The Poverty of Networks

David M. Berry

The Wealth of Networks
by Yochai Benkler
New Haven, CT: Yale University Press, 2007, pp. 515, ISBN 0 300 12577 1, pbk £11.99

Decoding Liberation: The Promise of Free and Open Source Software
by Samir Chopra and Scott Dexter
New York: Routledge, 2008, pp. 232, ISBN 0 415 97893 4, hbk £60.00

The Exploit: A Theory of Networks
by Alexander Galloway and Eugene Thacker
Minneapolis: Minnesota University Press, 2007, pp. 256, ISBN 0 816 65044 6, pbk £12.00

Abstract
The use of networks as an explanatory framework is widespread in the literature that surrounds technology and information society. The three books reviewed here – *The Wealth of Networks* by Yochai Benkler, *Decoding Liberation: The Promise of Free and Open Source Software* by Samir Chopra and Scott Dexter, and *The Exploit: A Theory of Networks* by Alexander Galloway and Eugene Thacker – all make a claim to the novelty that networks provide to their subject matter. By looking closely at the way in which the network is utilized in each of the texts, this review attempts to question the extent to which a network analysis can ground a claim about a discontinuity in technology, society or economics.

Key words
commons ■ Deleuze ■ information society ■ networks ■ open source ■ rhizomatics ■ theory

■ *Theory, Culture & Society* 2008 (SAGE, Los Angeles, London, New Delhi, and Singapore), Vol. 25(7–8): 364–372
DOI: 10.1177/0263276408097813

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015

DELEUZE AND Guattari (2003) told us that they are tired of trees, and one can sympathize with the sentiment. Although today one might wonder if they might also have added that they were weary of networks. One certainly cannot seem to escape from the all-encompassing explanatory temptation offered by the point and the connection, the node and the edge. Nowadays we are told that we are being infiltrated by terrorist networks, urged to become members of social networks, or it is said that mankind is destroying ecological networks, not to mention soon to be attacked by invisible viral bird-flu networks. All around us are hidden (and not so hidden) networks that structure and organize our social, political, biological and economic world while we, as nodes, become mere subject positions for a host of active structural network formations that act and interact behind our backs. It is argued that the networks have agency and volition, that they are multiple, amorphous, decentred, limitless and often, it is claimed, non-hierarchical and structureless forms or fluid organizations. It is little wonder that reading about networks makes one's head spin. Not only is the network the answer to our every utopian dream (enter the Multitude) but also our very worst nightmare (enter Empire). You would certainly have good reason to be wary of networks.

The problem, perhaps, lies in the apparent simplicity and elegance of graph theory. Here is a mathematical approach, used widely in computer science, to help optimize and theorize about real-world problems when transcribed into the esoteric world of finite-state machines and Boolean algebra. Mapping the complex, overlapping, fuzzy and constantly shifting phenomenal world into an abstract model is a useful tool for creating a laboratory in which to explore problems as diverse as travelling salesmen, airplane refuelling, military manoeuvres or stochastic financial markets. Within this domain networks can be used to help understand the best way to create an efficient supply chain or unwind a complex financial product. Graph theory can help optimize an algorithm, or even suggest original approaches to solving real-world problems. The trouble begins when we forget that we are using models and think that the world conforms to our network model, or perhaps even worse, when we attempt to remake the world in terms of our network theories. For, of course, our models, whether network-based or otherwise, are simplifications of the world. The network is not ontological it is analytical, and as such it is restricted in how much it can tell us and how useful it can be. But when we are told that we live in a Network Society (Castells, 2000), or that we no longer have friends, rather we have social networks (Levine et al., 2001), it is easy to see the way in which conceptual slippage has already slipped too far. The argument that diverse things (both human and non-human) are members of networks means that all can be understood as instances of a transcendental network that is common to them all. Instead of the cunning of reason, we see the beginnings of the cunning of networks. So we should be aware that networks remain within the domain of theory and, as Moretti argues:

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015

> Theories are nets, and we should evaluate them, not as ends in themselves, but for how they *concretely change the way we work*: for how they allow us to enlarge the . . . field, and re-design it in a better way, replacing the old, useless distinctions . . . with new temporal, spatial, and morphological distinctions. (2007: 91, original emphasis)

So, with this in mind, I want to look at the three texts under review with a view to how their use of networks as a key explanatory framework provides better ways of understanding the world. More importantly, as we read we should bear in mind that networks provide morphological information about their topology. That is, how the network is shaped and how the actors within can therefore interact. Networks privilege a reading of reality that highlights the synchronic dispersal over the diachronic unfolding. Networks, in a certain sense, abolish history and shift our focus to the event, the happening or the now. They also tend to highlight those that are connected, as the unconnected, by definition, are not within the network. This is a limitation, and it is important to bear it in mind as it places limits on the palette from which we are able to paint, and this can have important consequences for our image of reality unless tempered by other approaches that make up for its deficiencies.

Turning therefore to Galloway and Thacker's *The Exploit: A Theory of Networks* (2007), we have perhaps the clearest example of the use of the network as social theory. Here they present the argument that network theory offers a new and useful way of understanding the 'Society of Control' (2007: 35) in which we are living today. They state that 'it is this existence-as-such of networks that needs to be thought; the existence of networks invites us to think in a manner that is appropriate to networks' (2007: 13). Suggesting that today we need to think 'topologically', they 'mean an approach that compares the abstract spaces of different structural or architectonic systems. Pyramid hierarchy and distributed networks, for example, have two different topologies of organization and control' (2007: 13). Networks offer possibilities and dangers for Galloway and Thacker. Hence to fight authoritarian forms of network, they argue that we also need to develop a way to break the network, and here Galloway and Thacker turn to the metaphor of the *Exploit*, a piece of computer software that allows the network to be infiltrated, disabled or destroyed (discussed further below).

> To be effective, future political movements must discover a new exploit. A whole new topology of resistance must be invented that is as asymmetrical in relationship to networks as the network was in relation to power centres. . . . The new exploit will be an 'anti-web'. (2007: 22, emphasis removed)

They start by connecting their concept of the network to the 'emergent' property of organization that they believe is facilitated by the network form and that draws on Galloway's previous work, *Protocol: How Control Exists after Decentralization* (2006). Here they wish to anchor the amorphous

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015

nature of the network with a control 'layer' that directs flow around the network.

> Today network science often conjures up the themes of anarchy and rhizomatics, distribution, and antiauthority to explain interconnected systems of all kinds. Our task here is not to succumb to the fantasy that any of these descriptors is a synonym for the apolitical or the disorganized, but in fact to suggest the opposite, that rhizomatics and distribution signal a new management style, a new physics of organization that is as real as pyramidal hierarchy, corporate bureaucracy, representative democracy, sovereign fiat, or any other principle of social and political control. (2007: 29)

This they define as *protocol*, which is a concept of the network that exists in a metastable state, that is, that the network is held in place by technical control mechanisms that can then be directed by actors (both human and non-human). Drawing heavily on the metaphor of the computer network and the protocols that govern its condition of possibility (most notably TCP/IP), they draw similarities between protocol and the notion of sovereignty. This sovereignty-in-networks is manifest through the control of protocol – which they liken to the control of the global capitalist system of American power. The problem is, of course, that in an age of the network this argument curiously makes the network somewhat irrelevant for analysis – if they argue that networks can only be understood through protocol, then the network is effectively disregarded as the 'real' activity of control takes place through protocol. For example, the protocol that handles the world-wide web (www) is the hypertext transmission protocol (http), but this functions more like an old-fashioned client–server model of computing, with control held in the centralized web-server and the users located on spokes around the server. Their argument implies that the network level of explanation is therefore superfluous and protocol (manifesting an old hub–spoke system of power) should be the focus of research.

> Protocological control challenges us to rethink critical and political action around a newer framework, that of multiagent, individuated nodes in a metastable network. (2007: 30, emphasis removed)

Here they argue, following Carl Schmitt, that sovereignty is not the power to command or execute the law but the power to claim exceptions to the law. Thus power is equated with the power to decide, in particular the power to decide what constitutes an exceptional situation. However, in an age of networks it becomes difficult to find the locus of control within the network, and therefore if one is to effect change it is impossible to find the target for political action: 'if, as the truism goes, it takes networks to fight networks, then it takes networks to understand networks, as well' (2007: 100). Here they draw the notion of the exploit into their argument more firmly, proposing that discovering holes in existent technologies and networks can be a lever to project change. Further, that the exploit may

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015

trigger a shift in the ontology of the network, which through its failure may result in a shift in its topology and possibilities for other forms of change. In sum, they argue that today to write theory is to write computer code and speculate that the transition from the present to the future might involve:

	Societies of Control	. . . the Future
Control diagram	*cybernetics; protocol*	*physics; particle swarms*
Machine	*computers*	*bioinformatics*
Resistive act	*mutation; subversion*	*desertion; perturbation*
Delinquent act	*randomness*	*nonexistence*
Political algorithm	*disturbance*	*hypertrophy*
Strategem	*security; exception*	*gaming; inception*
Historical actor	*communities; the people*	*élan vital; multitude*
Mode of liberation	*neoliberal capitalism*	*'life-in-common'*

(Galloway and Thacker, 2007: 100)

Galloway and Thacker (2007: 157) draw to a close by arguing that it is the 'unhuman' aspects that should be the focus of analysis (reminding one of actor-network theory):

> What exactly would such an unhuman view of networks entail? We close – or rather, we hope, open – with a thought concerning networks as 'elemental' forms. . . . Networks are elemental, in the sense that their dynamics operate at levels 'above' and 'below' that of the human subject. . . . The unhuman aspects of networks challenge us to think in an elemental fashion. The elemental is, in this sense, the most basic and the most complex expression of the network. (2007: 157)

However, the book ends with a scale problem: the authors never really decide what *kind* of network at what *scale* and in what *form* they wish to investigate; by lacking this materiality of the network, the work resembles a metaphysics of the network. Ultimately, the problem with their argument is that the authors fail to recognize that sovereignty is identified when the network *breaks down* (following Schmitt). The network can be understood as a condition of possibility for protocol, and protocol as the condition of possibility for communications (via a network form), but when the network dies, so does protocol. In this case, it will be something from outside the network that will be required to step in to reboot the network, and it is here that the true sovereignty behind the network becomes apparent – especially considering that most of the network capacity today is owned or controlled by US corporations or the US government. The exploit, then, may indeed be a useful metaphor, not for attacking network forms of power, but rather for identifying the hidden forms of *plasma* behind the network.

With Benkler's *The Wealth of Networks* (2007), we see perhaps the other end of the scale, with an almost hyper-empiricist approach which treats the ontological security of the network as given. Here Benkler argues

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015

that not only are we seeing a new form of social organization developing in relation to the network (handily facilitated although not determined by technology) but also a vastly more efficient, productive and more wealth-generating society than we have ever seen before. Benkler's book might accurately be described as putting forward a social shaping position (MacKenzie and Wacjman, 1999), where the emergence of a technology is shaped by human actors and may then go on to shape the environment under which humans live and work, creating what he terms 'technological-economic feasibility spaces' (2007: 31). He argues that these, in conjunction with social responses, create the institutional and legal practices that underpin social practices. However, even though Benkler tries hard to avoid technological determinism, he is constantly straying close to a description of technology and economics (and in the last instance technology) as determining the milieu. One might think of this as a weak technological determinism, rather similar to the affordances described by Wellman et al. (2003). However, even with his many caveats throughout the text, Benkler sometimes can't help himself and longs to declare a revolutionary new era of network production – which in many ways is the premise of the book. The text itself is 515 pages long, and Benkler includes a dazzling quantity of information to back up the argument that we are witnessing a paradigm shift in communications, the 'wealth of networks' of the title. However, ultimately his entire thesis rests on a rather shaky binary distinction between proprietary industrial forms of economic and technological structure and non-proprietary peer-production models. This is a result of his assumption that networks are not industrial or proprietary, or perhaps that they have more of a tendency (affordance) towards non-proprietary forms. I think that here, as in Galloway and Thacker, there is an assumed normativity associated with the network form, which is assumed to be far too closely linked to decentralization and non-hierarchy. Too often when we are looking at technology we tend to overestimate the short-term impact and underestimate the long-term impact. In my opinion, here Benkler falls into this trap in emphasizing perhaps too strongly the radical implications of peer-production through network forms of organization, failing to recognize the extent to which, if they are indeed so wealth-generating, they will be co-opted into mainstream 'industrial' ways of production. To paraphrase Steve Jobs, the corporate world may soon provide peer-production for the rest of us.

Lastly, with Chopra and Dexter's *Decoding Liberation* (2008) we arrive at the micro-level analysis of the concrete example of the free/libre and open source software (FLOSS) movements responsible for GNU/Linux among other major software productions. In this book the network moves backstage as the organizing principle of FLOSS groups. FLOSS has been of great interest to many scholars due to the way in which it organizes its activities online, both in terms of the network-forms the organizational structures generally appear to take, but also the non-proprietary arrangements used to share computer code between them (so called *copyleft* licensing). FLOSS projects – and it is important to note that there are a multitude of different

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015

projects each organizing themselves in slightly different ways – tend toward a sharing community which enables each of the users and developers to pool resources and knowledge freely. This is generally non-market, and as there is no explicit payment for the often excellent computer software that is exchanged, it is sometimes described as a form of gift economy. *Decoding Liberation* covers a lot of ground very quickly and consequently reads more like a series of essays than a cohesive text, and in many instances the choice of topics is rather idiosyncratic (although always interesting). Naturally some of the essays are stronger than others, notably those towards the latter half of the book, and in many cases there is an over-reliance on other texts, which is difficult to avoid in a synoptic approach such as this. Nonetheless, some of the subjects are extremely thought-provoking (such as the chapters on computer science as a scientific practice and the role of free software in a cyborg world infused with code). This would be a very useful text for students looking to cover the literature on FLOSS, particularly those from a science background who wish to know more about the social and philosophical side of software development.

It is, however, the network that undergirds the argument made by Chopra and Dexter, and it is the assumed radical potentials offered by new technology that explain the authors' fervent belief in the power of free software to be transformative. Put simply, it appears as a neo-Marxist argument where power is manifested through the ownership and control of technology – and, as with Benkler, it is the ownership of the means of production that is the key political question for the 21st century. Here Chopra and Dexter situate free software on the side of resistance to the co-option of technology by large economic interests (to use Galloway and Thacker's terms, free software as the *exploit*). They argue that where in the past it was the ownership of material things that was important for capital – hardware, factories, tools – now it is ownership of the immaterial – software, algorithms, patents and copyright – that will determine the shape of the new age. It is here, however, that we see the emergence of another binary (material/immaterial) and, as Kittler (1997) has shown, even something as ephemeral as software has a concrete materiality which problematizes this distinction. It is also a curious assumption that it is through the use of free technologies, such as FLOSS, that there would be an abolition of opaqueness (i.e. hidden power structures), as code is hardly transparent to most onlookers – although hackers operating within new associational forms within civil society might offer an important way of making code public. One is reminded of Lippman's (1997) attack on the assumption that journalists could shine a light on government and politics and forgetting that employers decide what journalists write (or certainly what gets printed). Are Chopra and Dexter arguing that computer programmers could be a new informational elite acting for the good of society? If so, it is important to note that programmers, even when acting in a FLOSS capacity, are strongly influenced by the activities of the corporations (who often pay their wages) and the needs of particular economic interests. Also, assuming that FLOSS

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015

software becomes increasingly important to economic life, then corporations will ensure that they shape its development without killing its economic potential. This we can already see with the carefully managed use of FLOSS by companies such as IBM and Apple.

All three books tend to present an idealized past and present as two mutually antagonistic economic, social and technological forms: *industrial hierarchical mass production* versus *peer-produced decentralized network production*. I think that while these are understood as analytical distinctions they can serve a useful purpose for clarifying the way in which technology could contribute to changes in our economic and social life. However, it is very difficult to demonstrate a causal relationship between these idealized forms of organization and our milieu. Equally, the drift from these analytical categories towards a more ontological claim is sometimes found in all the texts.

The network as an explanatory approach offers a particularly enticing view of society for those who want to argue for a break or discontinuity with what has gone before. The network analyst is interested in how a network is connected rather than how or why it was connected in a particular way – a particular feature/bug of the network approach. Further, the network is a spatial diagram which provides topological information about the nodes that are connected with it. As such it flattens reality and removes the distinctions between different nodes – in a network an individual programmer and a multinational corporation become equal as connected nodes in the network (Latour, 2005: 179–80).

I would hazard a guess that the eventual possibilities offered through any form of networked digital technology will be ones of hybridity, combining the advantages of industrial mass production with the possibilities suggested through networked peer-production (and perhaps its disadvantages too). But this then calls for a greater methodological sensitivity and attention on the part of scholars to the morphology of the network so that we see how network forms are implemented in particular ways. In addition, the necessary simplifications offered by any form of network-theory based approach must continually be highlighted lest we forget that structure subsists over time *and* space, and that reality always exceeds our capacity to explain it.

References

Castells, M. (2000) *The Rise of the Network Society*. London: Blackwell.

Deleuze, G. and F. Guattari (2003) *A Thousand Plateaus*. London: Continuum.

Galloway, A. (2006) *Protocol: How Control Exists after Decentralization*. Cambridge, MA: MIT Press.

Kittler, F. (1997) *Literature, Media, Information Systems*. London: Routledge.

Latour, B. (2005) *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.

Levine, R., C. Locke, D. Searls and D. Weinberger (2001) *The Cluetrain Manifesto: The End of Business as Usual*. New York: Perseus Publishing.

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015

Lippman, W. (1997) *Public Opinion*. London: Simon and Schuster.

MacKenzie, D. and J. Wacjman (1999) *The Social Shaping of Technology*. London: Open University Press.

Moretti, F. (2007) *Graphs, Maps, Trees: Abstract Models for Literary History*. London: Verso.

Wellman, B., A. Quan-Haase, J. Boase et al. (2003) 'The Social Affordances of the Internet for Networked Individualism', *Journal of Computer-Mediated Communication* 8(3), URL (consulted April 2008): http://jcmc.indiana.edu/vol8/issue3/wellman.html

David M. Berry is a lecturer in Media and Communication at Swansea University. He writes widely on computer code, digital media and medium theory. His most recent book is *Copy, Rip, Burn: The Politics of Copyleft and Open Source* (Pluto, 2008).

Downloaded from tcs.sagepub.com at GEORGIAN COURT UNIV on May 14, 2015