

Internet Sabotage: Toward a new theory of information and ethics

keywords: *sabotage, information ethics, Internet ethics, information theory, information topology, information constraint, knowledge, Internet, communication*

My PhD research examines how Internet sabotage creates meaning. From the economically productive nature of meaning, ethical questions then arise. Although Internet sabotage is not well understood or well recognized it can be found everywhere. I define Internet sabotage (or more broadly digital sabotage) as actions that reduce or preclude alternative outcomes of information. Reducing alternative outcomes typically requires privileged or insider access to information to operate. For example, it is only with knowledge of peer-to-peer file sharing protocols that an effective cyber assault can be mounted against media pirates. Ostensibly, actions like these disrupt or destroy the flow of information, but actually, by restricting information possibilities sabotage entrenches a single meaningful outcome. This makes intuitive sense—the censorial power of mass media similarly creates ideologies, facts, and common beliefs.

According to Shannon and Weaver's Mathematical Theory of Communication (MTC), communication can only occur when the receiver is moved from a state of disorder to order. This occurs when the receiver learns something new (from the created meaning), or to state the same thing, local entropy decreases. Laws of thermodynamics state that global entropy, unlike local entropy, can never decrease. Thus, without sabotage anything is possible, but entropy is maximal and effective communication is precluded.

Despite conventional wisdom about work and knowledge production, I will argue that meaning is socially produced through antagonisms rather than collaborations. The elastic push-pull of sabotage creates meaning in unexpected and local ways that fracture flat and global understandings of society, work, entertainment, and ethics. On this view, sabotage is normative, since it shapes the possible consequences of *any* action. Yet, because of the challenges of assigning justice and worth from this tangle of knowledge and power, it is still an open question whether information *within* digital networks is normative, long before it becomes meaningful and consequential.

I argue that by interrogating examples of digital sabotage it will become clear that information constraint is an ontological feature of digital networks. Sabotage is a form of power within these digital networks that produces knowledge by constraining alternative narratives, data, and possibilities. Because sabotage is common, constrains information, and plays a role in knowledge production, any ethics of digital information must be tied to a theory of social epistemology. As such, my PhD research will address the following practical and meta-theoretical question: What kind of information ethics can accommodate digital sabotage and how does this impact current socio-technological practice?

Current state of knowledge

Beginning in the mid-1990s a new form of information ethics emerged from Library and Information Science, in large part due to Luciano Floridi's groundbreaking work. This new information ethics had close alliances with so-called continental philosophy and viewed all processes and objects as informational. The upshot is that information ethics has become a general ethics, applicable to all subjects and objects. Floridi believes that entropy is an evil that ought to be avoided; I argue, instead, that entropy sets the potential limits for communication and that information constraint can (somewhat paradoxically) lead to information flow. In addition to contemporary scholars of information ethics (such as Luciano Floridi, Lucas Introna, Deborah G. Johnson, Bernd Frohmann, Kenneth Himma, Adam D. Moor, Helen Nissenbaum, Rafael Capurro, and Herman T. Tavani), I will turn to an interdisciplinary range of scholars, on sabotage, power, and capital (Thorstein Veblen, Michel Foucault, and Michel Serres), on topologies of information (Bruno Latour, Gilles Deleuze, Félix Guattari, and Manuel Castells), on the ontology of information (Fred Dretske and Brian Cantwell Smith), and on social epistemology (David Bloor, Bruno Latour, and Richard Rorty).

Methodology

I will work from a genealogy of engineers and code to my theoretical claims. This genealogy will treat engineers and code as "objects" in a network. I will investigate the traces left from discursive practices by analysing source code repository logs, interviewing software engineers (and "informal" engineers), and I will attempt to identify and interrogate positions of interaction between code and engineer. Further, this network includes script kiddies, trolls, and crackers, as well as Internet Service Providers, media companies and e-government. I assume that power and objects are irreducible, ontologically occasionalist, historically nominalist, yet very real (broadly subscribing to the methodological tenets of Speculative Realism). Networked social epistemology and an ontology of objects where "abuse [appears] before use" (Serres) are cornerstones of this research. The underlying theory of information relies on meaning as an output for work, but this does not necessarily imply a doxastic account.

To help validate my findings I will also perform empirical studies of network (mis-) use. Network data will be collected and analysed using off-the-shelf and custom digital network analysis, data mining, and cyber forensics tools. I anticipate that empirical analysis will reveal subtle and hitherto unexplored acts of sabotage, often being performed at the transmission layer of digital technologies. The data and histories chronicling acts of sabotage will produce interim publications as my theoretical aims are constructed.

Preliminary Studies

When I previously studied the techniques and technologies that media corporations used to fight music and movie pirates I realized that adequate explanations for these behaviours were wanting. Neoclassical economics is the dominant narrative for understanding anti-piracy measures, but its inability to quantify value exposes ontological problems with the neoclassical model of capital accumulation. (Neo-)

Marxism fares somewhat better, but it too fails for technical reasons. At the root of it, both explanations fail to properly recognize the social processes latent in capital accumulation. I discovered that, in actuality, production is a hologram of social processes that can be preconfigured by limiting the availability of certain social processes. The petty causes and information flows operated not in spite of the sabotage, but rather, because of the sabotage.

For over two years I have been developing software, processes and business logic for Algorithmics Inc., a risk management software development firm. The hard skills I acquired will allow me to develop empirical digital network analysis tools for my research. During this tenure, I also saw the interactions of code and engineers in a corporate setting, which has helped me to develop an intuitive sense of the locations and form of these discourses. During my Master of Library and Information Science degree at the University of Western Ontario (OGS funded) I explored information ethics and information organization, both as practice and theory. At the University of Toronto (Master of Arts, Philosophy, SSHRC funded) my close interactions with Brian Cantwell Smith sparked an interest in the intersections of philosophy of information, political economy, and metaphysics.

Impact of Research & Social Importance

My research will primarily contribute new theoretical challenges to media, culture, and information studies. The empirical data from digital network analysis, combined with my theoretical approach, will benefit researchers in other fields, such as Political Science, Economics, Computer Science, and Engineering. Given Canada's rapidly changing digital landscape (*e.g.*, Internet neutrality, spam and digital advertising, digital privacy), my research will challenge existing assumptions that fuel policy and business decisions. Hopefully these challenges will provoke business leaders, government officials, NGOs, and citizens to make more informed decisions about our shared digital future.

Suitability of tenure

The Faculty of Information at the University of Toronto is an ideal location for my PhD research. The faculty are globally recognized as being leaders in information ethics and is on the cutting edge of Internet research. My research would benefit greatly from the assistance of Brian Cantwell Smith, Yuri Takhteyev, Andrew Clement, and Stephen Hockema as members of my PhD advisory committee. The interdisciplinary nature of the program fits well with the scope of my research, cutting across critical theory, computer science, philosophy, sociology, and history. The Citizen Lab at the University of Toronto will also prove an invaluable resource.