Reinterpreting networks of people as fluid for political purposes

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My presentation today is going to focus on two necessarily interrelated strands
of thought: the first being the ways in which networks have moved from not
only a means of describing the world, but also a representation of it; the second
being the ways in which this particular ontological stance enables or disables
certain types of agency from within networks, and different means of resistance
that focus on reinterpreting network infrastructure.

first part

The word network has a long history of its own, originally describing the lattices
and finery on clothing, and thus a strong connection to cloth and corporeality.
Yet the word today most often describes something highly abstract, and many of
the original meanings have been lost in regular discourse. *Network,* as a term
appropriated by computer science thought, has turned into a word that is both
highly specific and highly flexible. This mutability in the use of words by
computer scientists, as ably demonstrated by Phil Agre in his book *Computation
and Human Experience,* enables the extension of once limited terms to a wide
variety of phenomena. For the word network, this results in the expansion of a
word once used for clothing to be used to describe everything from the
propagation of viruses to the transmission of bits across copper or fiber optic
wires. Especially prominent today is the modification of the word "network" by
the word "social", thus extending the term even further into the space of human
communities.

Networks thus can refer to the materiality of both humans and data. Therefore viewing things as a network means we see things in terms of connections and links. And I do mean viewing, as network theory suggests a one-to-one correspondence between an abstract mathematical formalism and visual representation. In social networks this is the commonly-seen jumbled mess of dots and lines with the well-known legend: dots refer to people, known as nodes, and lines refer to connections between them, known as edges. The use of the language of nodes and edges allows you to use mathematical operations from graph theory to perform computations on these networks, creating numbers that are meant to suggest degrees of "connectedness" or "centrality". These numbers, computations, and visual representations enable a type of slippage between vastly different ways of considering the world.

If we delve a bit into this view of networks a number of questions immediately arise. What are the conditions by which the network is instantiated or *individuated,* to use the term of Alexander Galloway and Eugene Thacker in their recent book *The Exploit: A Theory of Networks*? Who gets to decide *when* a particular network is individuated? What are the means of controlling access to the network, the protocol that individual nodes have to follow to become part of the network? When someone creates a visual representation of the network, *who* is represented, *what* types of connections are represented, and to *when* is the representation supposed to refer? The general representational strategy of graph theory flattens difference within the network by re-inscribing fixed relations via the discourse of stable nodes and stable edges—thus the messiness of people and their connections becomes inscribed as stable people and stable relationships. This reconsideration, or concern about the representational strategies of networks and graph theory, would suggest a response that focuses less on the qualities of nodes and edges, and more on the topology or infrastructure of networks.

We do not have to see the network as representing a stable reality, however. If we look on the underside, into the spaces in which networks are less fixed and more fluid, networks can be an active agent in creating a particular view of

reality, an ontological device to suggest situated realities, rather than an inert visual and mathematical tool that waits to be filled with data. We can then stop using networks as a means of fixing what already exists but instead use them to craft certain ways of representing the world over others. Responses to the questions I just raised are then not merely parameters to be chosen within a particular software package, but rather differing ontological politics that have broader ethical, social, and political meaning.

This does not necessarily mean that our change of perspective has inherently emancipatory possibilities. We are still faced with choices about who, what, how, when, and why to represent. We are still faced with the problem that once we decide to represent a network, we are forever fixing, within that particular representation, one view of the world, and one that will privilege certain actors, people, and connections versus others. Indeed, this is one of the main critiques of actor-network theory, or ANT, within science and technology studies. ANT aims to flatten the ontological space between humans and non-humans by showing how both must be marshaled together in order to create a particular scientific fact or technological artefact. This combining of forces and abilities, and the need for the people and objects within the network to agree upon the means of exchange, sets up an inner/outer dichotomy that privileges actors *within* the network (what Ulises Mejias has termed "nodocentrism"). To join a network means to become standardized, to be subject to rules and protocols that might have been constructed and decided upon without your consideration. For Susan Leigh Star, in her well-known critique of ANT, this means that the "standardized network often involves the private suffering of those who are not standard—who must use the standardized network, but who are also non-members of the community of practice." Her critique, written over fifteen years ago, has been echoed recently by Thomas Berker who asks how we can look at suffering within these networks as the "uneven distribution of enabling and disabling effects" as well as the "uneven distribution of the ability to switch between networks". Suffering within networks occurs not only because of inability to move in and out of a network, but also because of an inability to create a network in the first place. To create a network would mean choosing the rules by which people and things become individuated, as well as choosing

the means by which people can join or leave the network.

What operational impact might these critiques have on the design and implementation of technological artefacts? I would like now to refer to a recent project that I developed, along with my collaborators Bruno Vianna, Luis Ayuso, and Monica Sanchez, as a response to these issues, with the caveat that other responses can be made and that our project undoubtedly does not address all of the concerns.

second part

The project, Fluid Nexus, is a mobile phone application designed to enable activists and relief workers to send messages and data amongst themselves independent of a centralized mobile phone network. The idea is to provide a means of communication between people when the centralized network has been shut down, either by the government during a time of unrest, or by nature due to a massive disaster. During such times the use of the centralized network for voice or SMS would not possible. Yet, if we can use the fact that people still must move about the world, then we can also consider how people might also carry data with them. This is related to ideas from computer science known as "sneaker nets" or the derogatory term "data mules". We could thus create fluid, temporary, ad-hoc networks (via short-range wireless technologies like Bluetooth or WiFi) that pass messages one person at a time, spreading out as a contagion and eventually reaching members of the group. This could allow surreptitious communication via daily activities.

Fluid Nexus relies on, yes, a fluid view of reality and of networks. It requires no representation of the network to function: it gets its strength from temporary links between people that disappear as soon as they are created. These ad-hoc connections do not necessarily have to correspond to real-life links between individuals; messages and data can transfer based on physical proximity instead of social relationship. People can therefore remain who they are without having to necessarily change their behavior to join the network. By displacing the stabilizing of the network, Fluid Nexus works to redistribute power over network

individuation and protocol to those often seen as the capital-O Other, providing a counter to centralized control of often-State-run infrastructure.

Fluid Nexus could of course be re-appropriated by the State for their own purposes, thereby reestablishing stabilized networks. However, we should not see the application as a kind of general solution, but rather a tactical move in a continual cat-and-mouse game. We have to regularly respond to moves of stabilization with counter-moves of fluidity and destabilization. The critiques of networks outlined earlier suggest a way of conceptualizing how discourse about networks directly transforms into questions of ontological politics that can consequently be mapped into operational questions of technology.

References omitted for brevity (in the version submitted to ISEA). More information about Fluid Nexus can be found at http://fluidnexus.net .