Anarchist Cybernetics

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Anarchy, freedom, and self-organization

In comparison to how overused it is, 'cybernetics' might be one of the least understood words in the English language. We're all familiar with it, or at least with the prefix 'cyber' that is drawn from it. Cyborgs are now ubiquitous in pop culture. We used to talk about cyberspace and cyberpunk, and these held some kind of radical connotation, albeit a fairly vague one.

Now we get patronizing campaigns from governments urging us to give up artistic pursuits for careers in 'cyber.' In our places of work, cybersecurity is the subject of one of the many mandatory trainings. Cyberpunk 2077 was one of the most hotly anticipated games of the last few years, and was widely criticized for its simplistic gender normativity, its fetishizing of trans people and its superficial appropriation of anti-capitalist and anarchist aesthetics. None of this really tells us anything about what cybernetics might mean, other than a general association with technology. The scientific discipline of cybernetics, which emerged after the Second World War, was deeply concerned with mechanical and electrical engineering, and later with information technology and computers. But the word itself has a much longer history.

The philosopher Plato, writing in Athens in the Fourth Century BCE, uses the word 'kybernetes,' which refers to the act of steering a ship. Plato compares steering a ship to governing a city (in Ancient Greece there weren't really nations or states as we understand them, and people lived in city-states, such as Athens). Our word 'govern' comes from this Ancient Greek word 'kybernetes.' In Latin the *k* becomes *g*, the *y* becomes *u*, to give us 'gubernare.' This is still used in speaking about matters related to the state Governors, in 'gubernatorial elections,' for instance.

If cybernetics has its lineage in ideas about governing a community – constituted most commonly as hierarchical systems of government – why is any of this interesting for anarchism? Why am I writing about cybernetics in an anarchist publication if, at its core, it deals with the kind of centralized, top-down organization associated with positions like governor? Is 'governor' not also the name given to the people who run prisons? In an excellent recent book on mutual aid and Covid-19, John Preston and Rhiannon Firth link cybernetics to "authoritarianism and top-down control"[1] and to the kind of disaster capitalism that treats people as easily-manipulable and ultimately disposable.

The notion of steering found in Plato and from which cybernetics gets its name is of course an act of steering by one or a few in control of others. For Plato, the steering of a ship was a metaphor for how the city-state should be governed. Not through democracy but by an enlightened pilot, a philosopher king. This is the origin of the term 'cybernetics.'

You might be surprised then to learn that in a 1966 essay called 'Anarchism as a Theory of Organization' British anarchist Colin Ward wrote that "Cybernetic theory with its emphasis on self-organising systems, and speculation about the ultimate social effects of automation, leads in a similar revolutionary direction" as anarchism.[2] Why did Ward see cybernetics as comparable to anarchism, to a philosophy based on "autonomous groups, spontaneous order, workers' control, the federative principle"?[3]

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[1] John Preston and Rhiannon Firth, Coronavirus, Class, and Mutual Aid in the United Kingdom (Cham: Palgrave Macmillan, 2020), 61.

[2] Colin Ward, "Anarchism as a Theory of Organisation," The Anarchist Library, accessed May 9, 2021, `https://theanarchistlibrary.org/library/colin-ward-anarchism-as-a-theory-of-organization`.

[3] Ward, "Anarchism as a Theory of Organization."

At the center of this connection between anarchism and cybernetics is the idea of self-organization, and while this was initially developed in the context of technical systems, it was applied to social systems as well. Through this, cybernetics gives us a framework for understanding how people can organize their lives collectively and without structural hierarchies of command.

The science of self-organization

I'm sure I'm not the only person who has read that comment in Ward's 1966 essay, which is included without much explanation, only to find themselves down the rabbit hole of anarchism and cybernetics. There are a few other scattered references to cybernetics in anarchist literature over the years. Murray Bookchin used the term in several places but mainly in reference to high technology. Ruth Kinna discussed it briefly in her 2005 book *Anarchism. A Beginner's Guide*, as did Paul Goodman and Sam Dolgoff decades earlier. In the Netherlands, philosopher Marius de Geus delves into it at length in a book published in 1989 (the relevant chapter was translated and published in English), as did Provo activist Roel van Duijn in his book *Message of a Wise Kabouter*. It is through Ward, however, that the real relevance of cybernetics to anarchism can be grasped.

As well as being an editor of *Freedom* newspaper from 1947 to 1960, Ward edited the journal *Anarchy*, published by Freedom Press between 1961 and 1970. It is in the pages of *Anarchy*, in 1963, that the connections between anarchism and cybernetics are first made. One of Ward's close associates at the time was Nicholas Walter, a frequent contributor to the *Freedom* newspaper. Walter's grandfather, Karl Walter, attended the 1907 International Anarchist Congress in Amsterdam and had some involvement in the Freedom group around that time.

The son of Karl Walter, and Nicholas Walter's father, was William Grey Walter. This member of the Walter family was a neurophysiologist and one of the people working at the cutting edge of cybernetics and related fields from the 1930s to the 1960s. Part of his work was on robotics and he developed some early robots he called 'tortoises', which were able to steer themselves using light and contact sensors.

Nicholas Walter said of his father that "he was politically on the left, a communist fellow-traveler before the Second World War and an anarchist sympathizer after it."[4] In 1963, Grey Walter wrote an article for *Anarchy* titled 'The Development and Significance of Cybernetics' (also available at Libcom). Walter gave an overview of the science of cybernetics, characterizing it as a holistic umbrella that can bring together disparate fields such as biology, electrical engineering, psychology and mathematics.

Walter concluded his *Anarchy* article by noting the similarities between how the brain is organized and anarchist approaches to organization. He wrote that "we find no boss in the brain, no oligarchic ganglion or glandular Big Brother."[5] He went on to describe how different parts of the brain relate to one another: "local minorities can and do control their own means of production and expression in free and equal intercourse with their neighbors. If we must identify biological

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[4] "W. Grey Walter. A Short Biography," Brain & Mind, accessed May 9, 2021, cerebromente.org.br/n09/historia/greywalter_i.htm.

[5] William Grey Walter, "The Development and Significance of Cybernetics," Anarchy 25 (March 1963), 89.

and political systems our own brains would seem to illustrate the capacity and limitations of an anarcho-syndicalist community."[6]

By stressing the importance of local autonomy, cybernetics shows how systems can be effective and endure from one moment to the next. In social and political systems, it is not through dictatorial command and authoritarian constraint but through freedom and democracy that forms of organization can best meet their goals and remain stable. While self-organization in mechanical or electrical systems looks quite different from self-organization in anarchist groups and communities, Walter suggested that there is a crucial parallel between them: decision-making must happen at the most local level possible, and cohesion comes through the interplay between the parts of the system, which are themselves fundamentally autonomous.

The cybernetics of self-organizing systems

To see precisely why this is the case, we need to turn to another key moment in this obscure history of anarchism and cybernetics.

In the issue immediately following the one that contained Walter's article, *Anarchy* published a letter in response. In the letter, John D. McEwan wrote: "I'm interested in this question of the cybernetic approach to social organization, and have for some time considered that it's particularly significant for anarchists. Especially some concerning self-organising systems, and criticisms of rigid hierarchic decision mechanisms."[7] Walter responded to say that "I wish I had had time to bring out the antipolitical overtones rather more,"[8] but it was McEwan himself who developed this theme more fully.

McEwan is a bit of an elusive figure in this story. He sent his letter to *Anarchy* following the publication of Walter's article, and then a few months later his own piece was published. We know from the short biography published alongside his article that he was born in 1938, graduated with a degree in mathematics from the University of St. Andrews in Scotland, and worked on diagnostic programming for an electronic computer. The letter he sent to the journal was addressed from Manchester, in the North of England, so presumably he lived and worked in that city, perhaps connected to the Department of Electrical Engineering at the University of Manchester, which pioneered some key advances in computing.

Beyond this, nothing is known of McEwan, or at least nothing I have been able to uncover, but the minimal volume of his contribution to anarchism – one letter and one longer essay later in 1963 – is more than made up for by its importance for understanding the connections between anarchism and cybernetics.

McEwan's article was titled 'Anarchism and the Cybernetics of Self-Organising Systems.' In the years that followed, it was republished in two collections and has happily been made available online at Libcom. The article went into some depth on the connections between anarchism and cybernetics, focusing in particular on Kropotkin's understanding of harmony in nature and how the autonomy of the parts of a system affords it the ability to maintain an equilibrium as its environment changes.

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[6] Walter, "The Development and Significance of Cybernetics," 89.

[7] John D. McEwan and Willian Grey Walter, "Cybernetics, Errors and Anarchism," Anarchy 26 (April 1963), 111.

[8] McEwan and Walter, "Cybernetics, Errors and Anarchism," 111.

Social systems, like all systems, exist in a particular environment (everything that surrounds them, that has an impact on them, and that they in turn have an impact on). This environment changes over time, and to remain stable the system has to be able to continually adapt and modify itself in line with this change. The change in the environment is described as variety: the environment has a variety of possible states and it is the change from one state to another that any system existing within that environment must contend with.

One of the central tenets of cybernetics, known as Ashby's Law after Ross Ashby, is that a system must be able to have the same level of variety as its environment in order to survive. When the environment changes from one state to another, the system must be able to change in turn; the system must be able to match the variety in the environment. The way systems achieve this variety and adaptability is through their parts having a high level of autonomy to act as they see fit in their own particular part or niche of the environment. This is the core characteristic that Walter had identified as being common to both cybernetics and anarchism. If systems are too rigid and don't have this capacity for change and variety, they become overwhelmed and break down.

For anarchists, this kind of systemic rigidity and lack of variety has another implication: domination. The political and social systems anarchists try to resist, and ultimately destroy, display their lack of variety through authoritarian coercion. More or less explicit mechanisms of domination – from the overt brutality of the police and military to more subtle cultures of subservience and conformity – act to restrain the variety of the system. Everyone is forced to fit into a limited number of possible roles and behaviors. Freedom and autonomy to act and think differently are curtailed.

In his article in *Anarchy*, McEwan noted that Kropotkin had an understanding of nature and harmony that aligns strikingly with cybernetics. He described anarchist society, for example, as one that "looks for harmony in an ever-changing and fugitive equilibrium between a multitude of varied forces and influences of every kind, following their own course."[9]

McEwan challenged the dominant view of political and social organization, contrasting it with anarchist organization rooted in autonomy and complexity:

> "The basic premise of the governmentalist – namely, that any society must incorporate some mechanisms for overall control – is certainly true, if we use 'control' in the sense of 'maintain a large number of critical variables within limits of toleration.' […] The error of the governmentalist is to think that 'incorporate some mechanism for control' is always equivalent to 'include a fixed isolatable control unit to which the rest, i.e. the majority, of the system is subservient.' This may be an adequate interpretation in the case of a model railway system, but not for a human society. The alternative model is complex, and changing in its search for stability in the face of unpredictable disturbances."[10]

McEwan's discussion is particularly insightful, and it is one of the few places where cybernetic ideas of self-organization, variety, and autonomy are discussed in detail in relation to anarchism.

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[9] Pëtr Kropotkin, "Anarchism: Its Philosophy and Ideal," The Anarchist Library, accessed May 9 2021, https://theanarchistlibrary.org/library/petr-kropotkin-anarchism-its-philosophy-and-ideal.

[10] John D. McEwan, "Anarchism and the Cybernetics of Self-organising Systems," Anarchy 31 (September 1963), 282.

Central to this is how the concept of control is understood. While cybernetics is focused on control – the subtitle of the very first book on cybernetics, by US cybernetician Norbert Weiner, was 'Control and Communication in the Animal and the Machine' – it defines control not as something that is done to a system or a group of people but as something a system or group itself does. For anarchism, this means people self-organizing to govern themselves.

McEwan described the kind of high-variety system that cybernetics says is required for coping with a complex world, and it is something many anarchists would recognize: "Its characteristics are changing structure, modifying itself under continual feedback from the environment [...]. Learning and decision-making are distributed throughout the system."[11] He quoted Kropotkin on anarchist organization, highlighting the startling similarity: "an ever-changing association bearing in itself the elements of its own duration, and taking on the forms which at any moment best correspond to the manifold endeavours of all."[12]

Anarchist organization is still about control, but this control is enacted through the kind of democratic and participatory decision-making that has characterized anarchism since its inception and that is found in many non-state communities throughout history. Cybernetics reveals self-organization as an effective form of control for adaptive systems, but a form of control that, in social organization, involves us working collectively in agreement with those around us about how we can best run our lives, how we can be free and thrive in a complex and changing world.

Advancing anarchist cybernetics

McEwan's article in *Anarchy* clearly made an impact, as cybernetics crops up again and again in the history of anarchism from the 1960s onwards, but the ideas contained within it were never taken forward and developed into a more comprehensive theory of anarchist organization. McEwan showed us some of the foundational principles behind cybernetics that can be applied just as fruitfully in anarchism, but what this means in practice for anarchist organizing was left unexplored.

But what if the story doesn't have to stop here? In his essay, McEwan drew inspiration from one of the most influential figures in cybernetics. That figure was Stafford Beer. By taking a closer look at Beer's life and work, and particularly through exploring his ideas about viable systems, we can inquire further into the connections between anarchism and cybernetics.

In doing so, we're going to visit the turbulent days of the early 1970s, where the radical potential of cybernetics was first manifested in practice. We'll also revisit Occupy Wall Street, to see how one of the largest experiments in anarchistic organization functioned, before returning home to the present and viewing grassroots mutual aid in the Covid-19 crisis through a cybernetic lens. By the end of this journey, it will become clear how an almost forgotten idea from the pages of a relatively unknown anarchist journal in 1963 may help us reshape how we think about anarchist organization.

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[11] McEwan, "Anarchism and the Cybernetics of Self-organising Systems," 278.

[12] Kropotkin, "Anarchism: Its Philosophy and Ideal."

Interlude: Chile, 1973

Salvador Allende was narrowly elected as President of Chile in 1970 on a platform to implement what he called "the Chilean Path to Socialism." In contrast to the authoritarian socialism of the Soviet Union, Allende attempted to bring about advances in welfare and nationalization of industry through representative democratic governance. He rejected the centralized, vanguard revolutionary strategy of other supposedly socialist countries, but nonetheless his government came under almost immediate attack by powerful financial interests, both inside Chile and abroad.

After a number of failed attempts and prolonged economic warfare by the US, a coup in 1973 finally succeeded in toppling Allende. His death on September 11th of that year marked the end not only of the Chilean Path to Socialism but of even the most basic liberal representative democracy in Chile until 1990, when the Pinochet dictatorship relinquished power. The CIA-backed military junta that replaced Allende was responsible for the deaths and disappearances of thousands, and the torture of many more. Chile became one of the first experiments in neoliberalism, with the group of economists known as the Chicago Boys directing policies that saw the horrific blend of brutal authoritarian governance and economic deregulation that would come to be the hallmark of that ideology.

In the dying days of Allende's socialist government, plans were being made to install a futuristic control room in the Presidential Palace. The control room – with its viewing screens, data feeds, and chairs that housed panels of buttons, reminiscent of something you might expect to see on the bridge of the Starship Enterprise – had initially been constructed elsewhere in Santiago. Its move to the seat of government was considered vital to defeating the challenge Allende faced. But it was too little, too late, and the system that had helped see off an earlier coup attempt in 1972 was not up and running in time.

This control room was part of one of the world's first networked, computerized information systems, years before the internet would become widely used. At a time when computers were still relatively rare, the idea of a computer network stretching across a territory as large as Chile was utopian in the extreme. In practice, the network that comprised Project Cybersyn, as the undertaking was named, was made up of telex machines, but it allowed for something approaching real-time, adaptive control of industry. The aim was to turn decision making in the economy over to workers, and while this was never properly fulfilled, it is the beginning of the next chapter in the story of anarchist cybernetics.

Stafford Beer's organizational cybernetics

The experience of Chilean socialism under Allende will undoubtedly have limited appeal to anarchists. However sincere Allende and those around him were about improving welfare and democratising the economy, Chile remained a centralized state with a representative system of democracy. It was a far more open and free society than the one that replaced it in 1973, but it was still several steps removed from the kind of decentralized self-organization anarchists want to build.

Project Cybersyn, however, set in motion a radicalization of sorts in cybernetics, and in particular in the work of one influential cybernetician: Stafford Beer. Beer was the inspiration for McEwan's discussion of anarchism and cybernetics; he had seen Beer lecture at the Salford College of

Advanced Technology in the UK. After Allende's election, Beer, at the time a management consultant, was invited to advise attempts at implementing workplace democracy and worker control of industry. Beer's involvement quickly went beyond simply advising, and Project Cybersyn was the result.

For Beer, the experience was life-changing (he recounted the experience at length in the second edition of his book *Brain of the Firm*, published in 1981). He went to Chile a much sought-after consultant, accustomed to a luxurious life of Rolls Royce cars and first-class international travel. Shortly after Allende's death and the demise of socialism in Chile, Beer turned his back on much of that lifestyle. He moved to a small cottage in Wales without running water, and while he continued to do work aimed at improving efficiency in business management, a decidedly political edge entered his thought.

In 1973, the blood of the coup against Allende still wet, Beer gave a series of lectures for the Canadian Broadcasting Corporation. The series was titled 'Designing Freedom' (later published as a book). In it, Beer touched on a wide array of topics, lamenting authoritarianism and presaging the information-hungry surveillance and manipulation of social media. The overarching theme of the lectures was the need for decentralization and autonomy in organization, to facilitate the responsiveness to change McEwan so forcefully articulated in relation to anarchism. Towards the end of the penultimate lecture, Beer stated:

> "According to the analysis of centralization and decentralization with which we began, it is clear that there should be a major devolution of power. I think it should be open to a community to organize its social services (education, health, welfare) exactly as it pleases, and to accept or reject the initiatives of local innovators. [...] I think that workers should in general be free to organize their own work, and that students (up to the age of death) should be free to organize their own studies."[13]

The converse of this kind of decentralized democracy, for Beer, was a system that enshrines decision-making in rigid, top-down structures of command and coercion. "Thus is freedom lost," he said in the final lecture, "not by accident, but as the output of a system designed to curb liberty. My message is that we must redesign that system, to produce freedom as an output."[14] The 'designing freedom' of the title was intended convey the need to create social practices and institutions in which individuals and groups can realize their liberty.

Beer was no anarchist, but there is a convergence of this line of thought with how many anarchists, such as Kropotkin, viewed individual freedom, as the outcome of anarchist social organization rather than pre-existing it. Anarchist organization can be seen, it follows, as a system designed to produce freedom. In the *Designing Freedom* lectures, Beer gave a general introduction to his brand of organizational cybernetics. His main body of work was focused on something he called 'the Viable System Model.' It is in this account of effective, decentralized organization that anarchist cybernetics can be advanced.

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[13] Stafford Beer, Designing Freedom (Toronto: Anansi (1974) 1993), 78-79.
[14] Beer, Designing Freedom, 99.

The Viable System Model

Beer's Viable System Model (VSM) is notoriously difficult to summarize, but I'm going to try (for a more detailed description see here). The VSM in an attempt at showing how any system can cope with variety and change while maintaining both the autonomy of its parts and its coherence as an overall system. It is a way of expanding how we think about the basic cybernetic principles of effective self-organization – principles already covered in this article in the discussion of McEwan's *Anarchy* essay – and it was introduced by Beer specifically with social organization in mind.

The VSM picks out the five different functions that any effective, self-organized social system will embody. First, there are the primary activities of the organization. These are carried out in a largely autonomous fashion. These activities and the autonomous units that carry them out are the purpose of the organization. All other functions exist to facilitate these parts in getting on with things however they want (up to a point; I'll return to this shortly). The second function of the organization is the communication between these autonomous parts. In order that the activity of one part doesn't undermine the activity of another, they have to be able to communicate and share information. Thus is a minimal level of coordination ensured.

Beyond this are the functions that bring these activities together so that they operate as an organization and not a loose collection of activities with no common direction. The third function, then, is concerned with the planning of the primary activities of the organization so that they cohere towards a shared goal. The fourth looks outside the organization and to the future, to assess changes in the wider environment the organization sits in and to make sure those involved in the primary activities can adjust accordingly. The fifth and final function is focused on the identity or ethos of the organization, which shapes all of the activities the organization undertakes.

Cyberneticians Raul Espejo (who worked with Beer in Chile) and Antonia Gill call these functions: Implementation – the basic activities of the organization; Co-ordination – communication between basic activities; Control – the planning that gives the basic activities a common goal; Intelligence – integrating a wider perspective into planning; and Policy – the identity of the organization that provides its values and that guide all other activities. Anarchists may bristle at the word 'control' here, but as I mentioned in the discussion of McEwan's *Anarchy* article, the control at work here is not hierarchical command. It is, in the words of cybernetician Allenna Leonard, "the control of a skier going down a hill."[15] It has more to do with finding collective balance than it does compliance with a higher authority, and could be thought of as the kind of control a group of musicians exert when they improvise.

Many of the organizations where the VSM has been applied have been corporations and governments, and these functions are often linked to specific structural positions in the corporate or political hierarchy. In his book *Diagnosing the System for Organizations* (published in 1985), Beer wrote that the identification of certain functions with positions in a hierarchy was "simply the result of a general acquiescence in the hierarchical concept."[16] It suits those in power, and those who hope to be in power one day, to section off planning functions as the preserve of

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[15] Allenna Leonard, "Viable Systems Model Revisited. A Conversation with Dr Allenna Leonard", The System Excellence Group.

[16] Stafford Beer, Diagnosing the System for Organizations (Chichester: John Wiley & Sons, 1985), 92.

managers and bureaucrats, to specify primary activities as lower in the chain of command and to make them the responsibility of people they can rule over.

This was not how Beer saw things. If we take the VSM back to basics, it becomes clear that these functions do not need to be arranged hierarchically. They can just as well be realized in a radically democratic form of organization, in the kind of anarchist organization that is committed to the elimination of hierarchies of command and domination.

In the mid-1980s, Jon Walker, a worker at the Suma wholefoods cooperative in the UK, wrote to Beer, asking him two questions: could the VSM be used in cooperative forms of governance?; does the VSM require authority and obedience? Beer replied yes to the first question, no to the second. In *The VSM Guide*, Walker wrote: "effective organisational structure can be based upon individual freedom, [...] authoritarian management is not the only alternative."[17]

Through democratic deliberation and collective decision making, each of the functions of the VSM can be replicated without turning to hierarchical governance structures. People and groups involved in the basic activities of an organization can communicate in decentralized and networked ways, formally or informally, to coordinate what they do. These activities can be brought together under a common set of goals by agreement of all involved. The task of planning for the future and dealing with change when it happens everyone in an organization can play a part in, either directly or through delegates. And the identity of the organization and the principles that help define its goals can be a matter for participatory decision making or processes like constitutional design that all members of an organization have a say in.

Walker wrote of how in workers' cooperatives, the operation (primary activities) and meta-system (coordination, planning, ethos) functions can be actualized by the same people stepping into different roles "when the work was being done they were Operation, when planning was necessary they articulated the Metasystem. The fundamental co-operative principle of self-management means that there is no clear division in the roles of people working within the group."[18]

Some of the work cyberneticians like Walker – alongside Angela Espinosa and others – have done over the last few decades points in this direction and takes us some of the way towards the design of freedom that Beer called for in 1973. This is not an unrestricted freedom, a liberty without constraint. Those involved in the basic activities of the organization are limited in their autonomy. They are part of an overarching organization with goals and plans, however they are defined. But these limits, these goals, these plans, are not set by managers, bosses or bureaucrats higher up the organizational chart. They are limits set through participatory democratic agreement and are based on consent, not subservience.

Importantly, the VSM is not a blueprint for how organizations should be structured. It is a tool those in organizations can use to help understand the dynamics and patterns of organization and communication that make their organizations effective. As Beer put it in *Diagnosing the System for Organizations*, it is not about a model of organization that is true or false. It is a way of thinking through organizational problems that is either more or less useful. As such, it can be used to help diagnose problems as they arise, as it has been very recently, for example, in the Pagkaki workers' cooperative in Greece as well as in a number of cooperatives Walker was involved in.

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[17] Jon Walker, "The VSM Guide," accessed May 9 2021, esrad.org.uk/resources/vsmg_3.

[18] Walker, "The VSM Guide."

Cybernetics in and beyond the current crisis

The VSM can also be utilized in thinking through how and why certain examples of anarchist(ic) organization work, or don't, as the case may be. Occupy Wall Street, at its most effective, was a system in which each working group had a level of autonomy, coordinated through formal and informal communication with other working groups. But working groups were also bound by decisions made at the General Assembly or Spokes Council. And these institutions were not a body or power above working groups but forums for consensual agreement and negotiation that all could take part in, directly in the General Assembly or through delegates at the Spokes Council.

While the VSM may not have been used by Occupy Wall Street activists, that the Spokes Council was brought into being due to the inability of the General Assembly to do the kind of planning required of the camp speaks to the VSM's capacity to reflect insights that those intimately involved in practices of self-organization will often come to themselves. Again, the VSM is not a blueprint. It is a way of understanding and naming some fundamental truths of effective self-organization. Like any truths of this sort they can be filled out in different ways. Occupy was one such way.

As so many of us have engaged in mutual aid groups since the start of last year – something that will surely continue as the social and political crisis deepens even as the medical crisis passes – might the VSM not also be a tool we use in diagnosing the problems we encounter? What does the imposition of charity dynamics and co-optation by local government bureaucrats mean not only for the political agenda of mutual aid groups but also for their ability to effectively respond to a complex and rapidly changing situation? Do the hierarchies that develop and the associated slowness and distance of decision-making threaten the very capacity of mutual aid groups to do what they were set up for: to respond quickly to the needs of those involved? As many anarchists know only too well, mutual aid works best when it is decentralized, autonomous, and highly adaptive. The VSM gives us a way of articulating that and pinpointing with precision the communication and decision-making blockages that emerge.

This is how, almost sixty years later, we can begin to take the logical next steps of John McEwan's article in *Anarchy*, and envisage an anarchist cybernetics. It is a cybernetics that builds on the foundational principles of complexity and adaptability, on a scientific understanding of self-organization in systems, on the fundamental demand for autonomy and decentralization, on the recognition of the importance of organizational coordination. More than this, it is a cybernetics that makes no unfounded leaps in its thinking about organization, from autonomy to hierarchy, from decentralization to a top-down corporate or governmental structure.

With increasing interest in radical articulations of cybernetics in recent years (in the work of libertarian Marxists such as the General Intellect Unit and Jeremy Gross as well as anarchist readings such as those of John Duda, Aurora Apolito and Tektological Serendipity), now is perhaps a better time than any to look back across this often misunderstood and mischaracterized tradition and pull out those elements that can advance our theoretical and practical understanding of self-organization.

This essay began talking about the origins of the word 'cybernetics' in Plato's metaphor of the ship. Plato likened the ship's captain to the individual who wields autocratic power in a city-state. Leo Tolstoy used a similar metaphor. In *War and Peace*, Tolstoy wrote, "it seems to every administrator that it is only by his efforts that the whole population under his rule is kept going.

[...] While the sea of history remains calm the ruler-administrator in his frail bark, holding on with a boat hook to the ship of the people and himself moving, naturally imagines that his efforts move the ship he is holding on to."[19] But as the storm hits, in Ruth Kinna's words, "the captain is revealed both to himself and the crew as feeble and useless in the face of the crisis."[20] If we draw cybernetics and anarchism together, we can reveal to the light not only the folly of the captains of state but also the mechanisms of self-organization that might help us chart a different course.

[19] Leo Tolstoy, "War and Peace," The Anarchist Library, accessed May 9 2021, `https://theanarchistlibrary.org/library/leo-tolstoy-war-and-peace`.

[20] Ruth Kinna, "The Transformative Power of Crisis," IAI News, accessed May 9 2021, iai.tv/articles/the-transformative-power-of-crisis-auid-1772.

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