

# Nodes

*Discourse surrounding networks, in keeping with the idea of networks themselves, is becoming more and more ubiquitous.*

For the last decade or more, network discourse has proliferated with a kind of epidemic intensity: peer-to-peer file-sharing networks, wireless community networks, terrorist networks, contagion networks of biowarfare agents, political swarming and mass demonstration, economic and finance networks, online role-playing games, personal area networks, mobile phones, “generation Txt,” and on and on.

*Often the discourse surrounding networks tends to pose itself both morally and architecturally against what it sees as retrograde structures like hierarchy and verticality.*

These structures are seen to have their own concomitant techniques for keeping things under control: bureaucracy, the chain of command, and so on. “We’re tired of trees,” wrote Deleuze and Guattari. But even beyond the fields of technology and philosophy, the concept of the network has infected broad swaths of contemporary

life. Even the U.S. military, a bastion of vertical, pyramidal hierarchy, is redefining its internal structure around network architectures, as the military strategists Arquilla and Ronfeldt have indicated in their work. They describe here a contemporary mode of conflict known as “netwar”: “Netwar is about the Zapatistas more than the Fidelistas, Hamas more than the Palestine Liberation Organization (PLO), the American Christian Patriot movement more than the Ku Klux Klan, and the Asian Triads more than the Cosa Nostra.”<sup>1</sup> These in/out lists are, of course, more fun to read than they are accurate political evaluations, but it is clear that the concept of connectivity is highly privileged in today’s societies.

*In fact, the idea of connectivity is so highly privileged today that it is becoming more and more difficult to locate places or objects that don’t, in some way, fit into a networking rubric.*

This is particularly the case as the Fidelistas and so on are further eclipsed by their network-savvy progeny. The 2001 USA PATRIOT Act and other legislation allowing increased electronic surveillance further reinforce the deep penetration of networked technologies and networked thinking. One wonders if, as networks continue to propagate, there will remain any sense of an “outside,” a nonconnected locale from which we may view this phenomenon and ponder it critically.

*In today’s conventional wisdom, everything can be subsumed under a warm security blanket of interconnectivity. But this same wisdom hasn’t yet indicated quite what that means, nor how one might be able to draft a critique of networks.*

All this fanfare around networks highlights the continued indisociability of politics and technology. There are several sides to the debate. The technophilic perspective, such as that expressed by Howard Rheingold or Kevin Kelly, is an expression of both a technological determinism and a view of technology as an enabling tool for the elevation of bourgeois humanism in a broadly general sense. The juridical/governance perspective, seen in the work of Lawrence Lessig, Yochai

Benkler, and others, posits a similar situation whereby networks will bring about a more just and freer social reality via legal safeguards. The network science perspective, expressed in popular books by Mark Buchanan or Albert-László Barabási, portrays the network as a kind of apolitical natural law, operating universally across heterogeneous systems, be they terrorism, AIDS, or the Internet. Moreover, this dichotomy (between networks as political and networks as technical) is equally evident in a variety of other media, including news reportage, defense and military research, and the information technology industries.

Yet this “network fever” has a tendency to addle the brain, for we identify in the current literature a general willingness to ignore politics by masking them inside the so-called black box of technology.<sup>2</sup>

*Thus one of our goals is to provide ways of critically analyzing and engaging with the “black box” of networks, and with this ambivalence between politics and technology (in which, sadly, technology always seems to prevail).*

*The question we aim to explore here is: what is the principle of political organization or control that stitches a network together?*

Writers like Michael Hardt and Antonio Negri have helped answer this question in the sociopolitical sphere. Their concept of “empire” describes a global principle of political organization. Like a network, empire is not reducible to any single state power, nor does it follow an architecture of pyramidal hierarchy. Empire is fluid, flexible, dynamic, and far-reaching. In that sense, the concept of empire helps us greatly to begin thinking about political organization in networks.

*But are networks always exclusively “human”? Are networks misanthropic? Is there a “nonhuman” or an “unhuman” understanding of networks that would challenge us to rethink the theory and practice of networks?*

While we are inspired by Hardt and Negri’s contribution to political philosophy, we are concerned that no one has yet adequately answered this question for the technological sphere of bits and atoms. That is, we seek a means of comprehending networks as simultaneously

material and immaterial, as simultaneously technical and political, as simultaneously misanthropic and all-too-human.

*Let us continue then not with an empirical observation but with a concept. Derived from the discourses of both the life sciences and computer science, the concept of “protocol” refers to all the technoscientific rules and standards that govern relationships within networks. Protocols abound in technoculture. They are rooted in the laws of nature, yet they sculpt the spheres of the social and the cultural. They are principles of networked interrelationality, yet they are also principles of political organization.*

Quite often networked relationships come in the form of communication between two or more computers, but the relationships can also refer to purely biological processes, as in the systemic phenomenon of gene expression or the logics of infection and contagion. Protocol is not a single thing but a set of tendencies grounded in the physical tendencies of networked systems. So by “networks” we mean any system of interrelationality, whether biological or informatic, organic or inorganic, technical or natural—with the ultimate goal of undoing the polar restrictiveness of these pairings.

Abstracted into a concept, protocol may be defined as a horizontal, distributed control apparatus that guides both the technical and political formation of computer networks, biological systems, and other media.

Molecular biotechnology research frequently uses protocols to configure biological life as a network phenomenon, whether in gene expression networks, metabolic networks, or the circuitry of cell signaling pathways. In such instances, the biological and the informatic become increasingly enmeshed in hybrid systems that are more than biological: proprietary genome databases, DNA chips for medical diagnostics, and real-time detection systems for biowarfare agents. Likewise in computer networks, science professionals have, over the years, drafted hundreds of protocols to create e-mail, Web pages, and so on, plus many other standards for technologies rarely seen by human eyes. An example might be the “Request for Comments” series of Internet white papers, the first of which was written by Steve Crocker in 1969, titled “Host Software.”<sup>3</sup> Internet users commonly use proto-

cols such as http, FTP, and TCP/IP, even if they know little about how such technical standards function. If networks are the structures that connect organisms and machines, then protocols are the rules that make sure the connections actually work.

*Protocol is twofold; it is both an apparatus that facilitates networks and a logic that governs how things are done within that apparatus.*

Today network science often conjures up the themes of anarchy, 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. From the sometimes radical prognostications of the network scientists, and the larger technological discourse of thousands of white papers, memos, and manuals surrounding it, we can derive some of the basic qualities of the apparatus of organization that we here call protocol:<sup>4</sup>

- Protocols emerge through the complex relationships between autonomous, interconnected agents.
- To function smoothly, protocological networks must be robust and flexible; they must accommodate a high degree of contingency through interoperable and heterogeneous material interfaces.
- Protocological networks are inclusive rather than exclusive; discrimination, regulation, and segregation of agents happen on the inside of protocological systems (not by the selective extension or rejection of network membership to those agents).
- Protocols are universal and total, but the diachronic emergence of protocols is always achieved through principles of political liberalism such as negotiation, public vetting, and openness.

- Protocol is the emergent property of organization and control in networks that are radically horizontal and distributed.

Each of these characteristics alone is enough to distinguish protocol from many previous modes of social and technical organization (such as hierarchy or bureaucracy). Together they compose a new, sophisticated system of distributed control. As a technology, protocol is implemented broadly and is thus not reducible simply to the domain of institutional, governmental, or corporate power.

*In the broadest sense, protocol is a technology that regulates flow, directs namespace, codes relationships, and connects life-forms.*

Networks always have several protocols operating in the same place at the same time. In this sense, networks are always slightly schizophrenic, doing one thing in one place and the opposite in another. The concept of protocol does not, therefore, describe one all-encompassing network of power—there is not one Internet but many internets, all of which bear a specific relation to the infrastructural history of the military, telecommunications, and science industries. This is not a conspiracy theory, nor is it a personification of power. Protocol has less to do with individually empowered human subjects (the pop-cultural myth of hackers bringing down “the system”) who might be the engines of a teleological vision for protocol than with manifold modes of individuation that arrange and remix both human and nonhuman elements (rather than “individuals” in the liberal humanist sense). But the inclusion of opposition within the very fabric of protocol is not simply for the sake of pluralism—which of course it leverages ideologically—but instead is about politics.

*Protocological control challenges us to rethink critical and political action around a newer framework, that of multiagent, individuated nodes in a metastable network.*

Political action in the network, then, can be guided deliberately by human actors, or accidentally affected by nonhuman actors (a computer virus or emerging infectious disease, for example). Often, tactical misuse of a protocol, be it intended or unintended, can iden-

tify the political fissures in a network. We will suggest later that such moments, while sometimes politically ambiguous when taken out of context, can also serve as instances for a more critical, more politically engaged “counterprotocol” practice. As we shall see, protocolological control brings into existence a certain contradiction, at once distributing agencies in a complex manner while at the same time concentrating rigid forms of management and control. This means that protocol is less about power (confinement, discipline, normativity), and more about control (modulation, distribution, flexibility).

### Technology (or Theory)

There exists an entire science behind networks, commonly known as graph theory, which we would like to briefly outline here, for it subtends all our thinking on the nature of networks and systems.<sup>5</sup> Mathematically speaking, a graph is a finite set of points connected by a finite set of lines. The points are called “nodes” or vertices, and the lines are called “edges.” For the sake of convenience we will use  $G$  to refer to a graph,  $N$  to refer to the nodes in the graph, and  $E$  to refer to its edges. Thus a simple graph with four nodes (say, a square) can be represented as  $N = \{n_1, n_2, n_3, n_4\}$  and its edges as  $E = \{(n_1, n_2), (n_2, n_3), (n_3, n_4), (n_4, n_1)\}$ . In a graph, the number of nodes is called the “order” (in the square example,  $|N| = 4$ ), and the number of edges is called the “size” ( $|E| = 4$ ).

*In the mathematical language of graph theory, networks provide us with a standard connect-the-dots situation.*

Given this basic setup of nodes and edges, a number of relationships can be quantitatively analyzed. For instance, the “degree” of a node is the number of edges that are connected to it. A “centralized” or “decentralized” graph exists when a relatively small number of nodes function as “hubs” by having many edges connected to them, and when the remaining “leaf” nodes have only one edge. This results in a graph where the order and size are roughly the same. Likewise, a “distributed” graph exists when the hub/leaf split disappears and all nodes have approximately the same degree. This results in a

graph where the size far exceeds the order. What can we tell by both the order and size of a graph? One of the basic theorems of graph theory states that for any graph with a finite number of edges, the sum of the degrees of the nodes equals twice the number of edges. That is, if the degree of any node is the number of edges connected to it (for node  $n_1$  with two edges connected to it, its degree = 2), the sum of all the degrees of the graph will be double the size of the graph (the number of edges). For a square, the sum of the degrees is 8 (the nodes [the square's corners] each have 2 edges [the square's lines] connected to them), while the sum of the edges is 4. In other words, the *connectivity* of a graph or network is a value different from a mere count of the number of edges. A graph not only has edges between nodes but also has edges connecting nodes.

*From a graph theory perspective, networks can be said to display three basic characteristics: their organization into nodes and edges (dots and lines), their connectivity, and their topology. The same sets of entities can result in a centralized, rigidly organized network or in a distributed, highly flexible network.*

The institutional, economic, and technical development of the Internet is an instructive case in point. While the implementation of packet-switching technology in the U.S. Department of Defense's ARPANET ostensibly served the aims of military research and security, that network also developed as a substantial economic network, as well. Paul Baran, one of the developers of packet switching, uses basic graph theory principles to show how, given the same set of nodes or points, and a different set of edges or lines, one gets three very different network topologies.<sup>6</sup> The familiar distinction between centralized, decentralized, and distributed networks can be found everywhere today, not only within computer and information technologies but also in social, political, economic, and biological networks.

As we have suggested, networks come in all shapes and flavors, but common types include centralized networks (pyramidal, hierarchical schemes), decentralized networks (a core "backbone" of hubs each with radiating peripheries), and distributed networks (a collection of node-to-node relations with no backbone or center).



*From the perspective of graph theory, we can provisionally describe networks as metastable sets of variable relationships in multinode, multiedge configurations.*

In the abstract, networks can be composed of almost anything: computers (Internet), cars (traffic), people (communities), animals (food chains), stocks (capital), statements (institutions), cultures (diasporas), and so on. Indeed, much of the research in complex dynamic systems, nonlinear dynamics, and network science stresses this convergence of heterogeneous phenomena under universal mathematical principles.

*However, we stress this point: graph theory is not enough for an understanding of networks; or rather, it is only a beginning.*

Although graph theory provides the mathematical and technical underpinning of many technological networks (and the tools for analyzing networks), the assumptions of graph theory are equally instructive for what they omit.

First is the question of agency. The division between nodes and edges implies that while nodes refer to objects, locations, or space, the definition of edges refers to actions effected by nodes. While agency is attributed to the active nodes, the carrying out of actions is attributed to the passive edges (the effect of the causality implied in the nodes). Graphs or networks are then diagrams of force relationships (edges) effected by discrete agencies (nodes). In this, graphs imply a privileging of spatial orientations, quantitative abstraction, and a clear division between actor and action.

Second is what might be called the “diachronic blindness” of graph theory. Paradoxically, the geometrical basis (or bias) of the division between “nodes” and “edges” actually works against an understanding of networks as sets of relations existing in time. While a graph may evoke qualities of transformation or movement in, for example, the use of directed edges, it is an approach that focuses on fixed “snapshot” modeling of networked ecologies and their simulation using mathematical models and systems. This is, we suggest, a fundamentally synchronic approach.

Related to this is the pervasive assumption that networks can exist in an ideal or abstract formulation (a mathematical graph) estranged from the material technologies that, in our view, must always constitute and subtend any network.

A final disadvantage of graph theory is the question of internal complexity and topological incompatibility. Not only are networks distinguished by their overall topologies, but networks always contain several coexistent, and sometimes incompatible, topologies. This is a lesson learned from general systems theory, whereby networks consist of aggregate interconnections of dissimilar subnetworks. The subnet topologies will often be in transition or even be in direct opposition to other forms within the network. Thus any type of protocol control exists not because the network is smooth and continuous but precisely because the network contains within it antagonistic clusterings, divergent subtopologies, rogue nodes. (This is what makes them networks; if they were not internally heterogeneous, they would be known as integral wholes.) For example, a merely “technical” description of the topology of the Internet might describe it as distributed (for example, in the case of peer-to-peer file-sharing networks based on the Gnutella model, or in the routing technologies of the Internet protocol). But it is impossible to disassociate this technical topology from its motive, use, and regulation, which also make it a social topology of a different form (file-sharing communities), an economic topology with a still different form (distribution of commodities), and even a legal one (digital copyright). All of these networks coexist, and sometimes conflict with each other, as the controversy surrounding file sharing has shown. While graph theory can indeed model a number of different topologies, we prefer an approach wherein the coexistence of multiple incompatible political structures is assumed as fundamental.

*Thus not only do existing network theories exclude the element that makes a network a network (its dynamic quality), but they also require that networks exist in relation to fixed, abstract configurations or patterns (either centralized or decentralized, either technical or political), and to specific anthropomorphic actors.*

Indeed, one of the arguments presented here is to reinforce the notion that material instantiation is coextensive with pattern formation. Material substrate and pattern formation exist in a mutually reciprocal relationship, a relationship that itself brings in social-political and technoscientific forces.

## Theory (or Technology)

In the “Postscript on Control Societies,” a delectably short essay from 1990, Deleuze defines two historical periods: first, the “disciplinary societies” of modernity, growing out of the rule of the sovereign, into the “vast spaces of enclosure,” the social castings and bodily molds that Michel Foucault has described so well; and second, what Deleuze terms the “societies of control” that inhabit the late twentieth century—these are based around protocols, logics of “modulation,” and the “ultrarapid forms of free-floating control.”<sup>7</sup> For Deleuze, “control” means something quite different from its colloquial usage (as in “control room” or “remote control”).

*Control is not simply manipulation, but rather modulation.*

One does not simply control a device, a situation, or a group of people; rather, “control” is what enables a relation to a device, a situation, or a group. “People are lines,” Deleuze suggests. As lines, people thread together social, political, and cultural elements. While in disciplinary societies individuals move in a discrete fashion from one institutional enclosure to another (home, school, work, etc.), in the societies of control, individuals move in a continuous fashion between sites (work-from-home, distance learning, etc.). In the disciplinary societies, one is always starting over (initiation and graduation, hiring and retirement). In the control societies, one is never finished (continuing education, midcareer changes). While the disciplinary societies are characterized by physical semiotic constructs such as the signature and the document, the societies of control are characterized by more immaterial ones such as the password and the computer.<sup>8</sup>

## Toward a Political Ontology of Networks

We need an approach to understanding networks that takes into account their ontological, technological, and political dimensions. We will first restate the characteristics of protocol mentioned earlier: as a network phenomenon, protocol emerges through the complex relationships between autonomous, interconnected agents; protocological networks must be robust and flexible and must have material interfaces that can accommodate a high degree of contingency; protocological networks discriminate and regulate inclusively to their domain, not exclusively; principles of political liberalism guide all protocol development, resulting in an opt-in, total world system; and protocol is the emergent property of organization and control in networks that are radically horizontal and distributed. As we have shown, the “entity” in question may be the DNA computer and its laboratory techniques, or it may be the OSI Reference Model with its various layers for network protocols.

But if this is the case, we also need a set of concepts for interweaving the technical and the political. Ideally, our political ontology of networks would provide a set of concepts for describing, analyzing, and critiquing networked phenomena. It would depend on and even require a technical knowledge of a given network without being determined by it. It would view the fundamental relationships of control in a network as immanent and integral to the functioning of a network.

*1. We can begin by returning to the concept of individuation, a concept that addresses the relation between the particular and the universal.*

Individuation is a long-standing concept in philosophy, serving as the central debate among classical thinkers from Parmenides to Plato. Individuation is the process by which an entity is demarcated and identified as such. Individuation is different from the individual; it is a mobilization of forces that have as their ends the creation of individuals. In a sense, the question is how an individual comes about (which in turn leads to anxieties over causality). But individuation

takes on new forms in the societies of control. As we've mentioned, for Deleuze a mode of individuation has little to do with individual human subjects, and more to do with the process through which a number of different kinds of aggregates are maintained over time. Individuation is key for understanding the construction of the entity, but it is equally key for understanding the construction and maintenance of the molecular aggregate (the network). Gilbert Simondon, writing about the relationships between individuation and social forms, suggests that we should "understand the individual from the perspective of the process of individuation rather than the process of individuation by means of the individual."<sup>28</sup>

*A network deploys several types of individuation in the same time and space. It individuates itself as such from inside (organized political protests) or is individuated from the outside (repeated references by the United States to a "terrorist network").*

The first type of individuation is that of the macroidentification of the network as a cohesive whole. This is, of course, a paradoxical move, since a key property of any network is its heterogeneity. Hence the first type of individuation is in tension with the second type of individuation in networks, the individuation of all the nodes and edges that constitute the system, for while the whole is greater than the sum of the parts, it is nevertheless the parts (or the localized action of the parts) that in turn constitute the possibility for the individuation of "a" network as a whole. Of course, the way the first individuation occurs may be quite different from the way the second occurs.

*The individuation of the network as a whole is different from the individuation of the network components. However, both concern themselves with the topology of the network.*

In the context of networks, individuation will have to be understood differently. Instead of the classical definition, in which individuation is always concerned with the production of individuals (be they people, political parties, or institutions), in the control society, individuation is always concerned with the tension between the

individuation of networks as a whole and the individuation of the component parts of networks.

*Individuation in the control society is less about the production of the one from the many, and more about the production of the many through the one. In the classical model, it is the hive that individuates the drone. Here, however, every drone always already facilitates the existence of multiple coexisting hives. It is a question not of being individuated as a “subject” but instead of being individuated as a node integrated into one or more networks. Thus one speaks not of a subject interpellated by this or that social force. One speaks instead of “friends of friends,” of the financial and health networks created by the subject simply in its being alive.*

The distinction from political philosophy between the individual and the group is transformed into a protocological regulation between the network as a unity and the network as a heterogeneity (what computer programmers call a “struct,” a grouping of dissimilar data types). It is the management of this unity–heterogeneity flow that is most important. In terms of protocological control, the question of individuation is a question of how discrete nodes (agencies) and their edges (actions) are identified and managed as such. Identification technologies such as biometrics, tagging, and profiling are important in this regard, for they determine what counts as a node or an edge in a given network. Some key questions emerge: What resists processes of individuation? What supports or diversifies them? Does it change depending on the granularity of the analysis?

*2. Networks are a multiplicity. They are robust and flexible.*

While networks can be individuated and identified quite easily, networks are also always “more than one.” Networks are multiplicities, not because they are constructed of numerous parts but because they are organized around the principle of perpetual inclusion. It is a question of a formal arrangement, not a finite count. This not only means that networks can and must grow (adding nodes or edges) but, more important, means that networks are reconfigurable in new ways

and at all scales. Perhaps this is what it means to be a network, to be capable of radically heterogeneous transformation and reconfiguration.

*In distributed networks (and partially in decentralized ones), the network topology is created by subtracting all centralizing, hermetic forces. The guerrilla force is a guerrilla force not because it has added additional foot soldiers but because it has subtracted its command centers.*

“The multiple must be made,” wrote Deleuze and Guattari, “not by always adding a higher dimension, but rather in the simplest of ways, by dint of sobriety, with the number of dimensions one already has available—always  $n-1$ .”<sup>29</sup> Like Marx’s theory of primitive accumulation, it is always a question of inclusion through a process of removal or disidentification from former contexts. It is inclusion by way of the generic. The result is, as Deleuze argues, something beyond the well-worn dichotomy of the one and the many: “Multiplicity must not designate a combination of the many and the one, but rather an organization belonging to the many as such, which has no need whatsoever of unity in order to form a system.”<sup>30</sup>

A technical synonym for multiplicity is therefore “contingency handling”; that is, multiplicity is how a network is able to manage sudden, unplanned, or localized changes within itself (this is built into the very idea of the Internet, for example, or the body’s autoimmune system). A network is, in a sense, something that holds a tension within its own form—a grouping of differences that is unified (distribution versus agglomeration). It is less the nature of the parts in themselves, but more the conditions under which those parts may interact, that is most relevant. What are the terms, the conditions, on which “a” network may be constituted by multiple agencies? Protocols serve to provide that condition of possibility, and protocological control the means of facilitating that condition.

3. *A third concept, that of movement, serves to highlight the inherently dynamic, process-based qualities of networks.*

While we stated that networks are both individuated and multiple, this still serves only to portray a static snapshot view of a network.

Most of the networks we are aware of—economic, epidemiological, computational—are dynamic ones. Networks exist through “process,” in Alfred North Whitehead’s sense of the term, a “nexus” that involves a prehension of subject, datum, and form.

*Perhaps if there is one truism to the study of networks, it is that networks are only networks when they are “live,” when they are enacted, embodied, or rendered operational.*

This applies as much to networks in their potentiality (sleeping cells, network downtime, idle mobile phones, zombie botnets) as it does to networks in their actuality. In an everyday sense, this is obvious—movements of exchange, distribution, accumulation, disaggregation, swarming, and clustering are the very stuff of a range of environments, from concentrated cities to transnational economies to cross-cultural contagions to mobile and wireless technologies. Yet the overwhelming need to locate, position, and literally pinpoint network nodes often obfuscates the dynamic quality of the edges. To paraphrase Henri Bergson, we often tend to understand the dynamic quality of networks in terms of stasis; we understand time (or duration) in terms of space. “There are changes, but there are underneath the change no things which change: change has no need of a support. There are movements, but there is no inert or invariable object which moves: movement does not imply a mobile.”<sup>31</sup>

*4. Finally, in an informatic age, networks are often qualified by their connectivity, though this is more than a purely technical term.*

The peculiarly informatic view of networks today has brought with it a range of concerns different from other, non-IT-based networks such as those in transportation or analog communications. The popular discourse of cyberspace as a global frontier or as a digital commons, where access is a commodity, conveys the message that the political economy of networks is managed through connectivity. As Arquilla and Ronfeldt have commented, whereas an older model of political dissent was geared toward “bringing down the system,”



many current network-based political movements are more interested in “getting connected”—and staying connected.<sup>32</sup>

There are certainly many other ways of understanding networks akin to the ones mentioned here. We have tried to ground our views in an analysis of the actual material practice of networks as it exists across both the biological and information sciences.

*We want to propose that an understanding of the control mechanisms within networks needs to be as polydimensional as networks are themselves.*

One way of bridging the gap between the technical and the political views of networks is therefore to think of networks as continuously expressing their own modes of individuation, multiplicity, movements, and levels of connectivity—from the lowest to the highest levels of the network. In this way, we view networks as political ontologies inseparable from their being put into practice.

## **The Defacement of Enmity**

*Are you friend or foe? This is the classic formulation of enmity received from Carl Schmitt. Everything hinges on this relation; on it every decision pivots.*

Friend-or-foe is first a political distinction, meaning that one must sort out who one's enemies are. But it is also a topological or *diagrammatic* distinction, meaning that one must also get a firm handle on the architectonic shape of conflict in order to know where one stands. Anticapitalism, for example, is not simply the hatred of a person but the hatred of an architectonic structure of organization and exchange. Friend-or-foe transpires not only in the ideal confrontation of gazes and recognitions or misrecognitions, as we will mention in a moment, but in the topological—that is, mapped, superficial, structural, and formal—pragmatics of the disposition of political force. To what extent are political diagrams and topologies of military conflict analogous to each other? On a simple level, this would imply a relationship between political and military enmity. For instance, first there is large-scale, symmetrical conflict: a standoff between nation-states, a