

Networks NOW: Belated Too Early

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ABSTRACT

What is it about networks that makes them such a compelling, universal concept? How has “it’s a network” become a valid answer: the end rather than the beginning of the analysis? Why and how has it become the diagram for both global capital and contemporary U.S. society? This article addresses these questions by arguing that networks have been central to the emergence, management, and imaginary of neoliberalism, in particular to its narrative of individuals collectively dissolving society. Tracing the ways in which networks, or more precisely the mapping of networks, were embraced as a way to evaporate the postmodern confusion that dominated the late-seventies and early-eighties, this article reveals that the force of networks stems from how they are imaged and what they are imagined to do. Networks allow us to trace and to spatialize unvisualizable interactions as flows: from global capital to environmental risks, from predation to affects. To begin to imagine networks differently, this article argues that, rather than focusing on network maps and connections, we need to think about new media in terms of habitual repetition and leaks.

The network has become a defining concept of our epoch. From high-speed financial networks that erode national sovereignty to networking sites like Facebook.com that transform the meaning and function of the word “friend,” from twitter feeds that foster new political alliances to unprecedented globe-spanning viral vectors that threaten world-wide catastrophe, networks encapsulate everything that is new and different about our social institutions, global formations, and political and military organizations.

Why? What is it about networks that makes them such a compelling, universal concept, employed by disciplines from sociology to biology, media studies to economics? How has “it’s a network” become a valid answer—the end, rather than the beginning, of an explanation? Why and how has it become the diagram for both global capital and contemporary U.S. society—a structure that makes the United States perhaps once again simultaneously exceptional and universal?

This article addresses these questions by arguing that networks have been central to the emergence, management, and imaginary of neoliberalism, in particular to its narrative of individuals collectively dissolving society. Tracing the ways in which networks, or more precisely the mapping of networks (to the extent that networks and maps can be separated), were embraced as a way to evaporate the postmodern confusion that dominated the late-seventies and early-eighties, I reveal that the force of networks stems from how they are imaged and what they are imagined to do. Networks allow us to trace and to spatialize interactions that we otherwise find difficult to visualize: from global capital to environmental risks, from predation to affects. They also offer a resolution that pierces the “mass” or community to track individuals and individual relations. Although they enable

a form of cognitive mapping that links the local to the global, networks produce new dilemmas: we are now forever mapping, but more precariously than ever. Rather than engaging in decisive political action, we defer and extend action: we are arguably forever searching, but never finding. We move from the zoom to the overview without changing the world or our perspective. To begin to imagine networks differently, I argue that, rather than focusing on network maps and connections, we need to think about new media in terms of habitual repetition and leaks.

Orienting Postmodern Disorientation

Near the end of the last century, there was a growing consensus that postmodernity had seriously, if not irreparably, impaired the ability of individuals to comprehend their relation to the larger world around them. This was because the factors that determined their lives were increasingly global and inhuman, yet their means of navigating and negotiating their circumstances were painfully local and organic.

Fredric Jameson made this argument most forcefully in his influential diagnosis of postmodernism. According to Jameson, since the beginnings of what we now call globalization in the nineteenth century, it has become harder and harder to conceive of our position in the world. "There comes into being," he argues, "a situation in which we can say that if individual experience is authentic, then it cannot be true; and that if a scientific or cognitive model of the same content is true, then it escapes individual experience" (411). Since the rise of industrial and imperial capitalism, the truth of our seemingly authentic experiences has lain elsewhere: for instance, the truth behind nineteenth-century domestic tea rituals in England lay in India. Postmodernity exacerbated this discontinuity between the authentic and the true. In his now canonical description of the Los Angeles Bonaventure Hotel, Jameson wrote, "postmodern hyperspace [...] has finally succeeded in transcending the capacities of the individual human body to locate itself, to organize its immediate surroundings perceptually, and cognitively to map its position in a mappable external world" (83). This physical incapacity, Jameson suggested, is symbolic of an "even sharper dilemma which is the incapacity of our minds, at least at present, to map the great global multinational and decentered communicational network in which we find ourselves caught as individual subjects" (44). This incapacity to map, which Jameson conjectured to be our historically unique dilemma, stems from the increasing density of space and the waning of temporality. Sounds and images relentlessly saturate space and render the world a "rubble of distinct and unrelated signifiers" (26). Faced with this breakdown of the signifying chain, we cannot cognitively map our relation to capitalist totality.

This conception of individual subjects as caught in an overwhelming, unrepresentable, unimaginable global system, in which standard causal thinking is broken, was eerily repeated across disciplines, from sociology to economics, from ecology to physics. Ulrich Beck, writing in 1986, diagnosed the emergence of what he called a "risk society" in terms that resonate with Jameson's. According to Beck, we are moving from a system based on visible wealth (and thus class solidarity and humanly perceivable causality) to a self-reflexive modernity based on

invisible risks that produce “unknown and unintended consequences” (22). These risks, which can only be delimited scientifically, reverse the normal relationship between experience and judgment: rather than base our judgment on our personal experience, we base it on a general knowledge detached from personal experience. Since this general knowledge shapes our personal assessments and decisions, “we are dealing [...] with ‘second-hand non-experience’” that defies the imagination (72). As Beck stressed, “a large group of the population faces devastation and destruction today, for which language and the powers of our imagination fail us, for which we lack any moral or medical category. We are concerned with the absolute and unlimited NOT, which threatens us here, the un in general, unimaginable, unthinkable, un-, un-, un-” (52). Like Jameson, then, Beck argued that the greatest threat stems from the fact that we cannot imagine—that is, conceive or map—the threats around us.

In a less apocalyptic and thus less utopian manner, sociologist Mark S. Granovetter, writing in 1973, also argued, “the personal experience of individuals is closely bound-up with larger-scale aspects of social structure, well beyond the purview or control of particular individuals” (1377). To make comprehensible the relationship between personal experience and social structure, Granovetter produced one of the most influential social maps (see fig. 1).

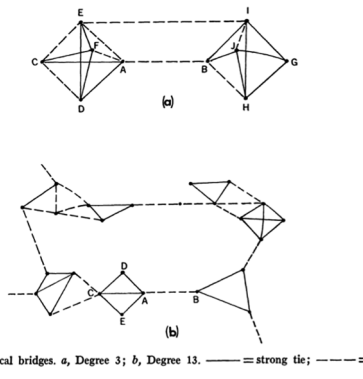


Fig. 1. Mark Granovetter’s social network diagram (Granovetter 1365).

This map tracks ties between individuals, where a tie represents friendship. The map spatializes invisible and temporal connections between individuals: it represents interactions as lines that can be traced and individuals as nodes that can be tracked. Through this figure, Granovetter countered the assumption that those with the most ties—that is, the social centers—are the most powerful and influential. Rather, those who are weakly tied to others are the most effective in spreading information, in helping others find jobs, and in spreading infection. This finding thus also subtly redefined what counted as most powerful: what matters was not the force of dissemination (i. e., how quickly someone can disseminate information to the most number of people), but rather the ability to disseminate rare information (information that cannot be readily gained elsewhere).

Jameson too saw new forms of mapping—of outlining and clarifying connections between locations and agents—as central to resolving the distance between personal experience and global knowledge. Jameson’s version of mapping, however, was more tentative and speculative. Reaching for a solution to our postmodern dilemma, he envisioned a not yet imaginable form of political socialist art that would make it possible for us to act in the world because it charts mainly invisible and currently inconceivable connections. As Jameson explains, cognitive mapping,

(if it is possible at all) will have to hold to the truth of postmodernism, that is to say, to its fundamental object—the world space of multinational capital—at the same time at which it achieves a breakthrough to some as yet unimaginable new mode of representing this last, in which we may again begin to grasp our positioning as individual and collective subjects and regain a capacity to act and struggle which is at present neutralized by our spatial as well as our social confusion. (54)

For Jameson, this new form of mapping corresponded to “an imperative to grow new organs, to expand our sensorium and our body to some new, yet unimaginable, perhaps ultimately impossible, dimensions” (39). Although cognitive mapping (which Jameson based on the geographer Kevin Lynch’s notion of cognitive maps of landscapes and Louis Althusser’s notion of ideology) did not yet exist, Jameson argued that technology had a special relation to this yet unimagined form. In particular, he suggested,

our faulty representations of some immense communicational and computer network are themselves but a distorted figuration of something even deeper, namely, the whole world system of a present-day multinational capitalism. The technology of contemporary society [...] seems to offer some privileged representational shorthand for grasping a network of power and control even more difficult for our minds and imaginations to grasp: the whole new decentered global network of the third stage of capital itself. (38)

The technology of contemporary society—which physically embodied a network through neat nodes and connections—offered an outline, an example, of how power (literally) flows.

If for Jameson and Granovetter, maps and networks once more connected the macro- and micro-level, the societal and the individual, for others, most influentially Gilles Deleuze and Félix Guattari, maps were central because they frustrated transcendental and totalizing discourses. Taking up the figure of the rhizome—an immanent root structure that emphasizes connection, heterogeneity, and multiplicity—they argued that the rhizome was a map, not a tracing. A map, they argued,

does not reproduce an unconscious closed in upon itself; it constructs the unconscious. It fosters connections between fields, the removal of blockages on bodies without organs, the maximum opening of bodies without organs onto a plane of consistency. [...] The map is open and connectable in all of its dimensions [...]. It can be torn, reversed, adapted to any kind of mounting, reworked by an individual, group, or social formation. [...] The map has to do with performance [...]. (12)

The map was not a representation, but rather a dynamic performance. It was open; it fostered connections and true multiplicity. Drawing in part from Deleuze

and Guattari, Bruno Latour has argued that the network is a concept that helps us treat actors “not as intermediaries, but as mediators, they render the movement of the social visible to the reader” (128). Irrespective of political and intellectual differences, theorists thus posited maps—however defined—as key to empowering agents by making visible the invisible.

This promise to render visible seemingly invisible social and physical movements has grounded current predominance of networks as a theoretical tool. The maps Granovetter outlined have blossomed into dynamic representations used by corporations, researchers, and ordinary individuals to map almost everything, from friendship to contagious diseases. Affect theory, which grapples with the effects of unconscious bodily reactions, uses the language of networks—of intensities, transductions, and connections—to conceptualize that which defies conceptualization: affects which lie both below and beyond individuals, but that enable communication between them.¹ The Internet is allegedly a rhizome. Interfaces and apps, from Google Maps to Facebook’s Graph View to Twitter Analytics, offer us ways to trace the impact and spread of local connections. These acts of mapping, which allow us to track who we are friends with and who follow us, as well as to generate paths to navigate physical and virtual locations, are fundamentally empowering, we are told over and over again. We are all now ‘producers’ working actively to shape our media, not merely consume it. Rather than simply watch the news, we can click and change the trajectory of world events, from Darfur to the U.S. elections.

This logic of empowerment is embedded into the very logic of network analysis. As Mung Chiang argues in *Networked Life: 20 Questions and Answers*, an engineering textbook that serves as the basis for his popular Coursera massive open online course (MOOC) of the same name, networks allegedly operate best when nodes operate selfishly. Describing Distributed Power Control (DPC), the algorithm that adjusts power among mobile phones in a given cell, Chiang argues that it reveals

a recurring theme in this book. We will see in almost every chapter that individual’s behaviors driven by self-interest can often aggregate into a fair and efficient state globally across all users, especially when there are proper feedback signals. In contrast, either a centralized control or purely random individual actions would have imposed significant downsides. (8)

Here, feedback, although central to modulation and optimization, is curiously mentioned as a qualifying condition, rather than being the main point. As well, interference is described as a “negative externality,” as a factor that reveals that your happiness or success depends on another’s action (4).² Thus constitutive relations are deliberately rendered secondary and/or accidental so that self-interested actions can be portrayed as central and determining.

¹ For more on affects as networks, see Patricia Clough; Brian Massumi; Sylvan Tomkins.

² This notion of cellular behavior as creating global complex and efficient actions, of course, has a long history, stemming at least from John von Neumann’s and Arthur W. Burks’s early work on cellular automata.

More critically, networks have been deployed across various fields to understand new power structures and new modes of individual and collective behavior in a society in which, as Margaret Thatcher infamously declared, “there is no society” (“AIDS, Education”). As both Alexander Galloway and Tiziana Terranova have argued, control exists in and through seemingly unhierarchical network structures. Galloway and Terranova posit a global “network culture,” immanent to global capitalism, in which resistance is generated from within either by hypertrophy or through the creation of common affects to traverse the network. Bruno Latour similarly argues that to do actor-network theory (ANT), one must become an ANT: “a blind, myopic, workaholic, trail-sniffing, and collective traveler” (9).

Galloway’s, Latour’s, and Terranova’s interventions have been key—and Terranova’s move towards understanding networks through their modes of circulation opens up new possibilities for deploying networks.³ However, all this mapping has hardly solved the difficulties posed by globalization and late capitalism. If anything, it has accelerated them: from global financial crises to Facebook disasters. We are now in a different and perhaps historically unique situation: we are now forever mapping, forever performing—and so, we are told, forever empowered—and yet no less able to foresee and intervene decisively into the world we live in. Precarity, however liberating, is the dominant network condition.

Mapping follows and amplifies networks, rather than resolves them, making our experience of the present, as Lauren Berlant has argued, an impasse in which we drive through a never ending cul-de-sac. Maps may allow us to move from the close up to the overview—to see patterns and to move between scales unlike the confusion that supposedly marked postmodernism with its emblematic pastiche—but we seem to be always zooming in and out and never changing. Further, the performance of mapping—even as a move to deterritorialize, to open up, to add multiplicities, etc.—drives capitalism. As Ien Ang has argued, capitalism thrives on uncertainty and multiplicity. Even further, we have become so dependent on our mapping technologies that we seem to be incapable of acting without them. That is, if a disconnect between authentic personal experience and the truth of this experience existed, as Jameson argued, we now seem to automatically trust systemic representations of the truth rather than our own personal experience. For instance, consider the trust placed in Google Maps. Although, as Lisa Parks has argued, they offer us images that are really a pastiche of old and often incorrect images (and thus a realist compounding of postmodern representation), Google Maps have become a default for route planning. To begin to rethink these precepts, we need to address once again the “problem” that the mapping of networks allegedly solves and how it solves them. As Latour and Thatcher make clear—and as Jameson, Granovetter, and Beck implicitly argue—the goal is to reassemble the social by focusing on the actions of individual agents as individual agents, rather than as part of mass society or community. By using individuals as

³ Terranova moves us away from understanding networks, such as the Internet, in terms of infrastructure, towards flows of interactions. By doing so, she argues for the importance of affective relations and for the need to create common passions that move across the informational milieu.

base units, networks offer a resolution that implicitly erases, or at the very least downplays, the role of communities. They respond to and accelerate the failure of communities to render meaningful the lives of individuals. At the same time, however, networks also reveal a new imagining of collectivity: the network itself, as an imagined entity.

Networks of YOUs

Networks are imagined. The force of networks—their current ubiquity and popularity—stems in part from how they figure connections and flows that both link and breach the personal and the collective, the political and the technological, the biological and the machinic, the theoretical and the empirical.

This notion of “imagined networks” draws from and revises Benedict Anderson’s influential and controversial assertion in *Imagined Communities: Reflections on the Origin and Spread of Nationalism* that nations are “imagined political communit[ies]” (6). They are imagined, Anderson argues, “because the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion” (6). They are communities because, regardless of actual disparities, they are imagined as a “horizontal comradeship” (7). In making this argument, Anderson stresses the importance of print capitalism to the rise of nationalism, most particularly of newspapers which, due to their regularly planned obsolescence, create an “extraordinary mass ceremony” (35). He posits that, engaged in reading a newspaper in the privacy of her own home, “each communicant is well aware that the ceremony he performs is being replicated simultaneously by thousands (or millions) of others of whose existence he is confident, yet of whose identity he has not the slightest notion” (35). The imagined community is produced through actions imagined as synchronous, which link the individual to an anonymous collective. This imagining transforms multiple “Is” into a “we” that moves together chronologically.

This process weakens with postmodernism: the inability of individuals to grasp their positions in the world reveals the waning of the power of “imagined communities.” This decline would seem to have accelerated in the age of neoliberalism, in which, as Thatcher has argued, “there is no society” and “there is no public money” (“Aids, Education”; “Speech”). The dramatic transformation and closing of print newspapers would seem to buttress this argument, with the current crisis in print publications making clear that we can no longer be certain of these extraordinary mass ceremonies (if we ever could). However, networks are not diametrically opposed to communities: they arguably serve a similar purpose.

Networks are so compelling because they are imagined as both more and less than communities. Networks are imagined as *glocal* collectives that create seemingly direct, traceable trajectories between the local and the global, the social-historical and the psychical, the collective and the individual, as well as the technical and the social. As I will elaborate upon later, these *glocal* collectives are a series of yous rather than a collective we. New media relentlessly emphasize the you: *You-*

Tube, You as *Time Magazine*'s Person of the Year (Grossman). "You," crucially, is both singular and plural. In its plural mode, though, it still addresses individuals as individuals. In this sense, networks are very different from communities, which create a new identity, a "we," from what is held in common (even if, as Maurice Blanchot has argued, that which we hold in common is our own incommensurability and finitude). In a network, when a "we" or mass simultaneous access happens, the network fails: from simultaneous hits on a website to synchronous electricity demand, from popular fakesters to flashmobs, increasingly, the communal (both technical and nontechnical) brings down network/spaces.

As I have argued elsewhere, these imagined networks depend not on simultaneous mass ceremonies, but rather on asynchronous events that perpetuate through, that thrive on, crisis ("Crisis"). Rather than enabling a "homogeneous empty time" (Anderson 35)—a time that buttresses notions of steady progress—networks produce a series of crises or "nows" that create bubbles in time. In these constantly updating bubbles, the new quickly ages and the old is constantly rediscovered as new. Hence network time is not conducive to imagining a collective entity traveling together through time, but to envisioning a series of individuals that respond in their own time to singular yet connected events. The temporality of networks, however, is even stranger than this bubbling repetition, in which information becomes undead.⁴ The strangest—and the most powerful—thing about networks is that, by spatializing the temporal, they are both projection and actually existing entity; theory and fact.

Networks: Projected and Existing

Networks are odd entities: they are imagined as both technical projection and naturally occurring phenomena. Modern networks stem from structures, such as electrical grids and highway systems, deliberately built to resemble nets. Remarkably, though, networks are both constructed technical structures and empirically discovered phenomena. Systems biology, for instance, presumes the existence of networks in animals, from the genetic to the multi-cellular, which are discovered rather than simply modeled (see fig. 2). Similarly, ecology conceptualizes food webs and less lethal animal interactions—or more precisely the potentiality of these interactions—as networks. This insistence on networks as actually existing empirical entities happens even as network analysis itself is framed as an abstraction that *replaces* real world events with a reductive, almost "comical," mathematical model (Watts 42). Networks are thus both theoretical diagram—models, based on past observations, used to predict future interactions—and things that exist out there. Indeed, they compromise the distinction between the constructed and the natural, the theoretical and the empirical. Like Borges' infamous map, the map has become the territory.

⁴ For more on information as undead, see Chun, "The Enduring Ephemeral, or the Future Is a Memory."

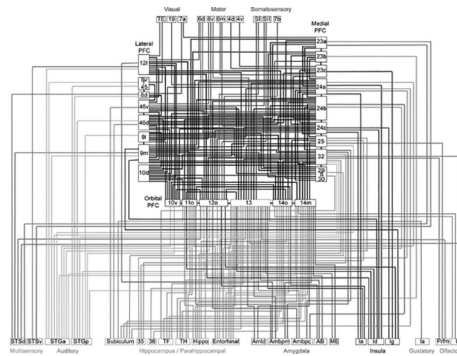


Fig. 2. Statistical Systems Representation of the Neuroanatomy of the Frontal Networks in the Macaque. Bruno B. Averbeck and Moonsang Seo, “The Statistical Neuroanatomy of Frontal Networks in the Macaque,” *PLoS Computational Biology* 4.4 (2008): n. pag., 4 Apr. 2008, Web, 9 Mar. 2014, fig. 1.

Further, networks spawn networks: they are not only useful to diagnose contagion, they are themselves contagious. According to network scientist Duncan Watts, in order for the new science of networks to succeed, it “must become [...] a manifestation of its own subject matter, a network of scientists collectively solving problems that cannot be solved by any single individual or even any single discipline” (29). It takes a network to analyze a network; networks generate networks (they are perhaps as self-generating as capital itself, hence their importance to mapping late capitalist markets). Networks make porous the boundaries between the many disciplines that employ networks, from economics to media studies, from political science to biology. Every discipline, it seems, has discovered networks and in so doing, found each other and a new universal structure. The study of networks thus oddly mirrors its subject, making it even more difficult to separate network analysis from networks themselves.

Clearly, the concept of “networks” is not consistent across or within disciplines, although “networks” presume the existence of connections and agents (edges and nodes). Networks, drawn from communications systems, basically assume that messages need to flow between nodes, so that networks are “alive.” Network theory differs from graph theory in its presumption of dynamic interactions, which can redraw network structures. Indeed, network science, even as it relies on “comical” and often static representations, tries to capture and understand events, such as catastrophic power outages and viral outbreaks.

Critical uses of networks often try to separate the network and network maps. Latour insists that networks are “an expression to check how much energy, movement, and specificity our own reports are able to capture. [...] It is a tool to help describe something, not what is described” (131). Terranova similarly describes networks such as the Internet not simply in terms of network infrastructure, but also in terms of information that constantly flows through networks, as do computer scientists such as Jon Kleinberg. Anna Munster, most recently in her analysis in *The Aesthetics of Networks*, insists that networks are at least two things: infrastructure

map and a Jamesian mosaic. Emphasizing the latter, Munster argues that the pulsing of energy and affect—the network experience—cannot be reduced to nodes and edges, for networks are about edging, about pulsations that frustrate neat separations and create sticky connections between the molecular and the molar.

Understanding the difference between the experience of flows and maps is important, and understanding the generative nature of contact is central to reimagining networks. However, the double-faced nature of networks, as both trace and flow, is what makes networks so compelling. Networks spatialize the temporal by tracing and projecting: by being both too early and too late. The UNIX command “tracert,” which allegedly offers a trace of our data packets, illustrates this point nicely. To work, the tracert tool sends out a series of packets with increasing TTL (Time to Live) values, starting with one “hop.” Whenever the packet “dies,” the router at which the packet expires sends a message back to the originating machine. However, since packets can take different routes through the network, this “trace” is not entirely reliable. Through timed TTL settings, tracert offers us a pastiche of packets to map what allegedly has been, is, and will be. Networks also spatialize the temporal by imagining and creating connections, by cutting up amorphous space into lines. To use another technical example, consider how cell phones work. At first, the idea that cell phones comprise a network is strange, since all transmitters and receivers send their signals into the air. Technically speaking, a cell is not a single phone, but rather the area covered by one cell phone tower. To create networks, cell phone networks such as CDMA use different frequency bands and individuating codes to “create” connections: to encode and decode signals between a single transmitter and the receiving tower. To do so, they also classify interference, which is generated by the very mechanisms that transmit and receive, as well as by the air that is allegedly the medium, as external. This makes possible neat network maps in which nodes connect directly to other nodes, rather than diffusely influencing everything in their vicinity.

These technical examples are important, not because technical understandings are a base for other ones, but rather because they can help elucidate the odd double-edged (or edging) power of networks. To repeat Jameson’s argument, “the technology of contemporary society [...] seems to offer some privileged representational shorthand for grasping a network of power and control even more difficult for our minds and imaginations to grasp: the whole new decentered global network of the third stage of capital itself” (38). The technical itself imagines networks: it cuts continuous space and time into slices of connectivity. To do so, it relies on—it thrives on—repetition. Signals are constantly repeated in order to be transmitted. Signals that are not repeated or repeatable “die.” Networks, for all their pre-occupation with singular or virtual events that fundamentally alter network maps, spatialize the temporal by rendering constant repetition—or the possibility of repetition—into lines. To be able to repeat then is the basis of connection, or the basis for the elucidation/imagining of connection. To be able to repeat is what links the machinic and the human.

Reciprocating Friendship

The power of technical images of networks and their transformative and predictive power is clear in social networking sites, which reduce friendships into matrices of relation, based on nodes and connections. These sites, like cellular networks, transform broadcast signals into seemingly neat, traceable, and reciprocal lines. They transform friendship into a definable and reciprocal connection between two people, fundamentally altering the meaning and purpose of friendship. Friendship historically has been difficult to measure and, indeed, has even been considered unmeasurable. Aristotle, it is famously alleged, declared, “My friend, there are no friends” (qtd. in Derrida 177). As Derrida has argued, friendship is a fundamentally unreciprocal relationship that begins with the act of loving another with no guarantee that one will be loved in return (9). Friendship in this sense is “broadcast.” Traditionally, sociological studies of friendship have been difficult because of this unreciprocal nature, and due to widely varying notions of friendship. In response, sociologists have argued for a much broader understanding of friendship than colloquially used (Allan). More current studies treat friendship as a directional link, which makes things trackable, but more computationally intense (Fowler and Christakis). In many ways, social networking sites are sociologists’ dreams come true because they make friendship a weaker yet bidirectional tie: something that can be verified and tracked.

This verification and tracking also fundamentally changes the nature of friendship, by automating gestures that establish and sustain friendship, by using various acts as a test of the strength of a tie. As Taina Bucher’s work nicely reveals, Facebook.com’s Edgerank algorithm tries to determine the strength of edges (connections) in order to determine which stories appear on one’s newsfeed. Given that many Facebook.com users have thousands of friends and given that Facebook.com is interested in targeting advertising and understanding relations between users more generally in order to predict future preferences and actions, Facebook.com does not treat all friendships as equal. To determine the strength of ties—and thus what will be visible or invisible—it assigns weights to different interactions: for instance, a Facebook.com chat is a sign of a close friendship. As Bucher states, “there is a certain circular logic embedded in the algorithm. In order for you to Like or Comment on a friend’s photo or status update, they have to be visible to you in the first place. Any time a user interacts with an Edge, it increases his or her affinity towards the Edge-creator” (1176).

This remarkable transformation of friendship relies on another equally remarkable transformation of the Internet from a space of allegedly of anonymity to one of Real Names, central to the emergence of Big Data and the Internet itself as market. For these algorithms to work, nodes need to be reliable: these systems need to be able to trust that the users are telling the truth regarding their connections and that the users are the same: that logins represent distinct personalities.

Intriguingly, though, as much as it encapsulates a logic to reduce the world to the map, networks thrive by creating leaks: interference, contacts that impair neat connections. Networks generate contact and interactions by compromising, by making porous, barriers, so that nodes cannot be so easily separated and connections so

neatly tracked. That is, new media and the logic of mapping are driven by what they seek to contain: the leak. What, after all, is a social media friend, if not a leak?

Friendster: or What Lies Beyond

Online friends, initially posed as a way to make the Internet safe, have done anything but: since the rise of Web 2.0, we have seen an explosion in cyberbullying and Facebook.com disasters, in which jobs are lost or college admissions denied on the basis of seemingly private posts. These disasters reveal the lie behind the odd conflation of transparency and security, which has driven the call for Real Names on the Internet, mainly by various corporations who benefit from this “securing” of user identities. Randi Zuckerberg, marketing director of Facebook.com, argued in 2011 that, for the sake of safety, “anonymity on the Internet has to go away” (Bosker, “Facebook’s Randi Zuckerberg”). Eric Schmidt, CEO of Google, made a similar argument in 2010, stating that “in a world of asynchronous threats, it is too dangerous for there not to be some way to identify you” (Bosker, “Eric Schmidt on Privacy”). These arguments were not new or specific to Web 2.0: ever since the Internet emerged as a mass medium in the mid-nineties, corporations have argued that securing identity is crucial to securing trust (Bosker, “Facebook’s Randi Zuckerberg”; Bynum).

This linking of trust and security has been challenged by many scholars, in particular by Helen Nissenbaum. Nissenbaum, writing in 2001, noted that although security is central to activities such as e-commerce and banking, it

no more achieves trust and trustworthiness online—in their full-blown senses—than prison bars, surveillance cameras, airport X-ray conveyor belts, body frisks, and padlocks, could achieve offline. This is so because the very ends envisioned by the proponents of security and e-commerce are contrary to core meanings and mechanisms of trust. (121)

Trust, she insists, is a far richer concept that entails a willingness to be vulnerable. As she also points out, the reduction of trust to security assumes that danger stems from outsiders, rather than from “sanctioned, established, powerful individuals and organizations” (128).

The kind of securing enabled by online friends is fundamentally a leaking one, as the history of Friendster.com, the site that popularized online friending, makes clear. In the early years of this century, Friendster.com made the notion of an online friend mainstream within the United States. Users of Friendster.com created a profile page, within which were spaces for testimonials and for a listing of ones’ friends. Friendster.com, conceived of as a dating site, was launched in beta mode in 2002 and was initially popular with three subgroups: attendees of Burning Man, gay men, and bloggers, all mainly living in San Francisco and New York. As danah boyd (“None of This Is Real” 140) has revealed, it quickly spread to other subgroups such as goths, ravers, and hipsters, and it started garnering main stream media attention by mid-2003. By October 2003, Friendster.com had more than 3.3 million accounts.

The concept driving Friendster.com was simple: to compete with sites such as Match.com, it relied on semi-public declarations and testimonials by friends, rather than on extensive and complex surveys. It thus sought to leverage already existing connections by creating a site with a larger user base than those actively seeking romantic connections. These “friends” were not only an important source of connections (a virtual instantiation of matchmaking, presumably more effective than its offline variant because it exposed more connections between friends than possible through purposeful matchmaking), they were also potential users of the site. The site, that is, thrived by making leaky the already leaky boundary between those “looking”/open and those “taken”/closed, while also seeming to respect this boundary, by asking people to explicitly state their relationship status. Users were not offered a universal view of the site, nor access to all profiles, but allowed to navigate an ego-centric network limited to profiles within four degrees of separation (friends of friends of friends of friends). This four degrees limit was inspired by the sociologist Stanley Milgram’s classic experiment, in which he (allegedly) showed that most people are connected within six degrees of separation. To maintain its legitimacy as a dating site, Friendster.com depended on authenticity and the authentication of one’s identity and character by one’s friends.

Friendster.com, however, soon fell out of favor in the United States. By 2004, the majority of users were from Singapore, Malaysia, and the Philippines. Danah Boyd (“None of This Is Real”) amongst others has linked the demise of Friendster.com to the “Fakester Genocide,” a concerted effort by the Friendster.com management to delete the accounts of fakesters: people who created fictional accounts of things (such as Burning Man) or people (such as Angelina Jolie). Many of these fakesters were very popular, but their popularity threatened to undermine the driving theoretical premise of Friendster.com. According to founder Jonathan Abrams, “[f]ake profiles really defeats [sic] the whole point of Friendster, [which is] to see how you’re connected to people through your friends” (qtd. in Mieszkowski). By linking to a popular fakester—by joining a community of fans—a user quickly became connected to many people who were not connected to him/her via a real friend. Thus, because these fakesters were so promiscuous, this reasoning went, one could not accurately know in which way one was connected to others, and thus one’s connections could not be properly authenticated. (This ignored the fact that mutual interest in a fakester could serve the same purpose as being a friend of a friend of a friend of a friend; it also revealed that authentication was valued over commonality.)

Besides undermining the theory driving the site, the fakester phenomenon once again revealed the ways in which the communal can be a network weapon: it seriously challenged Friendster.com’s technology because with so many connections, the site ground to a halt. Deleting fakester accounts, though, led to an exodus not only of those violating the site’s conditions of use, but also those sympathetic to the fakesters and those disconcerted with the heavy handed tactics of the Friendster.com management. Still others left because others had: without constant activity on testimonial boards, the site became boring and profiles ‘frozen’ relics of past conversations (Boyd and Heer). The mass exodus revealed what the Friendster.com management did not understand about their site’s popularity:

the fact that online, to be is to be updated. Constant updates by others and one-self are key to maintaining an online presence and existence. As Facebook.com's newsfeed and lifestream have made clear, in general, sharing surveillance with users not only makes users more comfortable with it, it also makes them engage more with the site. The constantly changing newsfeed keeps the site "alive"—the publicization of users' actions keeps SNSs from appearing frozen. Through the creation of leaks, content is generated.

Regardless of its demise as a dating site, Friendster.com's legacy is its popularization of a bizarre notion of friendship, which assumes that friendship is reciprocal and verifiable, that is, a matter of mutual agreement. As boyd notes, this impoverished notion of friendship—which reduces friendship to a binary relation and thus flattens the differences between various kinds of relationship—creates all kinds of dilemmas ("Friendster and Publicly" 1280). Most particularly, it compromises the separation of work from leisure, family from friend. Yet these boundary crossings and their attendant consequences were not merely an unfortunate side effect; they were arguably the point. As boyd herself notes, the purpose of a Friendster.com friend was to confuse this separation. Friendster.com profoundly and deliberately made leaky the boundaries between public and private: it depended on "the public exhibition of private relationships in order to allow for new private interactions" (1282). These publicly exhibited private interactions complicate traditional understandings of the public sphere. The site's stretching of the notion of a friend was key to its logic: to provide the best authentication and the most variety, it had to move beyond established notions of friendship. This compromising of the boundary between work and leisure was also its business model: through acts of friending, writing on walls, etc., content was freely provided for this site and the connections between users, which later sites would monetize, were revealed. Friending was a central part of what Terranova has called "free labor" (73-97).

This constant friending and the leaks it generates has become key to value online, which is generated by constant repetition. Information is valuable, not when and if it is new, but rather through its modes of repetition: if, once, Walter Benjamin, comparing the times of the story and of the news, could declare, "the value of information does not survive the moment in which it was new. It lives only at that moment; it has to surrender to it completely and explain itself to it without losing any time" (90), now, newness alone does not determine value. In 2012, news organizations charged for old information. *The New York Times* online, for example, offered a certain number of current articles for free, but then charges for its archive; similarly, popular mass media shows such as *This American Life* offered only this week's podcast for free. We pay for information we miss (if we do), either because we want to see it again or because we missed it the first time, our missing registered by the many references to it (consider, in this light, all the YouTube.com videos referencing *Two Girls, One Cup* after that video was removed). Repetition produces value; repeated references and likes by friends and strangers mark something as valuable, as worth visiting, as worth downloading. Information—some event, incident, media object, etc.—becomes valuable when it moves from a singularly noted event to one that elicits mass response. This is why sociological analyses of sites such as Twitter.com take as their base units retweets, likes, and other repetitive acts.

As the issue of repetition makes clear, value is not generated by one “you,” but rather a plethora of YOUS: by the very interconnections between the various yous. You, again, is central to the operation of networks because it can refer to both individuals and groups. In its plural form, however, it still refers to persons as individuals, rather than creating another communal subject, a “we,” from a set of “mes.” In a network, the nodes are still theoretically distinct, however aggregated. The value of this YOUS is related to and differs from other notions of networked value, which emphasize the importance of crowd sourcing, peer-to-peer production, and the collaborative nature of knowledge, concepts that have been developed insightfully by scholars such as Yochai Benkler, Pierre Lévy, and Paolo Virno. YOUS value emerges through the mainly involuntary effects of user actions, from searches to mouseclicks, from likes to posts. It is also the product of a certain politics of storage: the richness of network data comes from the fact that every action online is increasingly traced and linked to others, so affiliation networks can be built. That is, if our world is data rich, it is not simply because we provide content for free, but rather because every interaction is made to leave a trace, which is then incorporated with other traces and used to understand you, where you is always both singular and plural. Whether any particular “you” is aware of it or not, as “Yous” we constitute a latent resource for political mobilization, but also for corporate commodification. Facebook.com, Amazon.com, and Google.com, amongst other sites, mine our data not simply to identify us as unique users, but also, and most importantly, to find out how our likes, purchases, and searches coincide with those of others. They analyze and collect our data in ways that suspend the difference between the individual and collective statistical body, even as they respect and insist on this difference by providing us with individual logins and pages optimized for us. This is why the notion of a portal is so compelling: enclosing us within spaces is the easiest way to analyze and to track these connections.

This intersection of data and methods designed to identify both individuals and larger trends suspends the traditional separation between the two archival logics to incorporate the body that Allan Sekula influentially theorized in relation to the production of photographic evidence. The first, derived from the work of criminologist Alphonse Bertillon, was focused on identifying the individual, on inscribing the body in the archive. The other, derived from the work of the eugenicist Sir Francis Galton, sought to identify the hidden type driving the body and thus to embed the archive in the photograph. Currently, these approaches have become inseparable at the level of data capture and storage. The same process captures the data necessary to identify individuals as singular and to identify their relation to certain groups. Amazon.com, for instance, tracks individual purchases not only to create a record of us (a digital fingerprint), but also so that it can connect our actions with others in order to make suggestions for further purchases, that is, so it can predict and encourage future behavior that conforms to, and that confirms and optimizes, statistical network analyses.

These algorithms and this mining assume that the data being gathered is reliable, that our online actions are as indexical as our body measurements and mug shots. To help ensure this, websites create login structures that link a person to an

ID. They also benefit from the ways in which our friends—their likes, their posts, their tags, their retweets (or via Gmail, their email messages to us)—authenticate us and enmesh us more thoroughly into these networks. Their actions also help target messages directed blindly towards us.

But the network is not simply the map, and the leakiness of new media is created in part because we still want to see the private and public as separate. That is, for a leak to exist, boundaries or walls need to be already in place; connections need to be imagined as straight lines between entities. This imagining renders invisible the ways in which the Internet and other networks work via constant and continuous public sendings that are sometimes received—or are often received, but promiscuously by devices that cannot or will not read them. Your wireless network card receives all packets in its vicinity and then deletes those not directly addressed to it: neat network diagrams rely on active erasure. To intervene into the network, into the series of YOUS that is constantly created belatedly and too early, we need to intervene at the level of individual repetition, at the level of the habitual.

Connecting Habits

As I argue in more detail elsewhere, network maps are possible due to habits: due to habitual repetitions that make it possible to represent and anticipate connections.⁵ Friends are “connections” because of repeated actions between connections—and the strength of ties is gauged by repeated actions. Habits, as Gilles Deleuze has argued, make series and seriality compositable into a generic relation. In addition to making connections mappable, habits are arguably what culture can be in the era of neoliberalism. Like networks, they offer a finer resolution and individuation: individuals “have” habits (and, indeed, habits are what *individuals* have). But also, through seemingly individual habits, collective actions emerge, for habits are never singular. Rather, as William James has argued, habit is “the enormous fly-wheel of society, its most precious conservative agent. It alone is what keeps us all within the bounds of ordinance, and saves the children of fortune from the envious uprisings of the poor” (121). Habits are humanly-made nature: they are practices acquired through time, which are seemingly forgotten as they move from the voluntary to the involuntary, the outer to the inner. As they do so, they penetrate and define a person: a habit was traditionally an outer garment, such as a nun’s habit. More darkly, they take on a life of their own, independent of an individual’s will (as in the case of drug habits, for example).

Habits are themselves leaky: they muddy the boundary between nature and culture, individuals and society. Habits, as Catherine Malabou has outlined in her introduction to Félix Ravaisson’s *Of Habit*, are usually understood in two ways: first, as mechanical repetition that erodes what is distinctively human; second, as fundamental to life, to how we persist. Although a full explanation of Ravaisson’s text is outside the parameters of this text, Ravaisson, who is firmly in

⁵ See Chun, *Habitual New Media*. For an overview of the argument, visit <http://vimeo.com/78287998>.

the second camp, stresses that habit is not instinct; it is not a natural, automatic response. Rather, habit signals a change in disposition—and, in the age of new media, indeed often indicates a disposition towards change—in a being that does not change, even as it does change. Habit, which exists beneath personality and consciousness, takes a change (a stimulus or reaction) from the outside and makes that change more and more one generated from the inside, thus turning receptivity into agency and enabling the organism to create its own reward. Habit occurs when understanding becomes so strong that it is no longer reflected, when an action is so autonomous that it escapes will or consciousness, or when a being's repeated actions assuage its own needs. Habit, Ravaillon stresses, is intelligence without will or consciousness.

With new media, the acquisition and change of habit has accelerated. Neoliberal networks thrive not only on habits, but also on constant upgrades to habits: new connections, new actions to be traced. We are now arguably habituated to change itself: to the anticipation and embrace of the new, where the new is not a radical change, but rather the update, that is, the endless versions and revisions that dominate the logic and consumption of computer technology (Web 2.0, etc.). As the recent debacle around Windows 8 makes clear, the kind of change expected and embraced by users is not radical change. Windows 8 launched in 2012 amid much fanfare: it was to revive Microsoft's fortunes by helping it adapt to a changing field of personal devices, in particular the tablet. By focusing on touch-centric actions and by extensively changing its operating system (it even lost the start menu), it led to great and general confusion, and Microsoft had to relaunch a "newer-older" version of Windows 8 one year later. This example makes clear the paradoxes of new media: Microsoft is allegedly losing market share because it is viewed as old and conservative. However, by doing something radically new, it does even worse.

This example also reveals that, if new media are new, they are new in the more obscure concept of new as refreshing rather than as original. 'New' not only means something that is radically different and emerging for the first time, it also means: "coming as a resumption or repetition of some previous act or thing; starting afresh, resurgent" ("New," def. 3a); "something restored after demolition, decay, disappearance" ("New," def. 3b). As the modernist adage "make it new" makes clear, "new" means taking what already exists and making it different or resurgent. In this sense, new media habituates us to the acquisition of "new" habits by habituating us to the update. It habituates us to the update as a method of coping, of trying to catch up.

But habits, so central to Big Data, can also open new ways of understanding collectivities and social spaces. So, to conclude, I'd like to consider the ways in which habits of friending opened up—made leaky—other spaces. A fascinating corollary to Friendster.com was the emergence of flash mobs, which also emerged in 2003 in New York City. In these mobs, a group of mainly youngish hipsters were invited to take part in a "MOB, the project that creates an inexplicable mob of people in New York City for ten minutes or less" (Wasik). The first flash mob converged on the rug department of a Macy's department store; the fourth overran a Soho shoe store. As mass acts of benign communal action, flash mobs were

one's friends lists come to life: ephemeral interventions into public spaces, enacted by familiar strangers; latent publics activated (Shmueli).

Intriguingly, although these mobs were deliberately constructed to be as banal as possible (they focused around actions such as shopping for shoes) and although they were placed in the "safest" of public spaces (the third New York flash mob moved from Grand Central Station to the lobby of the Hyatt Hotel because of the presence of National Guardsmen with machine guns), they were treated with great suspicion. As the then anonymous New York organizer "Bill" noted, "there seems to be something inherently political about an inexplicable mob" (qtd. in Kahney). Indeed, as Jacques Rancière has argued, the gathering of a mob, speaking a language not overtly political or entirely understandable in the words and gestures of official politics, recalls the traditional "noisy" claiming of rights. The fact that these flash mobs were deliberately non-political and couched in terms of play and yet so disruptive—coupled with the fact that they would later mutate into both highly orchestrated commercial public relations events and "criminal" swarms—also exemplifies the dangers of occupying and opening this liquid space between public and private, dangers and possibilities also exemplified by the opening of the "friend." As such, these flash mobs are a symbol of all examples of *YOUS* value, regardless of how the effort to capture *YOUS* value is enacted—whether purely expressively, or commercially, or politically.

Flash mobs reveal the ways in which habits of connecting—seemingly limited to virtual environments and to user tracking—can leak in unexpected ways that allow us to inhabit habits and spaces differently. Rather than being satisfied with representations of connections, such as those provided by Facebook.com and friendster.com, users create promiscuous zones of contact—like Fakesters—that undermine the notion of individuals as autonomous nodes. In addition to considering the political possibilities opened and shut down through friending, we need to embrace other modes of relation that explore and thrive on the unreciprocal—that is, that do not demand that ties between agents be explicitly acknowledged as bi-directional. Twitter.com, a remarkably functioning public site, is based on often unreciprocated modes of following and being followed. Further, we need to consider how involuntary repeated acts—machinic habits—such as spamming might be key to embracing the possibilities for something like collective action in an era in which community and larger social structures have allegedly dissolved.

Coda: Spam, or Another Way to Say I Love You

Recently, I fell victim to a phishing attack. The term "fell victim" is a little strong, for as soon as I clicked on the link, I knew something was wrong, and, had I not been distracted by two small children and using my iPhone at the time, I would never have made that mistake. This attack taught me what I should have already known: there is no innocent surfing online.

This attack, however, was brilliant: it was one of the most successful on Twitter.com to date. It consisted of a "private message," poorly typed and thus seemingly an urgent one sent in a rush, from a follower stating, "I can't believe this but there

are some real nasty things being said about you here gourl.kr/Ag9hlR.” I received this message from a former student, who also ran an important collaborative website, and I had just come back from a conference: the circumstances were perfect, even though the spelling errors and language should have signaled the falsity of this message (this student was far too professional to send such a message). This phishing attack did not just compromise my Twitter.com account; it also led to everyone following me on Twitter.com to be phished in turn, so it outed me as being naive and possibly paranoid.

Predictably, many folk contacted me directly, letting me know what I already knew—that I had been phished—and I had to amplify my public embarrassment by contacting everyone else and letting them know the “private message” I had sent them was anything but. This made me realize that I had been taking the wrong approach to social networking. Clearly, I should change my friending practices and only friend and follow people I hate.

There was, however, a surprising upside to this that made me decide not to do this. Given that I hardly ever tweet, this phishing attack allowed me to reach out to people who cared enough to skim over 140 character comments I might make. Spam, or phishing, became another way to say I love you.

One particular exchange made this point clear to me. A close colleague of mine received the phishing message from me and said she was honored to do so (I think she had also fallen victim to it). Lilly Irani, a brilliant graduate student I had met that summer, posted this in response: “@lnakamur Yeah, my first thought was “wendy chun thought of me!!” Then my heart sank a lot, then I realized it was spam. :)” In response, I posted: “@gleemie @lnakamur perhaps this is the upside of spam—contacting everyone with love for me.”

Although I was half-joking at the time, there is something to spam as love: this exchange led to my thinking through the relation between Povinelli’s discussion of the physical sores that mark contact in impoverished areas of Australia to virtual sores that are allegedly tied to “emerging” nations and markets. Both, that is, create “attitudes of interest and disinterest, anxiety and read, fault and innocence about certain lives, bodies and voices and in the process form and deform lives bodies and voices” (Povinelli 35).

This loving side of spam also helps us rethink the difference between spam and not-spam, human and inhuman. After all, what is the difference between our semi-automatic “happy birthday” postings on Facebook.com pages and emails, allegedly from our friends, asking us to buy drugs from dodgy Canadian pharmacies? Involuntary (or not entirely voluntary) messages from others remind us that we are somehow connected to them—that we are in their address book, that they care enough about us to put us at risk. This is how the latent value of our networks manifests itself to us. Also, as the founder of Slashdot, Rob Malda, noted, slashdotting a site often translates to making it inoperable: a hug from a mob is indistinguishable from a distributed denial of service attack (Mankelaw). Again, moments of synchronous “we,” of communal action, are intriguingly destructive to networks; *YOU* value has the power to undo itself.

These interactions remind us that freedom and friendship are experiences that deny subjectivity, as much as they make it possible. As an experience, they are not

contractual, but rather perilous efforts of which we do not know in advance where they will lead. As Jean Luc Nancy argues, freedom is an experience. It is “an attempt executed without reserve, given over to the peril of its own lack of foundation and security in this “object” of which it is not the subject but instead the passion, exposed like the pirate (peirates) who freely tries his luck on the high seas” (20). The Greek root for “pirate” is also the root for both peril and experience.

Friendship’s freedom comes without guarantees. Further, it is not a thing we possess, not something that anyone can own or grant another, even if it generates YOUS value that some can temporarily capture. It is a force that breaks bonds—a form of destruction that, Jean Luc Nancy argues, enables both friendship (habitation) and total destruction. Friendship as an experience is a moment of both terror and hope: a moment of hosting without meaning to and of being hostage to the other. It is a moment in which connections are made and broken—not once but over and over again, that is, if there is to be anything like friendship or freedom to begin with. To begin again with.

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