example is Richard Eskow's think piece on the "techno-libertarians."¹ It focuses on the likes of Peter Thiel and Uber; the problem with this culture, he writes, is that their business model treats products primarily as a source of revenue — or more accurately rents — rather than an end in themselves. This primary evil carries with it a number of secondary symptoms, like the pathological culture of motivation-speak and buzzwords and the cult of "Great Men" like Bill Gates, Steve Jobs and Mark Zuckerberg. Monopolies transfer income from workers and consumers to rentiers. And the authoritarian form taken by the technologies, as they are developed under a proprietary information regime, regards users less as the ultimate reason for the technologies than as a revenue stream to be permanently locked in via user agreements and licensing.

So if networked communication and cybernetic technologies are so potentially liberating, why are they so authoritarian in the forms they currently take? The Italian Marxist Antonio Gramsci, who died in Mussolini's prisons in the 1930s, once wrote that "the old world is dying, and the new one struggles to be born; now is the

¹ Richard Eskow, "Rise of the Techno-Libertarians," Salon.com, April 12, 2015 <www.salon.com>.

time of monsters.” In the case of the new world offered by liberatory technologies, most of the birth struggle results from the principles and powers of the old world fighting to imprison the forces of the new world in their old institutional framework.

Lewis Mumford borrowed a term from geology — “cultural pseudo-morph” — to describe the process by which new, potentially liberating technologies were instead incorporated into the institutional forms of the old world, like new mineral deposits that gradually formed a fossil in the shape of buried organic matter. He was referring in particular to the technologies of what he called the neo-technic age, like the electric motor, which by nature were low-overhead and decentralizing. The optimal use of such technologies would have been to replace the paleotechnic order (in which large factories were built to economize on steam power by running as many machines as possible off a prime mover) with a new model of manufacturing where a motor of any size could be built into a machine wherever it was used, the machine could be scaled to production flow, production flow could be scaled to immediate demand, and the site of production could be located close to the point of consumption.

Instead, the forces of the old paleotechnic world were strong enough to put the new wine of electrical power into the old institutional framework of Dark Satanic Mills, in the form of mass production (which threw away all the special advantages of electric power for decentralized, lean production).

Although Mumford didn’t live to see it, the internal crisis tendencies and inefficiencies of mass production eventually led, from the ’70s on, to the outsourcing of actual production to small job-shops owned by independent contractors. The new technological wine still remained in the old corporate bottles, thanks to the use of patents and trademarks to enforce a corporate monopoly on the distribution of a product they didn’t actually make. But the rapid implosion in cost and scale of tabletop CNC machinery, especially open-source versions, are unleashing productive forces that are

and goods.... What is common to these different forms of labor... is best expressed by their biopolitical character.... 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.

Capitalist accumulation today is increasingly external to the production process, such that exploitation takes the form of expropriation of the common.¹²

The Old Left strategy centered on mass, structure and hierarchy at least made some sense in the mid-20th century, when its objective was seizure of a mass-production economy (although mass production itself, contra Galbraith and Chandler, was never inherently very efficient and actually wasted most of the advantages of efficiency and decentralization offered by electrical power, as described in the work of prophets like Kropotkin in *Fields, Factories and Workshops*). When the mass-production economy is itself a decaying dinosaur and it’s within the capability of a growing segment of the working class to produce superior goods in a home workshop, the idea of a frontal assault rather than simply withdrawing our labor into a counter-economy is just plain stupid. To quote a friend of mine, Katherine Gallagher:

¹² Negri and Hardt, *Commonwealth*, p. 137.

combination of a handful of firms, producing a handful of standard proprietary designs for a handful of major retail chains, lowered the transaction costs of enforcement.

And when we figure the combined cost-reductions from 1) stripping the price of manufactured goods of the embedded rents on patents and trademarks, 2) lean production on-demand for local markets with minimal distribution and marketing costs or management overhead, and 3) all the attendant costs of guard labor, bullshit jobs, planned obsolescence and subsidized waste when the inefficiencies of mass production and monopoly control are eliminated, we're probably talking about a necessary work week of ten or fifteen hours — with radically reduced raw material and energy footprint — to produce our existing standard of living.

McMillan's preferred revolutionary agenda of direct, insurrectionary assault, to seize control of the commanding heights of state and corporation, basically throws away the entire advantage that new, liberatory technologies offer to the working class. The fact that material means of production are becoming cheaper, more ephemeral and more affordable, and that material costs of production are declining as a source of value relative to the social capital and social relationships of the working class itself, is the basis of the strategy of Exodus that Toni Negri and Michael Hardt outlined in *Commonwealth*.

...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

making "intellectual property" unenforceable. It's only a matter of time before garage factories using small-scale general-purpose machinery to produce on a craft model are ignoring patents and trademarks and making goods for local neighborhood markets all over the world.

The same is true of network communications and digital culture. The kinds of thinkers on the Left we've been surveying here see commons-based peer production as the kernel of a post-capitalist society that will gradually emerge from within the interstices of the present system, coalesce into a new system, and supplant the old one.

These new technologies of abundance are still held captive within proprietary frameworks like Windows and OSX operating systems, corporate-owned sharing apps like Uber and AirBNB, and the like — enclosed in a neo-feudal "intellectual property" framework to enable the extraction of rents.

But the days of this intermediate stage are numbered. The productive forces unleashed by these new technologies cannot be contained by the old authoritarian class relations, for all the reasons we've examined here. So the right-wing version of techno-libertarianism is a counterfeit of the real thing, a last-ditch effort to capture the technologies of freedom and abundance and harness them to their own greed.

Areas of commonality

My comments on the counterfeit nature of neoliberal techno-utopianism are not meant to suggest that all liberal or free market thought that deals with post-scarcity is a sham. Even the left wing of conventional American-style libertarianism has some areas of commonality with left-wing techno-utopianism, and in some cases overlaps with it.

The classical liberal Frédéric Bastiat, in Chapter 8 (“Private Property and Common Wealth”) of his 1850 book *Economic Harmonies*, described the socialization of wealth (“real wealth constantly passing from the domain of private property into the communal domain”) in language very like Marx’s discussion of “General Intellect” in the “Fragment on Machines”:

And so, as I have already said many times and shall doubtless say many times more (for it is the greatest, the most admirable, and perhaps the most misunderstood of all the social harmonies, since it encompasses all the others), it is characteristic of progress (and, indeed, this is what we mean by progress) to transform onerous utility into gratuitous utility; to decrease value without decreasing utility; and to enable all men, for fewer pains or at smaller cost, to obtain the same satisfactions. Thus, the total number of things owned in *common* is constantly increased; and their enjoyment, distributed more uniformly to all, gradually eliminates inequalities resulting from differences in the amount of property owned. ...

The goal of all men, in all their activities, is to reduce the amount of effort in relation to the end desired and, in order to accomplish this end, to incorporate in their labor a constantly increasing proportion of the forces of Nature. ... They invent tools or machines, they enlist the chemical and mechanical forces of the elements, they divide their labors, and they unite their efforts. How to do more with less, is the eternal question asked in all times, in all places, in all situations, in all things. ...

The gratuitous co-operation of Nature has been progressively added to our own efforts. ...

as the corporate outsourcing of a growing share of production to independent job shops in Shenzhen. It reduced the cost of production machinery by an order of magnitude and made craft production in smaller cooperative shops feasible. The revolution in even smaller tabletop open-source CNC tools in the past decade or so has reduced the cost of machinery necessary by another order of magnitude, and made it possible to carry out, in a garage shop with ten or twenty thousand dollars worth of open-source machinery, the kinds of production that would have required a multi-million dollar factory fifty years ago.

It’s impossible to overstate the practical significance of this, from the standpoint of labor. The original material rationale for the wage and factory systems in industrial Britain and America was a technological transition from general-purpose craft tools affordable to the average artisan, to extremely expensive specialized machinery owned by capitalists who hired laborers to work it. The availability of a garage factory’s worth of open-source high-tech craft machinery at the equivalent of six months union factory wages — and still rapidly falling — is a direct reversal of that transition.

Increasingly the capitalists’ profits do not depend on ownership of the means of production, but control of the right to use them — the ownership of patents rather than machines. This intermediate stage, capitalism’s last desperate attempt to snatch scarcity from the jaws of abundance, is doomed to failure.

Seizing an old-style factory and holding it against the forces of the capitalist state is a lot harder than producing knockoffs in a garage factory serving the members of a neighborhood credit-clearing network, or manufacturing open-source spare parts to keep appliances running. As the scale of production shifts from dozens of giant factories owned by three or four manufacturing firms, to hundreds of thousands of independent neighborhood garage factories, patent law will become unenforceable. In the mass production age patents were enforceable mainly because the

experiment on himself: stay in a room with unlimited information. When he gets hungry, he can eat it.¹¹

Anyone who says the unenforceability of information monopolies has no bearing on the cost of physical commodities doesn't know much about physical production. McMillan should have paid closer attention to this statement of Mason's: "The knowledge content of products is becoming more valuable than the physical things that are used to produce them."

Back in the 1990s, Tom Peters — now there's a genuine apologist for capitalism, wrapped up in New Age salesmanship, if McMillan wants to see what one actually looks like — crowed in ecstasy over the portion of the price of his new Minolta camera that resulted from "intellect"; that is, he was utterly jubilant that all the embedded rents on "intellectual property" were a larger part of its price than the actual materials and labor. Likewise, it's primarily patents and trademarks that enable companies like Nike and Apple to completely outsource actual production to independent contractors, and use a legal monopoly over disposal of the product to enable themselves to mark up the price to a thousand or more percent over the actual cost of production. So it doesn't take a genius to see that abolishing the patents and trademarks — or their growing unenforceability against knockoffs in small job-shops as a result of technological trends — would cause an implosion in the retail price of such goods relative to the income of those who produced them.

But it doesn't stop there. Technological change is not only enabling the unlimited replication of information at zero marginal cost, but it's radically cheapening and ephemeralizing physical production as well. If information — bits — want to be free, then atoms at least want to be a hell of a lot cheaper. The emergence of relatively small-scale CNC machine tools in the '70s enabled the rise of networked cooperative production in Emilia-Romagna, as well

¹¹ Stephanie McMillan, *op cit*.

*A greater amount of gratuitous utility implies a partial realization of common ownership.*²

The reason is that market competition socializes the benefits of technological progress, absent artificial property rights like patents that enable capitalists to enclose them as private rents. So technological progress is radically deflationary, and causes more and more areas of economic life to vanish from the cash nexus into the social or p2p economy.

There's also a great deal of overlap between classical liberal or libertarian treatments of the knowledge problem, and anarchist or libertarian socialist critiques of hierarchy. Friedrich Hayek's criticism of central planning in "The Use of Knowledge in Society," based on distributed knowledge, is also applicable to knowledge problems within corporate managerial hierarchies. And it coincides to a large extent to James Scott's intellectual framework in *Seeing Like a State*, in which he talks about the "legibility" and "opacity" of society to state and capitalist hierarchies and attempts by such hierarchies to render production processes and society itself legible by suppressing metis (roughly equivalent to tacit knowledge).

The Austrian economist David Prychitko, in *Marxism and Self-Management*, uses both Hayek's treatment of the knowledge problem and principal/agent problems to argue for the superior efficiency of self-managed firms in a free market. Meanwhile libertarian Marxist Chris Dillow, at *Stumbling and Mumbling* blog, who focuses on the evils of managerialism and the cognitive problems of hierarchies, argues for a model of socialism based on a combination of free markets, self-management, peer-production networks and non-bureaucratic welfare state measures like a Basic Income.

² Quoted in Sheldon Richman, "Bastiat on the Socialization of Wealth," Center for a Stateless Society, March 23, 2013 <c4ss.org>.

V. Paul Mason

Most recently in this general framework is Paul Mason's book *Postcapitalism*. As we shall see below it's very much in the same tradition of "War of Position" and "Exodus" that we've been examining so far. On the whole it's a very positive development. Having achieved publicity roughly comparable to David Graeber's *Debt* and Thomas Picketty's *Capital in the 21st Century*, it's probably brought more mainstream attention to these currents of left-wing techno-utopianism than they've ever received before.

Perhaps the weakest part of Mason's book (although his political program, which I'll come to later, is also a contender) is his treatment of the crisis tendencies of late capitalism.

In some ways his analysis closely resembles that of Bauwens — most notably, the inability of capitalism to capture the value created by peer-production.¹ In this, he is entirely correct. Still, his analysis comes off as weak, in my opinion, compared to the clarity of Bauwens's framing of the twin structural contradictions of capitalism (its inability to capture the value created by peer production, and the peak resource input crises resulting from the growing socialization of cost). Mason does devote considerable space to the narrower problem of climate change in the latter part of his book, but not to a systematic analysis of resource input shortages as a broader structural problem.

Mason is also correct, as he argues in Chapter Two, that the current crisis is secular and structural rather than cyclical, because capitalism has failed to generate a new Kondratieff wave to renew

namics of this gatekeeper role, but essentially it too is an Immortan Joe, profiting from control over a potentially abundant resource.¹⁰

To repeat yet again, McMillan may believe Mason's scenario isn't going to happen, and that the corporate enclosures will prevail indefinitely. If so — also to repeat yet again — she should make an argument for that belief rather than simply portraying Mason as an apologist for the corporate enclosures. But that would actually require intellectual honesty.

Mason argues, post-modernistically, that because "information wants to be free," the concept of value has become meaningless...

It's obvious to anyone who pays attention that the falling prices of an infinitely-replicable immaterial service does not, by any means, translate to the world of physical commodities. Some things can't be replicated in pixels or even by a 3-D printer. Clothing, food, housing, fuel and computers can only be replicated by employing the labor power of exploited workers. Those things are not losing value.

Exploitation in the process of production is still at the heart of the global economy. And as long as the value produced by workers is being appropriated and accumulated by capitalists, then we are still in capitalism.

Only a self-serving Silicon Valley dreamer or a severely deluded business journalist can argue, with a straight face, that the falling price of ebooks translates into everyone on the planet being able to have plenty of free food. Perhaps Paul Mason ought to do a little

¹ Mason, *Postcapitalism: A Guide to Our Future* (Allan Lane, 2015), pp. 25–26.

¹⁰ Niki Seth-Smith, "Post-Capitalism and the Precariat," *Precarious Europe*, August 24, 2015 <www.precariouseurope.com>.

In his *Telegraph* review, Liam Halligan is spooked by Mason's vision of a world in which "IT means fewer jobs". This is too pessimistic, he writes. In fact, IT is making capitalism "more efficient". This encapsulates the paradoxical logic that defenders of late capitalism are today forced to take. Efficiency is good, yet not the obvious result: a decrease in necessary labour hours needed for production and distribution, prices dropping towards zero. No wonder the proliferation of what David Graeber has called 'bullshit jobs'. No wonder the dropoff in productivity. Technological progress has outpaced capitalism's ability to adapt. Gillian Tett argues in the *Financial Times* that Mason has not accounted for "the fact that technology is currently turning many workers into the equivalent of insecure digital sharecroppers, rather than collaborative creative spirits." She mentions Uber as an example. But Uber, Air B'n'B, or whatever the latest innovation of the commercialized 'sharing economy' happens to be, is beside the point. These represent the 'push back', the attempt to re-monetize the social wealth of the commons, the innumerable networks of cooperation and reciprocity that the digital age allows. Uber is not an example of Postcapitalism in action, it is at the frontier of the fight to re-capture the commons back into the old system of profit...

It's true that the gap between humanity's technological capabilities, and their fruits, is widening. It's becoming ever harder to ignore that the 'success stories' of late capitalism, like Apple and Google, exist predominantly to restrict, not enable, the flow of goods. Google, through its carefully managed relationship to Open Source, is better at understanding the power dy-

itself for another epoch. But his explanation of why this is true is a bit garbled, mainly because he rejects the most useful conceptual basis for explaining why the Kondratieff wave is failing this time around: the over-accumulationist/under-consumptionist model of late capitalist crisis. Mason rejects all economic models based on the idea of a chronic mismatch between levels of investment and levels of consumption.²

Mason's analysis would have benefited greatly from incorporating the over-investment model of the *Monthly Review* group, going back to Baran and Sweezy's *Monopoly Capital*. The reason new Kondratieff waves give capitalism a renewed life is that they periodically generate another large-scale wave of large-scale investment in fundamentally new infrastructures, and provide an outlet to soak up surplus investment capital for another generation and reset the crisis of over-accumulation.

As Mason points out, people like Carlota Perez argue for generating a new Kondratieff wave based on "info-tech, biotech and green energy."³ But the reason such agendas are doomed to failure is that the nature of the new technology itself works directly counter to the need for a new "engine of accumulation" to provide a sink for surplus capital and restore the rate of profit.

For the past generation or so, new production technology has been decreasingly capital-intensive (or increasingly ephemeral), starting in the '70s and '80s with new small-scale CNC machinery suited for the job-shops of Emilia-Romagna and Shenzhen, and running through the current generation of open-source tabletop CNC routers, cutting tables, 3D printers, and forth that can be built for under a thousand dollars. The result is that it takes much, much less capital for production and a great deal more superfluous capital is left sitting around without a profitable outlet for investment than in previous technological revolutions.

² *Ibid.*, pp. 61–62, 69.

³ *Ibid.*, p. 46.

Douglas Rushkoff remarked on the same phenomenon, in the realm of immaterial production:

The fact is, most Internet businesses don't **require** venture capital. The beauty of these technologies is that they decentralize value creation. Anyone with a PC and bandwidth can program the next Twitter or Facebook plug-in, the next iPhone app, or even the next social network. While a few thousand dollars might be nice, the hundreds of millions that venture capitalists want to — need to — invest, simply aren't required. ...

The banking crisis began with the dot.com industry, because here was a business sector that did not require massive investments of capital in order to grow. (I spent an entire night on the phone with one young entrepreneur who secured \$20 million of capital from a venture firm, trying to figure out how to possibly spend it. We could only come up with \$2 million of possible expenditures.) What's a bank to do when its money is no longer needed? ...

[Decentralized value creation] is, quite simply, cheaper to do. There's less money in it. Not necessarily less money for us, the people doing the exchanging, but less money for the institutions that have traditionally extracted value from our activity. If I can create an application or even a Web site like this one without borrowing a ton of cash from the bank, then I am also undermining America's biggest industry — finance.⁴

⁴ Douglas Rushkoff, "How the Tech Boom Terminated California's Economy," *Fast Company*, July 10, 2009
<www.fastcompany.com>.

dal landlords used absentee title to the land the peasants worked, in order to extract rent from them:

You can observe the truth of this in every e-business model ever constructed: monopolise and protect data, capture the free social data generated by user interaction, push commercial forces into areas of data production that were non-commercial before, mine the existing data for predictive value — always and everywhere ensuring nobody but the corporation can utilise the results.

...The business models of all our modern digital giants are designed to prevent the abundance of information...

By creating millions of networked people, financially exploited but with the whole of human intelligence one thumb-swipe away, info-capitalism has created a new agent of change in history: the educated and connected human being.⁹

Obviously Mason's vision of post-capitalism presupposes the failure of these "intellectual property" enclosures, and the emergence of genuinely cooperative, open-source and p2p versions of the present "sharing economy" falsely so-called. He obviously believes that the corporate enclosure of the information and sharing economies is an interim phase, ultimately doomed to destruction by the same uncontrollable free information technologies that are currently destroying the old-line music industry. His "educated and connected human being" is, in Negri's words, a new subject of history, a gravedigger, destined to tear the enclosures down.

As Niki Seth-Smith puts it:

⁹ Mason, "The end of capitalism has begun," *op. cit.*

else. Someone not us. Someone not us who lives in a mansion.⁷

Once again, McMillan conflates Mason with the unspecified “they” of greenwashed New Age capitalism. To repeat, Mason may or may not be wrong that the current “sharing economy,” now still imprisoned to a large extent within proprietary corporate walls, will eventually burst forth from its capitalist integument and become a genuinely cooperative and open-source sharing economy controlled by the users themselves. But if so McMillan should make a case for that rather than passing Mason off as an apologist for Uber and AirBNB.

Let’s see what remedies many of them point to: “collaborative commons,” “workplace democracy,” “workers’ co-ops,” “mutual aid,” the “sharing economy.” These sound good, and indeed some of them may be positive and necessary steps toward a non-capitalist mode of production. But they are just that — steps — and it’s a mistake to confuse them with the path as a whole. Unless the framework of capitalism is broken entirely, they circle back to the beginning every time. Capitalism is not damaged simply because we engage in activity that is cooperative, non-hierarchical, collaborative or “socialistic.” It can and often does assimilate this activity, monetize it to generate new revenue streams. At the same time it helps manage and metabolize our discontent.⁸

This despite Mason’s own explicit statement that capitalism is attempting to coopt the p2p and cooperative revolutions within a corporate framework, using “intellectual property” the same way feu-

⁷ *Ibid.*

⁸ *Ibid.*

For Mason the new Kondratieff wave, rather than generating a new cycle of large-scale infrastructure development based on new technologies, to replace a decaying earlier generation’s infrastructure, results from capital’s technological innovation to the power of labor. And the last Kondratieff wave failed because of the unprecedented defeat of the forces of labor by neoliberalism.⁵

So compared to that of Bauwens and the *Monthly Review* Group, Mason’s analysis of the crisis tendencies of late capitalism falls a bit flat. Nevertheless, his general framing has a familiar Marxian ring to it, in the same general tradition we’ve been considering: the technologies and institutions of post-capitalism are unleashing productive forces that cannot be contained within the productive relations of capitalism, and therefore must eventually “burst out of their capitalist integument” and become the basis for a fundamentally new system.

... [T]he technologies we’ve created are not compatible with capitalism — not in its present form and maybe not in any form. Once capitalism can no longer adapt to technological change, postcapitalism becomes necessary. When behaviours and organizations adapted to exploiting technological change appear spontaneously, postcapitalism becomes possible.⁶

His view of the nature of the technological changes within the capitalist system that doom it to extinction have a lot in common with both the autonomists and Bauwens.

First, information technology has reduced the need for work, blurred the edges between work and free time and loosened the relationship between work and wages.

⁵ Mason, *Postcapitalism*, p. 78.

⁶ *Ibid.*, xiii.

Second, information goods are corroding the market's ability to form prices correctly. That is because markets are based on scarcity while information is abundant. The system's defense mechanism is to form monopolies on a scale not seen in the past 200 years — yet these cannot last.

Third, we're seeing the spontaneous rise of collaborative production: goods, services and organizations that are appearing that no longer respond to the dictates of the market and the managerial hierarchy.⁷

These new social forms amount to a new system arising "within the shell of the old," that will build a new system within the interstices of capitalism, coalesce and finally supplant it.

Almost unnoticed, in the niches and hollows of the market system, whole swathes of economic life are beginning to move to a different rhythm. Parallel currencies, time banks, cooperatives and self-managed spaces have proliferated, and often as a direct result of the shattering of old structures after the 2008 crisis.

New forms of ownership, new forms of lending, new legal contracts: a whole business subculture has emerged over the past ten years, which the media has dubbed the 'sharing economy'. Buzz-terms such as the 'commons' and 'peer-production' are thrown around, but few have bothered to ask what this means for capitalism itself.⁸

And the stigmergic, horizontal forms of organization facilitated by networked communications have drastically reduced the trans-

⁷ *Ibid.*, xv.

⁸ *Ibid.*, xv.

This is just despicable. Mason explicitly states that cooperative, self-managed work is a way out from the neoliberal sweatshop economy of falling wages, and will eventually supplant it in a post-capitalist social economy. McMillan may think he's wrong. She may well believe that new communications and production technology will be coopted into capitalism, and that current trends will result in the increasing dominance of precarious, underpaid employment and sweatshop labor, rather than Mason's vision of an economy of abundance centered on peer-production and self-employment. She may believe that Uber, AirBNB and sweatshops are what will actually result from Mason's good intentions, his predictions to the contrary notwithstanding. If so she should make a case for it.

But I simply cannot convince myself she's stupid enough to actually believe low-wage, precarious employment and sweatshop work is what Mason *himself* defines as the abolition of the wage system. He is obviously not an apologist for sweatshops and precarity or for the capitalist model they're a part of, and portraying him as such is inexcusable.

The "sharing economy" is another huge restructuring of the employer/employee relationship that benefits investors at the expense of the masses. Our workdays are being stretched into a series of endless tasks, cobbled together out of freelancing and side hustles, with barely any compensation to speak of. Yet they tell us this is somehow liberatory, that we're participating in some glorious manifestation of the commons because we have to rent out our bedrooms, drive strangers around in our cars, hawk ourselves with "self-branding," sell our possessions on eBay for a few bucks, and crowdfund our creative work, while millions in fees are collected by ... someone. Someone

Get the picture? We are, without noticing, entering the post-capitalist era in the same sense that people near the height of feudalism would have failed to notice the building blocks of what would one day be a radically different capitalist system. It's hard to see how McMillan could have read the statements quoted above and still misread Mason's "we are entering the post-capitalist era" in such a crude fashion.

She continues:

He offers as evidence the claim that we've "loosened the relationship between work and wages." This is pretty clever. He knows that people who envision a future beyond capitalism — socialists, communists, anarchists — understand that abolishing the wage system is the key to emancipating humanity from capitalism. But only a fool (or a well-paid content provider) could possibly confuse "abolishing the wage system" with "wages dwindling to nothing." All that's happening is that capitalists are taking more and we're getting less. Far from capitalism being no more, capitalism is doing better than ever, at our expense.

Being ultra-underpaid is not a positive step toward a bright new economy -- it sucks! Garment workers in Haiti paid 225 gourdes a day (\$4.01 at the current exchange rate) understand this. Prisoners in Alabama paid 23 cents an hour understand this. It certainly must begin to gnaw on the minds of interns, as well as WWOOFers (working on farms in exchange for room and board, then turned loose to starve during the winters), that unpaid work doesn't lead to "dismantling capitalism" but rather "testing out another form of wage-free capitalist accumulation."⁶

⁶ McMillan, *op. cit.*

action costs of coordinating action outside of traditional institutional hierarchy. They have made the central planning of the large corporation as obsolete as the central planning of Gosplan.

Economists like to demonstrate the archaic nature of command planning with mind-games like 'imagine the Soviet Union tried to create Starbucks'. Now, here's a more intriguing game: imagine if Amazon, Toyota or Boeing tried to create Wikipedia.⁹

But, much as Bauwens has argued, Mason sees capitalism attempting to prolong its own life by incorporating the new technologies and social relationships into a corporate institutional structure, and enclosing them as a source of rents.

Once you can copy/paste a paragraph, you can do it with a music track, a movie, the design of a turbofan engine and the digital mockup of the factory that will make it.

Once you can copy and paste something, it can be reproduced for free. It has, in economics-speak, a 'zero marginal cost'.

Info-capitalists have a solution to this: make it legally impossible to copy certain kinds of information. ...

With info-capitalism, a monopoly is not just some clever tactic to maximize profit. It is the only way an industry can run. ...

... Only intellectual property law and a small piece of code in the iTunes track prevent everybody on earth from owning every piece of music ever made. Apple's mission statement, properly expressed, is to prevent the abundance of music.¹⁰

⁹ *Ibid.*, p. 129.

¹⁰ *Ibid.*, pp. 117, 119.

This applies just as much to control of the physical means of production. When small-scale CNC manufacturing tools fall in price by two orders of magnitude, so that craft production with high-tech, general-purpose tools once again comes within the economic means of individual artisans or small cooperative shops, capitalist ownership of the machinery for profit extraction is replaced by capitalist ownership of the patents.

Mason, in Marxist terms, stresses the contradiction between new productive forces and old social relations of production:

*Today, the main contradiction in modern capitalism is between the possibility of free, abundant socially produced goods, and a system of monopolies, banks and governments struggling to maintain control over power and information. That is, everything is pervaded by a fight between network and hierarchy.*¹¹

Like Dyer-Witheford, Mason also appeals to Marx's "Fragment on Machines" from the *Grundrisse* as anticipating the destruction of capitalism by "General Intellect."

In an economy where machines do most of the work, where human labour is really about supervising, mending and designing the machines, the nature of the knowledge locked inside the machines must, he writes, be 'social'. ...

In the *Fragment on Machines*, these two ideas — that the driving force of production is knowledge, and that knowledge stored in machines is social — led Marx to the following conclusions.

First, in a heavily mechanized capitalism, boosting productivity through better knowledge is a much more

[Capitalism] will be abolished by creating something more dynamic that exists, at first, almost unseen within the old system...

As with the end of feudalism 500 years ago, capitalism's replacement by postcapitalism will be accelerated by external shocks and shaped by the emergence of a new kind of human being. And it has started.

Almost unnoticed, in the niches and hollows of the market system, whole swaths of economic life are beginning to move to a different rhythm.

You only find this new economy if you look hard for it.

It seems a meagre and unofficial and even dangerous thing from which to craft an entire alternative to a global system, but so did money and credit in the age of Edward III.

Present throughout the whole process [of feudalism's evolution into capitalism] was something that looks incidental to the old system — money and credit — but which was actually destined to become the basis of the new system...

A combination of all these factors took a set of people who had been marginalised under feudalism — humanists, scientists, craftsmen, lawyers, radical preachers and bohemian playwrights such as Shakespeare — and put them at the head of a social transformation.⁵

¹¹ *Ibid.*, p. 144.

⁵ Mason, "The end of capitalism has begun," *op. cit.*

McMillan, based on her other writing in *SkewedNews*, favors an insurrectionary approach in which the global working class, organized into a mass movement, seize the means of production. But the problem isn't that she disagrees with Mason's vision of post-capitalism as a future system that will grow out of the present one the way capitalism grew out of feudalism. It's that she doesn't even do him the courtesy of acknowledging that that is, in fact, what he envisions. She suggests, in a disregard of what he actually wrote that not only borders on disingenuousness but spends a bit of time sightseeing there, that he views the existing sharing economy and precaritization of labor as post-capitalism already in being.

In a *Guardian* article anticipating his new book "Post-capitalism," he spreads the good news that we have *already* entered the postcapitalist era, "without us noticing."

But hold off on the victory party, comrades. If we were beyond capitalism, we would have noticed. I don't know about you, but I imagine that a post-capitalist world would feel a little less like the same old frenzied forced march on the treadmill of anxiety, alienation, and failure to make ends meet.⁴

To repeat, it's hard not to suspect this misconstruction of being flat-out disingenuous or wilfully obtuse, considering how many times Mason unambiguously repeats that "[w]ithout us noticing, we are entering the postcapitalist era" only in the sense that the nuclei around which postcapitalism will crystallize, in a prolonged evolutionary process, into a full-blown system already exist within the present system — not that postcapitalism *already exists* as a system. For example:

⁴ *Ibid.*

attractive source of profit than extending the working day, or speeding up labour. ... [A] knowledge solution is cheap and limitless.

Second, Marx argued, knowledge-driven capitalism cannot support a price mechanism whereby the value of something is dictated by the value of the inputs needed to produce it. It is impossible value inputs when they come in the form of social knowledge. Knowledge-driven production tends towards the unlimited creation of wealth, independent of the labour expended. But the normal capitalist system is based on prices determined by input costs, and assumes all inputs come in limited supply.

For Marx, knowledge-based capitalism creates a contradiction — between the 'forces of production' and the 'social relations'. These form 'the material conditions to blow [capitalism's] foundation sky-high'. Furthermore, capitalism of this type is forced to develop the intellectual power of the worker. It will tend to reduce working hours..., leaving time for workers to develop artistic and scientific talents outside work, which become essential to the economic itself. Finally Marx throws in a new concept, which appears nowhere else — before or after — in his entire writings: 'the general intellect'. When we measure the development of technology, he writes, we are measuring the extent to which 'general social knowledge has become a force of production... under the control of the general intellect'.

...

He imagined socially produced information becoming embodied in machines. He imagined this producing a new dynamic, which destroys the old mechanisms for creating prices and profits. He imagined capitalism be-

ing forced to develop the intellectual capacities of the worker. And he imagined information coming to be stored and shared in something called a ‘general intellect’ — which was the mind of everybody on earth connected by social knowledge, in which every upgrade benefits everybody. ...

Furthermore, he had imagined what the main objective of the working class would be if this world ever existed: freedom from work. ... ‘Free time has naturally transformed its possessor into a different subject, and he then enters into the direct production process as this different subject... in whose head exists the accumulated knowledge of society.’

This is possibly the most revolutionary idea Marx ever had: that the reduction of labour to a minimum could produce a kind of human being able to deploy the entire, accumulated knowledge of society; a person transformed by vast quantities of socially produced knowledge and for the first time in history more free time than work time.¹²

And as the autonomists argue, in the contemporary setting this means that the primary form of capital becomes human relationships themselves, coextensive with society at large.

... [T]he knowledge it took to produce the code is still in the programmer’s brain. She can, if market conditions allow, move to a different workplace and execute the same solution, should it be required. With information, part of the product remains with the worker in a way it did not during the industrial era.

¹² *Ibid.*, pp. 134–138.

ism under a general heading of “things I don’t like,” and to unjustifiably dismiss left-wing visions of commons-based peer production and open-source as Trojan horses for Peter Thiel-style capitalism. Thomas Frank is the classic example of this tendency. I’ve also encountered it in personal exchanges with Doug Henwood of the Left Business Observer, a sort of centrist social democrat. Henwood — in a conversation where he defended copyright as a protection for creators against my advocacy of information freedom — told me the model of commons-based peer production and information freedom advocated by Bauwens sounded “like 90s dotcom capitalism.” All I can say is that anyone who seriously compares Richard Stallman to Bill Gates is out of their intellectual depth.

McMillan is obviously doing the same thing herself, based on all the “theys” she cites in this passage and their (to put it kindly) tangential relationship to anything Mason actually says:

First they offer reassuring-sounding it-won’t-be-that-bad schemes like “cradle to cradle,” “conscious capitalism,” “social entrepreneurship,” and “green capitalism.” But these are quickly revealed to be the same old crap in prettier packaging.

Then they decry capitalism’s “excesses” by defining the problem not a capitalism itself, but as errors within an otherwise acceptable economic system. They add qualifiers: crony capitalism, disaster capitalism, corporate capitalism, blah blah blah. They build stellar careers as public intellectuals by offering the comforting thought that if we could simply eliminate its worst elements, the system might yet be saved. But this formula sounds increasingly hollow, as people figure out that the worst aspects of capitalism aren’t a mistake. They’re inherent to it.³

³ McMillan, *op. cit.*

VI. Left-Wing Critiques of Mason

I mentioned above the tendency of the establishment Left and verticalist types, with their fixation on organizational mass and structure and their insurrectionary model of social change based on seizure of the state, to reflexively conflate the liberal capitalist and Leftist versions of techno-utopianism.

Stephanie McMillan

One of the least thoughtful specimens of this genus is Stephanie McMillan,¹ as revealed in her response to Mason's article "The end of capitalism has begun"² (a preview article in *The Guardian* essentially summarizing the arguments of his book).

She dismisses Mason's post-capitalist vision as "just another crappy capitalist snowjob" (the title of her article). The problem is, it's not exactly clear from one paragraph to the next whether her critique is based on a careless reading of Mason's actual article, or she's treating him as a type and telescoping together what he actually says with other stuff said by a lot of "New Economy" and Silicon Valley types she doesn't like.

She wouldn't be the first figure on the Left to lump decentralism, networks and high tech together with Gingrichoid dotcom capital-

¹ Stephanie McMillan, "So-Called 'Post-Capitalism' is Just Another Crappy Capitalist Snowjob," *SkewedNews*, July 22, 2015 <skewednews.net>.

² Paul Mason, "The end of capitalism has begun," *The Guardian*, July 17, 2015 <www.theguardian.com>.

It is the same for the tool she's using: the programming language. It has been developed by tens of thousands of people contributing their knowledge and experience. If she downloads the latest update, it is sure to contain changes based on lessons learned by everyone else using it.¹³

The rapid change in technology is altering the nature of work, blurring the distinction between work and leisure and requiring us to participate in the creation of value across our whole lives, not just in the workplace.¹⁴

This means that work "is losing its centrality both to exploitation and resistance." The "sphere beyond work" has become "the primary battleground," and "[a]ll utopias based on work are finished. ..." ¹⁵ And the autonomist contention that society at large is becoming both the "social factory" and the sphere of struggle has been borne out by the rise of networked social movements like M15, Syntagma and Occupy, and the use of social media as a primary tool of organization by workers in places like China.¹⁶

In the past twenty years, capitalism has mustered a new social force that will be its gravedigger, just as it assembled the factory proletariat in the nineteenth century. It is the networked individuals who have camped in the city squares, blockaded the fracking sites, performed punk rock on the roofs of Russian cathedrals, raised defiant cans of beer in the face of Islamism on the grass of Gezi Park, pulled a million

¹³ *Ibid.*, p. 135.

¹⁴ *Ibid.*, pp. 143–144.

¹⁵ *Ibid.*, p. 179.

¹⁶ *Ibid.*, pp. 211–212.

people on to the streets of Rio and Sao Paolo and now organized mass strikes across northern China.¹⁷

Mason also eloquently describes the nature of the capitalist economy, in language reminiscent of Thomas Hodgskin, as one in which the capitalist interposes herself between producers and collects a toll on their mutual exchange of labor.

But why, if the real weekly value of my labour is thirty hours of other people's work, would I ever work sixty hours? The answer is: the labour market is never free. It was created through coercion and is re-created every day by laws, regulations, prohibitions, fines and the fear of unemployment.¹⁸

Like Bauwens and Holloway, he sees post-capitalism as something emerging primarily through an evolutionary process similar to the emergence of the feudal from the classical political economy and the capitalist from the feudal, rather than the revolutionary models of the twentieth century.

Capitalism... will not be abolished by forced-march techniques. It will be abolished by creating something more dynamic that exists, at first, almost unseen within the old system, but which breaks through, reshaping the economy around new values, behaviours and norms. As with feudalism 500 years ago, capitalism's demise will be accelerated by external shocks and shaped by the emergence of a new kind of human being. And it has started.¹⁹

The socialists of the early twentieth century were absolutely convinced that nothing preliminary was

an instrument for the rule of a privilege minority of rent extractors over a majority of producers. It has never been anything else, whether under the control of priest-kings, the owners of latifundia run on slave labor, feudal landlords, industrial capitalists or — as in the case of the Soviet bloc — the state bureaucracy itself as a ruling class.

Even when the state is theoretically responsible to the producing classes in society at large, and no matter how formally democratic the representative machinery, it will in fact be subject to what Robert Michels, in *Political Parties*, called the Iron Law of Oligarchy. Standing bodies and permanent staffs will always have an advantage, in terms of things like inside information, level of interest, and agenda control, over the larger group to which they are theoretically accountable. So long as the principle of representation exists, power will always flow from principal to agent, from elector to representative, from mandator to mandatee.

The only real solution is to structure social and production processes so that as much as possible can be done either in directly democratic nodes, or through stigmergic networks in which all actions are undertaken by interested parties and all decisions to do anything reflect the unanimous consent of everyone choosing to participate.

¹⁷ *Ibid.*, p. 212.

¹⁸ *Ibid.* 153.

¹⁹ *Ibid.*, xiv.

But far from such “privatization” being some sort of inevitable effect of “the market,” it is in fact a central function of the corporate state. And the solution is for the state to stop doing these things, and for genuinely public (i.e. non-state, commons-based) governance to replace the unholy alliance between business and state. All infrastructures originally created with taxpayer money, or built up with money extracted from ratepayers via monopoly rents, all public hospitals, and all state-owned entities organizing services for the public, need to be mutualized as stakeholder cooperatives controlled by some combination of consumers and service staff. All mineral resources, grazing areas, etc., on government land need to be placed under commons-based management. All land from which peasants have been evicted by neo-feudal landed oligarchs or agribusiness corporations, with the help of the state, needs to be reclaimed by its rightful owners.

These things are not compatible with capitalism or with the cash nexus. But they are fully compatible with markets, broadly understood. In fact the only way they could ever have been replaced by the cash nexus and by corporate rule was by state intervention in the market.

In every case, Mason’s framing is backwards. Instead of intervening to break up monopolies or “forbidding” firms to “set monopoly prices,”³⁶ the state needs to *stop enforcing* the subsidies, restraints on competition and fictitious property rights on which monopoly depends for its existence. Instead of intervening to limit energy consumption, it needs to *stop subsidizing it*. Instead of promoting the building blocks of post-capitalism, it needs to *stop suppressing them on behalf of capital*.

And to return to my earlier critique of the verticalist agendas centering on a “progressive” state, the main problem is that using the state for progressive purposes is just so damned *implausible* given the nature of the state itself. The state is, by its very nature,

³⁶ *Ibid.*, p. 279.

possible within the old system. ‘The socialist system,’ Preobrazhensky once insisted categorically, ‘cannot be built up molecularly within the world of capitalism.’

The most courageous thing an adaptive left could do is to abandon that conviction. It is entirely possible to build the elements of the new system molecularly within the old. In the cooperatives, the credit unions, the peer-networks, the unmanaged enterprises and the parallel, subcultural economies, these elements already exist.²⁰

Nevertheless Mason also sees the state playing a vital role in managing the transition, certainly to a greater degree than Holloway’s model, or Negri and Hardt’s horizontalist vision. All the individual elements — cooperatives, peer-networks, and the like — will only coalesce into post-capitalism if “we... promote them with regulation just as vigorous as that which capitalism used to drive the peasants off the land or destroy handicraft work in the eighteenth century.”²¹ Post-capitalism may offer an “escape route” —

but only if these micro-level projects are nurtured, promoted and protected by a massive change in what governments do.

... Collaborative production, using network technology to produce goods and services that work only when they are free, or shared, defines the route beyond the market system. It will need the state to create the framework. ...²²

Mason at least is closer to the autonomists and to Holloway in putting the primary emphasis on the spontaneous rise of new insti-

²⁰ *Ibid.*, p. 244.

²¹ *Ibid.*

²² *Ibid.*, xv-xvi.

tutional forms like peer networks, and treating state action as simply a way to run interference for or help along these institutional forms, rather than (as with the Old Left) as an instrumentality for actually *creating* the new society.

In fact what Mason calls the “wiki-state”²³ is a lot like the “Partner State” that Bauwens advocates. It’s in keeping with a long line of visions that fall under the general heading of (in Comte’s phrase) “replacing the domination of man over man with the administration of things.” The wiki-state, much like the Partner State, is more a support platform than an issuer of commands.

And to give him credit, he at least leaves some rhetorical wiggle room for cooperation with us anarchist types.

What happens to the state? It probably gets less powerful over time — and in the end its functions are assumed by society. I’ve tried to make this a project usable both by people who see states as useful and those who don’t; you could probably model and anarchist version and a statist version and try them out.²⁴

Nevertheless I think Mason’s idea of the state’s role, at least in his ideal transition model, has all the faults I pointed out earlier with regard to Negri’s recent attempt to incorporate a verticalist element into his thought.

And I think Mason grossly underestimates the extent to which non-state forces (like non-capitalist market competition, natural resource commons, and direct action in resistance to corporate power by networked activist movements, can weaken and defeat the corporate-state nexus.

Let’s look at some of his specifics. He quotes, with approval, the assessment of John Ashton (former British government special representative on climate change) that “The market left to itself

²³ *Ibid.*, p. 273.

²⁴ *Ibid.*, p. 290.

I think the rapid implosion of major portions of monetized production, the growing unenforceability of the artificial property rights by which the prices of naturally free goods are maintained, and the self-organized social economy by which working people themselves respond to the decline in paid employment and the collapse of corporate and state safety nets, will together reduce the role of money and credit in the economy a lot faster than Mason could ever imagine his reformist state doing it.

Likewise, rather than simply ceasing to enforce the “intellectual property” rights that could never exist in the first place without the state, Mason advocates redesigning patents and copyrights to “taper away quickly.”³⁴

Mason is keen on cooperatives, but absent intervention by the state to actively foster them by creating an encouraging environment he sees them as struggling and withering on the vine in a larger capitalist system that’s structurally hostile to them. He fails to follow the logic of structural collapse to its own conclusions. After repeatedly describing crisis tendencies that will bring neoliberal capitalism down, time and time again he returns to talking as though neoliberalism were inevitable absent positive state action to restrain it. But it’s the very building blocks of the future society that is emerging from within the interstices of neoliberalism, that are themselves destroying the power of the old society to suppress change.

I fully agree with Mason’s opposition to neoliberal “privatization” of natural resources, utilities and other infrastructures. And I fully agree that “[i]f true public provision of water, energy, housing, transport, healthcare, telecoms infrastructure and education was introduced into a neoliberal economy, it would feel like a revolution.”³⁵

³⁴ *Ibid.*, p. 279.

³⁵ *Ibid.*, p. 278.

of neoliberal capitalism — in particular capitalist credit — as more natural or necessary than I do. As I see it, the vulnerability of developing countries to retaliation in the form of capital flight is the result in large part of their not going far enough in cutting themselves off from the capitalist credit system and the other structural features of neoliberalism.

While global corporations and investors can pull their fictitious money out of a country, the physical assets can't be moved so easily. All the actual productive assets will remain right where they were before — ideally in the form of worker-occupied and self-managed factories, land reclaimed by peasants, and natural resource commons taken back from extractive industries by local communities. And the function of providing liquidity can be provided by self-organized alternatives without a class of global parasites extracting rent for it. Much or most of the need for capital investment will be overcome simply by abolishing artificial scarcities (i.e. ignoring all copyrights and patents) and encouraging low-cost production technologies.

Rather than a genuinely post-capitalist world with horizontally organized, cooperative or peer-to-peer currency and credit systems, Mason wants to leave all the basic structural features of global capitalist finance and its instruments in place with some nationalization of ownership and Rube Goldberg tinkering with incentive structures.³² He wants a decades-long process of social engineering, at the end of which “money and credit would have a much smaller role in the economy, but the accounting, clearing and resource mobilization functions currently provided by banks and financial markets would have to exist in a different institutional form.” These functions, even after the end of the transition, would include “complex, liquid markets in tradeable instruments....”³³

³² *Ibid.*, p. 281.

³³ *Ibid.*, p. 283.

will not reconfigure the energy system and transform the economy within a generation.”²⁵ Now if by “the market” Ashton and Mason mean, as is usual in mainstream political rhetoric, the “Washington Consensus” or neoliberal capitalist model centered on the cash nexus, they may be right. At least the necessary incentives for reining in carbon emissions will work counter to the structural incentives of neoliberal capitalism.

If, on the other hand, “free market” is used in the libertarian sense of the sum total of voluntary interactions rather than the cash nexus as such, and of a system in which the state does not interfere with voluntary interactions, such a market would entail a vast reduction in the subsidies (both direct and indirect) for energy consumption.

Such a free market would mean the total elimination of all subsidies to long-distance shipping and transportation, the funding of all transportation infrastructure by fees on those who imposed the costs on the system, and an end to eminent domain for the construction or expansion of highways and airports. It would mean an end to neocolonial policies abroad and domestic land use policies aimed at guaranteeing privileged access to natural resources (including fossil fuels) by extractive industries, and replacing such regimes with commons-based resource management on Elinor Ostrom's model. It would mean an end to all enclosure of vacant and unimproved land and to all absentee landlord rights over arable land traceable to such enclosures, and the restoration of customary peasant and/or indigenous land titles previously taken over for less energy-efficient industrialized cash crop production. It would mean an end to the trillions spent on the imperialist countries' military and naval forces for keeping shipping choke-points open for container ships and oil tankers, and guaranteeing access to the Persian Gulf and Caspian oil basins.

²⁵ *Ibid.*, p. 247.

It would mean an end to the subsidized car culture, subsidized urban freeway systems, cheap fuel from fracking and pipelines on stolen land, and to zoning and regulatory codes that enforce sprawl and monoculture.

It would also mean an end to the role of patents and trademarks in facilitating the outsourcing and offshoring of production to overseas factories, through the enforcement of corporate monopolies on the disposal of products actually manufactured by someone else. And it would mean an end to the role of patents in enforcing planned obsolescence by preventing modular design ecologies with generic, inter-operable spare parts and accessories for entire industries.

In short, a genuine free market would mean the near-total elimination of subsidized waste, a drastic shortening of industrial supply and distribution chains, a relocalization of industry, and a return to mixed-use communities built around walking, bicycling and public transit. In practical terms, that could well mean the reduction of energy use to a fraction of present levels.

Mason also ignores the fundamental facts of Peak Oil, arguing that high energy prices simply create incentives for more production, and that the high valuation of fossil fuel companies means “the market” believes high carbon emissions will continue indefinitely.

Clearly, somewhere, the market as a signalling mechanism has gone wrong.

... [E]ither the global oil and gas companies are really worth much less than their share prices indicate, or nobody believes we’re going to cut our carbon use. ...

The lesson is: a market-led strategy on climate change is utopian thinking.²⁶

²⁶ *Ibid.*, pp. 248–249.

thinking and networks.”²⁹ I just think a lot more of this process will be taking place at the level of households and neighborhood cooperative shops than in mass production factories.

A great deal of Mason’s vision of the kind of salutary market incentives that would be created by a wiki-state amount to what would actually be accomplished by a non-capitalist market in which the state simply *stopped doing* the bad stuff it’s doing right now. The wiki-state, he writes,

could... reshape markets to favour sustainable, collaborative and socially conscious outcomes. If you set the feed-in tariff on solar panels high, people will install them on their roofs. But if you don’t specify they have to come from a factory with high social standards, the panels will get made in China, generating fewer wider social benefits beyond the energy switch.³⁰

Mason neglects the extent to which the extent to which actively promoting the exact opposite of his post-capitalist vision is the main thing the state does right now. Simply ceasing to promote energy consumption, waste, and exploitation — or better yet, ceasing to be *able* to do them — would have far more of an effect than he imagines.

If anything Mason goes too far at times in the direction of continuing neoliberal capitalism, as when his advocacy for “clear and progressive” government action on the debts of developing or peripheral countries stops short of simply writing them off. He sees this as untenable because of the likelihood of “deglobalization” when the countries and investors that owned the written-off debt cut off defaulting countries from new investment or locked them out of trading zones.³¹ In this regard he sees some structural features

²⁹ *Ibid.*, pp. 287–288.

³⁰ *Ibid.*, pp. 273–274.

³¹ *Ibid.*, p. 275.

better to pursue a model of relocalized artisan production using high-tech, general-purpose craft machinery. The total reduction in necessary labor achieved by decentralizing production to the point of consumption, adopting a lean, demand-pull distribution model and eliminating subsidized waste and planned obsolescence will far outweigh any that could be achieved by capital-intensive automation.

Rather than an automated assembly line, the most efficient model of production in most cases will be highly sophisticated CNC machine tools in a small, self-managed and worker-owned neighborhood shops, with a human being running the CAD/CAM files and putting in the feed stock. And most likely with the human beings in question working a few hours a day and a few days a week, taking frequent breaks or knocking off at a time of their own choosing, in order to putter around the garden or play with their kids, or go off fishing for a few days. In other words, a high-tech version of the life of pre-Enclosure cottagers.

And such a society, in which production was dissolved into the household and social economy, would be a lot closer to Kropotkin's model of villages in which high-tech manufacturing shops coexisted with intensive horticulture, and the distinctions between town and country and between head and hand work disappeared. Or — if I may — a society in which it would be possible for me “to hunt in the morning, to fish in the afternoon, rear cattle in the evening, criticize after dinner, just as I have in mind, without ever becoming hunter, fisherman, shepherd or critic.”

Even so, I credit Mason for at least seeing that a post-capitalist society would dissolve many of the distinctions between work and play, and that “the transition to postcapitalism is likely to be driven by surprise discoveries made by groups of people working in teams, about what they can do to old processes by applying collaborative

Well, no. First of all, the value of global oil and gas companies reflects massive up-front subsidies to unsustainable levels of extraction. The unsustainability of the current energy output bubble is suggested by the rapid dropoff in output from fracking wells after the first year, and the drastic downgrading of previous wild overestimates of energy reserves in places like the Bakken shale formation. It's also suggested by the fact that low petroleum prices are the result of unsustainable, politically driven increases in short-term output from the dwindling oil reserves in Saudi Arabia, intended to reduce the revenue-producing capabilities of oil reserves held by Venezuela, Russia and ISIS forces in Iraq. EROEI (Energy Return on Energy Investment), the key concept behind Peak Oil, is one of those “gods of the copybook headings” that can't be overridden by oil company bluster.

Mason actually points to the drastic expansion in fracking and Saudi oil production,²⁷ without noting the basic geological constraints (the rapid drop-off in fracking output, and the fact that aging Saudi reserves are going offline far faster than new reserves are being found) will only make the energy supply crash that much harder when the short-term rush evaporates.

And second, my long list above of the ways that the state currently intervenes to make consumption of energy either artificially cheap or artificially necessary suggests that existing state intervention in the market is central to carbon emissions and climate change. If anything it's framing the issue as the existing “market” versus hypothetical state policies to disincentivize energy usage, rather than the real choice between continuing and stopping existing state interventions to encourage energy extraction and use, that really reflects a lack of contact with reality.

Mason proposes a state-guided “Project Zero” for coordinating the post-capitalist transition, with top level aims that include re-

²⁷ *Ibid.*, p. 251.

ducing carbon emissions, stabilizing and socializing the finance system, and

Gear technology towards the reduction of necessary work to promote the rapid transition towards an automated economy. Eventually, work becomes voluntarily, basic commodities and public services are free, and economic management becomes primarily an issue of energy and resources, not capital and labour.²⁸

There's no need to repeat my earlier discussion of carbon emissions.

A genuine free market financial system (with the measure of genuineness of the free market being the extent to which it ceases to be capitalist) would mean an end to the role of capitalist banks in lending the circulating medium into existence at interest, and the creation of an abundance-based libertarian currency something like Thomas Greco's local mutual credit-clearing networks. This is, incidentally, very close to the sort of village mutual credit systems described by David Graeber in *Debt*, that existed in pre-capitalist Europe.

As for the reduction of necessary work, the crisis of capitalism, combined with new technologies of small-scale local production, is already pointing in that direction. We reached Peak Employment, in terms of work hours per capita, around 2000. Since then the amount of labor necessary to produce a given standard of living has steadily declined, and an ever-growing share of the population is either not employed or works less than forty hours a week.

At the same time, as James O'Connor noted in *Accumulation Crisis*, the working class responds to cyclical crisis by meeting as many needs through direct production for use in the informal and household economies. And given that we've entered a stage of structural rather than cyclical crisis, this tendency is becoming permanent.

²⁸ *Ibid.*, pp. 269–270.

Charles Sabel and Michel Piore also argued, in *The Second Industrial Divide*, that capitalist industry emerging from recessions will expand production by shifting as much output as possible from the mass-production center to the craft production periphery, rather than investing in new mass-production capacity. And again, we're entering a period of systemic crisis in which these shifts become permanent.

The permanent crisis of under-consumption, taken together with permanent unemployment and under-employment and the new affordable technologies for micro-manufacturing in home workshops and garage factories, mean that the working class will increasingly shift to meeting its own needs through production for local use in the social economy. And the fiscal exhaustion, retreat and collapse of the old state- and employer-based safety nets will create a necessity for self-organized mechanisms (like micro-villages, multi-family co-housing units, extended family compounds, large-scale squats, etc.) for pooling costs, risks and income. The process of Exodus and counter-institution building is apt to be reminiscent of the rise of the free towns and their horizontal institutions for self-governance in the High Middle Ages, as recounted by Kropotkin.

The reference to automation, by the way, is disturbingly reminiscent of the emphasis on automated factory production, smart infrastructures and the "Internet of Things" shared by the Accelerationists and Jeremy Rifkin's *The Zero Marginal Cost Society*. That vision is functionally pretty close to cognitive capitalism even if the goals and ownership forms are different. Like Rifkin and the Accelerationists, Mason places a great deal of emphasis on the continued existence of large-scale production in assembly lines, but completely automated.

And in my opinion this is a sub-optimal approach to achieving a low-work, post-scarcity society. Rather than automating production through capital substitution and centrally coordinating distributed production through smart infrastructure, it would be far