

What Can a Network Do?

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I'm interested in an event. The event itself goes by many names and is described in different ways by different kinds of thinkers. In the work of Martin Heidegger it is called the end of philosophy; others use the name the end of history; in science it is called cybernetics, or ecology, or systems theory; in economics it is called postfordism; in industry it is called computer networking; in philosophy some say it goes simply by the name of Gilles Deleuze. In general we can call this event the emergence of the *networked form of mediation*.

It is common to talk about networks in terms of equality, that networks bring a sense of evenhandedness to affairs. It is common to say that networks consist of relationships between peers, and that networks standardize and homogenize these relationships. I begin like this not to suggest that such characterizations are false, but rather to suggest that they obscure the reality of the situation. Networks only exist in situations of asymmetry or incongruity. If not no network would be necessary--symmetrical pairs can "communicate," but asymmetrical pairs must "network." So to begin to address the question "What can a network do?" I would like to look at what it means to be in a relationship of asymmetry, to be in a relationship of inequality, or a relationship of antagonism. I think the most important place where asymmetry, antagonism and inequality have been thought through is in political and social theory, particularly in military theory. This is because military theory is one of the key places in which the pure energy of antagonism has been explored via the theme of the asymmetrical threat. It comes by many names. Sometimes the asymmetrical threat is called the insurgent, the partisan, the irregular, sometimes a riot, a crowd, sometimes it's called a popular rebellion, or a guerrilla force. These are some of the many synonyms for the networked form of antagonism. It is why today whenever you hear of terrorists you hear of "terrorists networks."

There are many great thinkers who have explored this mode, including Sun Tzu and Carl von Clausewitz's writing on military theory, but also the extension of these ideas in the writings on guerrilla warfare by V. I. Lenin and Mao Tse-tung. Yet I will cite three passages from the very crucial late-modern phase, crucial because of the special relationship that has arisen historically between the network mode of mediation and the middle to late-twentieth century:

¶ *Robert Taber*--Author of *War of the Flea* on guerrilla insurgencies and their relationship to state power. "The guerrilla fights the war of the flea, and his military enemy suffers the dog's disadvantages: too much to defend; too small, ubiquitous, and agile an enemy to come to grips with. If the war continues long enough--this is the theory--the dog succumbs to exhaustion and anemia without ever having found anything on which to close his jaws or to rake with his claws."¹

¶ *Elias Canetti*--The celebrated Bulgarian novelist who wrote on the animalistic qualities of the infuriated pack (the "crowd"). "The first thing which strikes one about the pack is its unswerving direction; equality is expressed in the fact that all are obsessed by the same goal, the sight of an animal perhaps, which they want to kill."²

¶ *Guy Brossollet*--The French soldier and military theorist who described a system of "non-battle" arising from within the logic of cold-war nuclear deterrence. A fighting force made up of "pinpricks," not "fists," deployed across a "mesh" of "presence modules" and supported by communication networks that can produce a "series of minor but statistically consistent actions."³ (This

¹ Robert Taber, *War of the Flea* (Washington, DC: Potomac Books, 2002), 20.

² Elias Canetti, *Crowds and Power*, Carol Stewart, trans. (New York: Farrar, Straus and Giroux, 1962), 93.

³ Guy Brossollet, *Essai sur la non-bataille* (Paris: Belin, 1975), 67-78, emphasis removed from

is a common theme in discourse on networks, that every individual action is relatively small and ineffective but on a statistically wide viewpoint there can be a very powerful cumulative effect.) “Multiform, maneuverable, [and] omnipresent” was how Brossollet described the virtues of the new flexible, network-centric warfare.⁴

These writings, along with many others, not only help explain what networks look like--rhizomatics, distributed networks, swarming clouds, impersonal agents--they also help support a much more important claim: not simply a description of networks, but the claim that, at this moment in history, we are living through a new transformation.

In other words, and in more concrete terms, we can expect a tendential fall in the efficiency of cultural objects such as images and texts, and a marked increase in the efficiency of an entirely different format for aesthetic mediation: the system, the machine, the network.

What can a network do? There is a common way of answering this question: networks can bring down governments; networks can build new empires out of the ashes of the old; networks can use connectivity itself to propagate quickly into new spaces; networks are the masters of both center and perimeter; networks can use the “long tail” to counterbalance spikes of high intensity; networks are also often described as “out of control,” that they tend to neuter the effects of traditional power centers; in short that networks and hierarchies are always in opposition to one another, even as new networked sovereigns appear on the scene. But I will not answer the question in precisely this way.

Instead I'll answer the question using a concept from computer science: *protocol*, and in particular the Internet protocols. I've spent some time reading through the Internet protocols and have tried to analyze them not simply from a technical perspective, but rather to ask what are the principles of organization that are embedded inside this technical system? This would require a very long answer. So instead, allow me to summarize some of the results of this analysis. These then are some of the virtues of the kinds of systems that are governed by protocol.

The first is that the Internet protocols allow for inter-operation between computers. Protocol's virtues include robustness, contingency, inter-operability, flexibility, and heterogeneity. The so-called “Robustness Principle,” which comes from RFC 761 on the transmission control protocol (TCP), one of the most important political principles of distributed networks, is stated as follows: “Be conservative in what you do, be liberal in what you accept from others.” This is called the Robustness Principle because if a technical system is liberal in what it accepts and conservative in what it does the technical system will be more robust over time. (But of course wouldn't it ultimately make more sense to relabel this the Neoliberal Principle?) This indicates a second virtue of protocol: totality. As the Robustness Principle states, one must accept everything, no matter what source, sender, or destination. Because of this I want to say that protocol or a system that uses protocols is a system of *distributed management* that facilitates peer-to-peer relationships between autonomous entities. And because of these virtues and these qualities and owing to the global adoption of the protocols, we can say that the Internet is the mostly highly organized mass media hitherto known. Finally, the last point by way of summarizing what protocols are and how they work is that as a logic of organization, the Internet protocols operate largely outside the two spheres most commonly identified when talking about power and control, which are the state (the world of law, the juridical world) and the commercial or corporate sector. Yes of course, members of industry participate in the drafting of protocols, and legal forces influence how technology develops, this is clear, but nevertheless viewed as a technical infrastructure, the protocols are largely outside these other two spheres. Hence my suggestion that we require a method of analysis unique to protocol itself.

original.

⁴ Ibid., 15.

Next, using these assumptions about protocol, I would like to identify a few details of networked media that have important ramifications for the question of digital citizenship.

The first is that, following Claude Shannon and Warren Weaver's discoveries in the area of information theory, *informatic networks are relatively indifferent to semantic content and interpretation*. A network is not a text. Questions of interpretation, semantic questions about meaning--these I would associate with the tradition of the text, which is to say textual analysis, textual interpretation, reading, and writing. It is my position that networks are not texts, and that they have to be understood as systems or as machines. In other words data is parsed, it is not "read," at least in any conventional, humanistic sense of reading. This can be seen in the concept of a checksum, a simple numeric signature that appears in all network messages. A checksum is computed from scanning the "content" of a message, it is not realized via any *bona fide* act of "reading" the message. This is simply one example of the difference between parsing and reading. In a sense we do nothing today but compute checksums here and there. Because reading is on the wane.

The tendency to be indifferent to interpretation and semantic content could be called the "anti-hermeneutic tendency" of networks. Here I use the term hermeneutics to mean the textual science of interpretation, which has its roots in biblical interpretation but which has flourished right through the modern and postmodern periods. In short, a new model of reading will have to be explored, one that is not hermeneutic in nature, but is instead based on cybernetic parsing, scanning, rearranging, filtering, and interpolating. This new model of reading will need to be based on an immanent or machinic notion of software.

(Let me note in passing that this tendency only *increases* with the advent of the so-called semantic web. It does not decrease. When something is perfected in software it is dead. This is not technophobic nostalgia on my part. It is simply to register a truth about what "perfection" means.)

The second ramification is what might be called *the political tragedy of interactivity*. Interactivity and network bidirectionality was famously held up as a sort of utopia by Bertolt Brecht in his short fragments on radio, and later reprised by Hans Magnus Enzensberger as the heart and soul of an "emancipated" media. How does a medium become emancipated? It shifts from being unidirectional to being bidirectional. However the situation has changed such that today bidirectionality is the norm not the exception. Today interactivity is one of the core instruments of control and organization. Today, networks ensnare in the very act of connection. Networks are exceedingly efficient at articulating and conveying messages bidirectionally (in what graph theory terms an "undirected" graph). In short, organisms must communicate today whether they want to or not. This is essentially why "communication" and "control" are inextricably linked in Norbert Wiener's concept of cybernetics. Organisms are "captured," to use Phil Agre's terminology, using any number of informatic codes and rubrics. Clicks are accumulated. Behaviors are mined for meaningful data, or tracked for illegal data. Even the genome is prospected for rare or otherwise useful sequences, something that is particularly important in the context of Brazil, given the desire to prospect within diverse biological ecosystems. For example, pharmaceutical companies will go to the Amazon and find pockets of biodiversity, which in themselves have monetizable value. These pockets of diversity are extracted and removed. Thus bioprospecting is itself a process of informatic interactivity, the information in question is simply genetic in nature. This is the political tragedy of interactivity: what was once so liberating for Enzensberger is today the very site of informatic exploitation, regulation and control.

The third ramification is the tendency for software to privilege surface over source, while at the same time championing sources as absolutely essential even when hidden. But what does this mean? Software is often understood as existing in various level or modes. At the level of authorship, software exists as "source code," a human-readable text that contains commands written in a high level computer language such as C++. When this source code is compiled, these commands are translated

into machine-readable code called an executable application, consisting of basic commands that can be understood by the hardware of the machine. This application creates a third modality of software, the “runtime” experience of actually launching and running the software as a normal user. These three modalities—source, executable, and interface—are three crucial aspects of any computer technology. The interface is often considered to be primary, as it is the actually existing experience of the software, as it relates to a user. Yet at the same time, the executable is itself the determining moment as it contains the actual machinic commands necessary for the software to function. But third, the executable is merely the result of a machinic compilation of the source code, which is thus considered essential, as the recipe is to the created work, or the musical score is to the performance. So for software “source” to work it must appear in a form it is not (the executable) only to be experienced in a third form different entirely from the other two. This is what might be called the occult logic of software: *software hides itself at exactly the moment when it expresses itself most fully*.

I will end with an example pulled from recent news headlines. You may have already read about this new triumph from the laboratories: scientists, with their many talents, have recently created a vaccine for cocaine.⁵ Apparently the cocaine vaccine works in a way quite similar to that of other vaccines. A serum is administered to a patient and the effects of the drug are neutralized, just as how the effects of the flu are neutralized with a flu vaccine. However, and this is the crucial point, the cocaine vaccine does *not* remove the cravings of addiction, which is to say the desire to acquire and use the drug.

The cocaine vaccine is a perfect image for us. We still have the cravings, but we can't get high. We have a liberation of individual desire and freedom, a liberation of openness. Never has desire and affective expression ever been so liberated. We have so many cravings today--for democracy, for food and drink, for oil, for connectivity. But at the same time we are unable to realize the utopian pleasures of these promises. Our networks are weapons. Our webs are also our own snares. Interactivity is drudgery. Transparency comes at the cost of blackboxing everything. This is the condition of the digital citizen today. It is our task therefore not to spin new tails about the heroism of the network, but instead to offer a critical reconstruction in code, such that the very apparatus itself is recast as a tool for practice, not a tool for management as it remains to this day.

⁵ Roni Caryn Rabin, “Cocaine Vaccine Is Developed, but It Does Not Keep Users From Wanting the Drug,” *The New York Times*, October 6, 2009, A18.