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STILL AGAINST NETWORKS

Against Networks was first written in 2004. It is a bit of an odd article, one that is apparently more interesting on the continent (where this is the second time an excerpt will be published) than it is in the UK or the US (where it has been rejected twice, but has a small, curious and friendly readership). I suspect this has something to do with the relative and inscrutable boundary policing of Actor-Network Theory (ANT). The article started as a critique of ANT – or more precisely, a critique of what ANT theorists were not doing. It developed over time into a more general attempt to think through networks and infrastructure – concepts that share the problem of being both analytical tools and very clearly material things in the world. Indeed, the piece was substantially written before, or just about the same time as the explosion of 'social media' – a time just before we started to talk easily and everywhere about social networks and social graphs. With hindsight, I am even less sure that anyone today, academic or otherwise, knows quite what they mean when they use the word *network*, or the word *social*, much less *social network*. So I am still against networks.

I like to think that *Against Networks* represents my own attempt, however awkward and unfamiliar, not to critique but to combine Actor-Network Theory with German Media Theory. These are two traditions that now seem to more passionately traffic with each other than they did ten years ago, when I started writing this article. That relationship is now producing its first (and lets hope not sterile) hybrids.[1] I think it is safe to say that, while there has always been an awareness by one of the other, they have rarely taken each other seriously until recently. This no doubt also has something to do with the mystical midwifery of Speculative Realism and New Materialism – but I am no close observer of such trends.

My own formation as a Science Studies scholar in the US was as much steeped in the German Media Theory as in ANT – but that

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1 E.g. Tristan Thielmann and Erhard Schüttpelz (eds.), *Akteur-Medien-Theorie*, Bielefeld, Transcript, 2013; Lorenz Engell and Bernhard Siegert (eds.), *ANT und die Medien*, *Zeitschrift für Medien- und Kulturforschung*, 4(2), 2013.

combination was mostly of my own making. Reading Kittler in the US in the 1990s was cutting edge (if not just obscure) only in Literature departments – almost no one in history or anthropology would have known or cared much about it. But as someone with a foot in at least three disciplines at any one time, I have never been much for flag-waving or edge-cutting (too many edges, not enough loyalty), and so this piece probably reads to people more like *theorie naïf* than it does theory proper. But the question of how to think about the Internet was, for me, trapped between the injunctions of the Kittlerites ("Media determine our situation"; "there is no software" etc.) and those topping the ANThill ("associations not society"; "objects too have agency" etc.). So at one and the same time, the piece intended to "open the brown box" as a critique of ANT (networks are what needs to be explained, not the thing that does the explaining), and an application of *Kulturtechnik* to the design and organization of the Internet.[2]

That is the theory, perhaps; but the most straightforward way to read this piece is as a prequel to or a draft of ideas in *Two Bits: The Cultural Significance of Free Software.* I wanted that book to provide a theory that makes sense of the Internet – or at least some core aspects of the structure of the Internet, if not its uses – much of the book dwells on the intertwined history and development of both the Internet and Free Software. (Aside: the original subtitle was *The Cultural Significance of Free Software and the Internet* – the copula succumbed to press marketing). For instance, if protocols are important, and if TCP/IP is the most important of them, then that development clearly shared far more with the kinds of practices that occupied free software programmers than it ever did with the kinds of things that occupied professional engineers, standards bodies in Geneva, or big computer companies like IBM. Rather, it is a Cinderella story with the fairy godmother played by Richard Stallman. I wanted to explain how that history was central to what the Internet was becoming. Today, of course, the Internet is becoming something else – less Cinderella and more Godzilla, but that is, as we say, another story.

It was, therefore, natural to ask of the Internet: "is it a network or is it an infrastructure or is it something else?" Through the 1990s and early 2000s, "theories" of the Internet included thin, feel-good works by people like Howard Rheingold and Pierre Lévy focused on a vague concept of community. And in sociology proper, Manuel Castells' enormous, meandering books provided a perfect exemplar of the kind of thing ANT hates – explaining everything with the concept of 'society' rather than recognizing that "network society" is precisely what

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2 Cp. Bernhard Siegert, "Cultural Techniques: Or the End of the Intellectual Postwar Era in German Media Theory", *Theory, Culture & Society,* 30(6), 2013, pp. 48–65.

needs to be explained. But there were many others trying to make better sense of the Internet as a problem and a phenomenon. Among them were Paul Edwards, who was concerned with the concept of infrastructure, again, both as an analytical tool and as something of which the Internet was an instance.[3] And Alex Galloway provocatively, but not persistently, focused on "protocol" as the basis of an understanding of the Internet.[4] Still others focused on issues of governance and standardization as the central object of analysis.[5] But overall, there have been few attempts in either ANT or German Media Theory to 'theorize' the Internet's singularity and significance.

For me, the exploration of the concepts of networks and infrastructures in *Against Networks* was intended to lead somewhere: I wanted to understand when and how *networks* – genealogically speaking – ascended to the status they had in ANT. I wanted to articulate whether and how ANT's *network* had anything to do with the debates and advances within engineering that transformed communication networks from a practical engineering problem of power grids and telephone systems into theories of seven-layer stacks and packet-switched/circuit-switched distinctions, and "design principles" of "end to end" neutrality.[6] Similarly, the question of *infrastructure* has both an analytical origin and a set of practical engineering problems that reveal not just a media-specific set of questions, but properly political ones as well.[7]

As a result, *Against Networks* is an attempt to 'do theory' in the way that my colleagues in media theory, in British sociology and some in Actor-Network Theory commonly do. I think I failed at this, though I hope there is no shame in that. What I needed for the work of writing *Two Bits*, was not a theory of the Internet, but a more useful concept that might cut through the simultaneously *media-historical* questions and the largely a-historical ANT-inspired method. And that was how the

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3   Cp. Paul N. Edwards, "Infrastructure and Modernity: Force, Time, and Social Organization in the History of Sociotechnical Systems", in: Thomas J. Misa et al. (eds.), *Modernity and Technology*, Cambridge MA, MIT Press, 2003, pp. 185–225.

4   Cp. Alexander R. Galloway, *Protocol: How Control Exists after Decentralization*, Cambridge MA, MIT Press, 2004.

5   Cp. Milton Mueller, *Ruling the Root: Internet Governance and the Taming of Cyberspace*, Cambridge MA, 2002; Laura DeNardis, *Protocol Politics: The Globalization of Internet Governance*, Cambridge MA, MIT Press, 2009; Andrew L. Russell, *Open Standards and the Digital Age*, Cambridge MA, Cambridge University Press, 2014.

6   Before there was neutrality there was stupidity: Cp. David Isenberg, "Rise of the Stupid Network", *Computer Telephony* 5(8), 1997, pp. 16–26.

7   On this approach to infrastructure, cp. Stephen Collier and Andrew Lakoff, "The Vulnerability of Vital Systems: How 'Critical Infrastructure' Became a Security Problem", in Myriam Anna Dunn and Kristian Søby Kristensen (eds.), *Securing 'the Homeland': Critical Infrastructure, Risk and (In)Security*, London, New York NY, 2008, pp. 40–62; Collier and Lakoff, "Distributed Preparedness: the Spatial Logic of Domestic Security in the United States", *Environment and Planning D, Society and Space,* 26(1), 2008: 7–28.

concept of "recursive publics" emerged. I wanted a way to capture what made the media-specific characteristics of the Internet so significant at the same time as trying to explain the existence of something (publics or a public sphere) rather than using that concept to explain something. What is more, I wanted a way to signal the *dynamic* processes taking place – the recent past and near future – of the Internet, and for that I needed something other than a putative universal like *infrastructure* or *network*, and rather a description of how a set of concrete practices were modulated, combined and retooled during a crucial period of the development of the Internet (1970-1990). So *Against Networks* now looks more like a missing scene from a movie – one in which a narrator tries awkwardly to explain what is going on in the story but only complicates it by doing so. Am I still against networks? Indeed. Ever more so: I am up against them all the time, and they are still the things that need explaining. Every day I see a new report, blog, article, story discussing how the magic data of Twitter allows us to 'see society' or analyze a 'social' network. The terms are unlikely to illuminate anything because they are projections of various disciplinary commitments or salves to comprehensibility. But social networks are undoubtedly both *Kulturtechnik* and tools for making and breaking associations; everyone seems to be studying them, but few people seem interested in *explaining* them anymore… or yet.