Chapter Title: Hacktivism and the Humanities: Programming Protest in the Era of the Digital University

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Hacktivism and the Humanities: Programming Protest in the Era of the Digital University

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On June 16, 2009, Professor Cathy Davidson of Duke University posted an entry on the blog for the Humanities, Arts, Science, and Technology Advanced Collaboratory (HASTAC) called "Drinking the HASTAC Kool-Aid," which focused on soliciting applications for a new program coordinator for the organization. In her recruitment effort, she describes HASTAC as a "voluntary network" of scholars whose work reaches beyond academia to expand what the digital humanities could and should be. In doing so, Davidson defines HASTAC's sphere of influence in moral and ethical terms:

> It's not only "digital humanities" in the traditional sense (although the impressive and creative work happening in digital humanities is certainly one part of HASTAC) but it is "humanities" in the even more traditional sense of concern for the deep issues of humanity and society (including the role of science and technology and the state of our planet) that structure everything else in our world, issues of equity and ethics and humanity, issues of what it means to be human (on a deep level informed by science as well as morality), issues of learning and history and introspection, issues of culture, multiculturalism, community, communication, and interaction.

Although Davidson argues that this form of humanities is doubly "traditional," she also seems to be describing a kind of "hybrid humanities" of the kind praised by Patrik Svennson as "visionary" by virtue of "being situated at the periphery and fighting established structures" ("A Visionary Scope").

Davidson concludes her posting with a very different kind of call to action from her initial help-wanted message, one that speaks directly to hackers who might want to topple the theocratic Iranian regime that had just crushed prodemocracy protests contesting recent election results and had shut down the microblogging

and text messaging services that had been disseminating information from political dissenters. Davidson alerts her audience that Western digital rights advocates had "received an SOS from pro-democracy activists in Tehran asking us all to use basic hacking tools to flood the propaganda sites of the ruling regime with junk traffic in order to bring them down and thereby open Twitter channels again." Accordingly she reposts the following orders for electronic civil disobedience from *Boing Boing*, the popular "directory of wonderful things": "NOTE to HACKERS—attack www .farhang.gov.ir—pls try to hack all iran gov wesites [sic]. very difficult for us,? Tweets one activist. The impact of these distributed denial of service (DDOS) attacks isn?t clear. But official online outlets like leader.ir, ahmadinejad.ir, and iribnews.ir are currently inaccessible" (Jardin). What is the connection between Davidson's eloquent defense of a broader notion of the digital humanities and her reposting of a rushed message that is peppered with misspellings, abbreviations, fragments, and ungrammatical infelicities of style? Davidson appears to be again positioning the digital humanities as a site of political activism, one that can run the gamut from the institutionally conventional to the radicalized and marginalized, recognizable as being in the tradition of campus protests about subjects such as civil rights or antimilitarism that have defined how political commitment and dissent are staged in the built environment of the university while also being part of a new vanguard of networked digital culture in which protests in the temporary autonomous zones of computational media are rhizomatic, sporadic, and even ironic in the rhetorical stances that they adopt.

Davidson's use of the trope of "drinking the Kool-Aid" seems to allude to critiques of blind obedience or collective hallucination commonly deployed by critics of cyberutopianism and its associated narratives of technoprogress and Internet liberation theology. Specifically Davidson writes that her program coordinator doesn't "have to drink the HASTAC Kool-Aid" but does "have to be willing to work really hard to support the HASTAC mission and to respect those who believe in it." In doing so, Davidson emphasizes a work ethic very much like the one described in Pekka Himanen's *The Hacker Ethic,* which mixes devotion to the spirit of informationalism with a set of highly intensive labor practices that link individuals to collectives.

By urging her readership to participate in distributed denial of service attacks aimed at the government of Iran, Davidson also links HASTAC with another frame of cultural reference, that of hacktivism, or the writing of code to promote or subvert particular political ideologies. In addition to protesting human rights violations, in the recent past hacktivists have used their programming skills as a form of civil disobedience to promote free and open software, privacy, free speech, freedom of movement, governmental transparency, information ethics, political self-determination, environmental protection, and a range of other online and offline causes. Tim Jordan argues that the "rise of hacktivism has not superceded or destroyed previous hacker politics, but has reconfigured it within a broader political landscape" that

goes beyond "informational politics" (Jordan, 121). However, because hacking tends to be a kind of virtuoso performance by seasoned programmers, the ability to wield tools that expose vulnerabilities in security, privacy, or accurate data representation is often seen as the sole purview of an elite group of highly computer-literate cognoscenti very different from the print-cultured college professors and graduate students who might be expected to read Davidson's blog.

In thinking about the relationship between hacktivism and the humanities, this essay attempts to describe a range of related protest movements during a time in which there is a significant cohort of professors calling for hacking the academy that includes department chairs, heads of national centers, and those in the leadership of professional associations who are demanding fundamental changes in fair use, peer review, and tenure guidelines. There are also others who are going even further and rejecting their allegiances to traditional forms of university governance and risking tenure and even arrest by engaging in direct confrontation on a range of political issues through electronic civil disobedience. To understand these phenomena that bring either politics into academia or academia into politics, I argue that it is helpful to examine current theories both of hacking and of hacktivism, or the nonviolent use of digital tools in pursuit of political ends, and to consider how dissent by students and faculty and protest by an old guard of political organizers and a new cadre of programmers in the general public may be related. In the context of the digital humanities, hacktivism theory offers a way to broaden and deepen our understanding of the use of digital tools and of the politics of that tool use and to question the uncritical instrumentalism that so many digital humanities projects propound.

Digital Dissent

Some might argue that Davidson's appeal for hackers to bring down Iranian government sites shows a profoundly naive understanding of how human rights discourses function in the era of the Internet. In practical terms, such denial of service attacks on state-run online media may only intensify suspicions that outside agitators are interfering with the internal politics of a country with a long history of unwelcome U.S. intervention and covert warfare. Furthermore, such attacks on the state's propaganda infrastructure do little to protect the lives of human rights activists who document state violence against women, police brutality, summary execution, unauthorized detention, or other brutal forms of state control. Such activists bear witness when they post online video or publicize abuses on blogs and microblogging sites through channels independent of the information mechanisms of the authoritarian state, providing evidence with persuasive power rather than just disruption of an online user's experience (Gregory). Older broadcast or telephonic technologies may also provide useful models for a more effective form of hacktivism that respects existing culture and facilitates practical change. For example, consider

how media activist Tad Hirsch designed Dialup Radio to provide political dissidents in Africa a channel for broadcasting information about corrupt or repressive regimes by using mobile phone technology, open-source code, and secure networks that preserve the anonymity of participants and support low-tech solutions (Frid-Jimenez). Other critics of Davidson might observe that the time of digital humanists might be better invested in creating a good information visualization that shows the statistical features of the election irregularities that drove many into the street, which might have more persuasive power than a vandalized government website, although it lacks the glamour of radical chic.

Certainly, not all who use software for political dissent agree that hacktivism and scholarly research are natural partners. New York University's Alexander Galloway, who directs the Radical Software Group, appears wary of uncritically accepting any ideology that affirms that distributed networks are inherently liberatory. In *The Exploit: A Theory of Networks*, Galloway and Eugene Thacker describe the Internet as both highly centralized and highly dispersed in structure and a platform for both corporate and subversive activity. In their account of network relations, the broadcast and surveillance mechanisms of hidden power brokers and the cracking of hackers who undermine authority covertly and idiosyncratically might not be so different, after all. Although Galloway's team is probably capable of infiltrating and disrupting some seemingly secure networks, he also implies that simply hacking those networks does little to foster meaningful intellectual exploration. Instead he aspires to create a new framework for critical theory to help others with "thinking topologically" (Galloway, 13) about forms of networked organization very different from hierarchical pyramids. For Galloway and Thacker, the fundamental constraints of protocol politics are of much more interest than the romantic myths of lone antiheroes. Ironically, they argue that hacktivism actually operates within the context of a "new symmetry" that places electronic civil disobedience in a static geometrical relationship with "cyberwar," which is also similar to other forms of "netwar" that do little to foster the kind of serious systematic critique that is the subject of their book (Galloway, 66). Indeed, while DDOS attacks were used recently to protest the international pursuit of WikiLeaks founder Julian Assange, such attacks have also been part of the defense mechanisms of more conventional forms of nation-state militarism complete with geographical borders and definitions of citizenship constituted by ideologies of self-determination and shared ethnicity from Estonia to East Timor.[1]

Galloway, however, makes a significant exception for academic hacktivists like himself, as he explains the aims of the Radical Software Group and subversive projects like Carnivore, which mocks an FBI surveillance system of the same name that was designed to monitor e-mail and other forms of electronic communication on a massive scale: "You might call RSG a hacker rip-off group. For example, Carnivore is nothing but a new spin on the packet sniffer, a tool that hackers and sys admins have been using for years. But the flip side is that most hackers are quite unschooled

when it comes to politics and cultural theory. (Of course I'm referring to traditional hackers, not hacktivists like Critical Art Ensemble or The Yes Men.) So one of the goals of RSG is to bring a more political and theoretical awareness to hacker practice" (Quaranta). The Carnivore project website explains that "Galloway's artwork is independent of the federal digital-surveillance program, yet it functions in much the same way," although "he takes his data from volunteers," and "his program generates art" not "incriminating evidence," because rather than "sifting the flow of data—which might include personal, potentially sensitive material like Web-page contents and chat-session exchanges—in a quest for clues," the software "converts the electronic information into vibrant images and sounds" (Radical Software Group).

In response to the Iranian postelection situation, some digital humanities projects took a fundamentally different approach from either the anonymous cyberattacks promoted by Davidson or the kind of artistic translation, conversion, and reappropriation at work in Galloway's projects that subverts signification and coherence. HyperCities, a digital humanities initiative that describes itself as "a digital research and educational platform for exploring, learning about, and interacting with the layered histories of city and global spaces," supported the efforts of UCLA Iranian-American graduate student Xarene Eskandar to create a collection of geotagged social media artifacts that document the election protests in Iran with markers on electronic maps, online videos, links to microblog postings, and explanations of the significance of a range of digital ephemera by Eskandar, who wrote,

> Working against Iranian state media censorship, I wanted to keep track of the protests across the country and especially the capital, Tehran, to show they are not isolated events. My goal is to raise awareness of the magnitude of discontent, as well as keep a record of it due to the temporal nature of Twitter. State media either denied there were any protests, or they circulated false news that the unrest was only in northern Tehran, a well-to-do part of the city (and sympathetic to Western culture), and a few times they even claimed the opposition to be pro-government while broadcasting the protests with no audio. They also claimed all other provinces were calm, while in fact the protests were not limited to class, age or province and were wide-spread. (Presner)

In other words, in the terms of modern information theory, Eskandar describes her goals as facilitating signal rather than noise to spread information about the location and recurrence of protest activities rather than jam the systems of their oppressors.

More recently, the HyperCities group in the UCLA Digital Humanities Collaborative created HyperCities Egypt. Subtitled "Voices from Cairo through Social Media," it includes a Google map of Egypt's capital that reorients the viewer as the program pinpoints a new tweet every four seconds that includes hashtags associated with the street protests that toppled the Mubarak government, such as #Jan25 or #egypt. "Because it gathers tweets from those who have enabled Twitter's 'add

location' function, the program also maps the precise location in Cairo from which they were sent," a news release explains. "And the Twitter users' avatars—often photos of the protesters themselves—accompany the poignant messages, providing a moving immediacy to the experience" (Sullivan). Thus multiple systems of authentication function simultaneously in the HyperCities spectacle of transparency; onscreen text is tied both to images of the urban landscape that can be zoomed in on from a satellite view and to photographs of the faces of those who bear witness.

HyperCities director Todd Presner maintains that this retasking of a digital humanities mapping tool designed to teach about urban history in sites such as ancient Rome or Weimar Berlin is completely consistent with the project's mission, because "HyperCities Egypt gives users a sense of living—and reliving—history" (Presner). The software also maps contemporary protests to share information about rapidly unfolding events organized by smart mobs with potential future participants. Presner, Eskandar, and others in HyperCities see this kind of dissemination of real-time data as continuing the scholarly work of building digital archives.

However, this form of digital humanities also borrows from contemporary activist practices that use digital mapping technologies in grassroots organizing and the human rights work of NGOs. One might argue that HyperCities Egypt and the HyperCities Tehran collections are actually much more like the mapping initiatives jointly sponsored by Google Earth and the U.S. Holocaust Memorial Museum, Crisis in Darfur and World is Witness, which use aerial digital photography and online crowd sourcing in African nations like Sudan, Rwanda, and the Democratic Republic of Congo, as well as in Bosnia-Herzegovina and Chechnya, to track both evidence of past crimes against humanity and present genocides potentially unfolding.

Thus these uses of testimony and evidence put the digital humanities in dialogue with movements for decriminalization and political abolitionism and open up new forms of electronic publication for scholars who see themselves as potential agents of change. For example, Sharon Daniel's Public Secrets and Blood Sugar websites, which use digital audio recordings of prisoners and drug addicts, were created with programming resources from the online journal *Vectors* and thus partially funded by the National Endowment for the Humanities (NEH). Yet many NEH digital humanities competitions specifically forbid endorsing any particular political point of view and would seem to promote a form of technocratic neutrality very different from the work of the most interesting practitioners in the field.

Electronic Civil Disobedience

Outright electronic civil disobedience could be described as the most militant form of political resistance in the digital humanities and one that has become more visible in panels and professional associations in recent years. Many scholars date theories of electronic civil disobedience in the academy to the early work of Critical Art Ensemble (CAE) on the subject. In their 1996 book, *Electronic Civil Disobedience*

and Other Unpopular Ideas, which actually predates the group's own access to the sophisticated computer networks that they imagined capable of toppling the powerful, this collective of artist-activists that coalesced in 1987 declares that although conventional civil disobedience was "still effective as originally conceived (particularly at local levels), its efficacy fades with each passing decade" as a result of "the increasing ability of power to evade the provocations" of those who remain nostalgic for the victories of the sixties as powerful influences cease to be either "visible or stable" (*Electronic Civil Disobedience,* 9).

Although CAE founder Steve Kurtz eventually earned tenure at SUNY Buffalo, he and other members of Critical Art Ensemble remain suspicious of the arbitrary nature of the legitimating power of cultural, political, and economic institutions and suggest in their more recent work that self-interested experts—including those in university positions—often have little incentive to pursue the truth. "Amateurs have the ability to see through dominant paradigms, are freer to recombine elements of paradigms thought long dead, and can apply everyday life experience to their deliberations. Most important, however, amateurs are not invested in institutional systems of knowledge production and policy construction, and hence do not have irresistible forces guiding the outcome of their process" (*Digital Resistance,* 9). Because of this very enthusiasm for DIY science and amateur rather than professional knowledge making, Kurtz found himself the subject of a criminal bioterrorism investigation after his wife Hope died of congenital heart failure in 2004, merely because law enforcement officers who came to the scene found the presence of biotechnology equipment in the couple's home laboratory to be suspicious. Given the rapid rise of genetically modified foods and other forms of radically new biological engineering, CAE had wanted to focus attention on what they saw as "the misuse of biotechnology by private corporations operating outside the realm of democratic, public debate" with a tactical response that they called Fuzzy Biological Sabotage, or FBS, "a type of sophisticated, prank that uses harmless biological agents, including plants, insects, reptiles and even microorganisms, to operate in the gray, in-between spaces as yet unregulated by institutional regimes" (Sholette).

Gray areas of law involving technological practices that have not yet become fully regulated were also of interest to former Critical Art Ensemble member Ricardo Dominguez, who founded the Electronic Disturbance Theater (EDT) in 1998 with Carmin Karasic, Brett Stalbaum, and Stefan Wray.[2] In 2001, Dominguez traveled to Germany and visited activists who had been inspired by EDT and CAE's work on electronic civil disobedience. The first virtual sit-in was held to protest Lufthansa Airline's involvement in state-sanctioned deportations. According to Dominguez, thirteen thousand people participated in campaigns organized by *Kein Mensch ist illegal* (No Human Is Illegal) and Libertad during Lufthansa's annual shareholders' meeting. The organization and orchestration of this event occurred with the full public disclosure that had been considered also to be essential in previous Italian netstrikes against the World Trade Organization.[3] As Dominguez explains, it was

important that "nothing was hidden . . . because ECD is about bringing together real bodies and digital bodies in a transparent manner which is the same tradition as Civil Disobedience—that people are willing to break a law (like blocking the street) to uphold a higher law" ("A Transparent and Civil Act").

Electronic Disturbance Theater put many earlier principles of the Critical Art Ensemble into digital practice with their series of virtual sit-ins to provide a "reconfiguration of street theater" that "facilitates direct access between macro-networks and non-digital networks" (Electronic Disturbance Theater). They organized a series of protests on the virtual real estate of official websites, first against Mexican President Ernesto Zedillo's official website and later against President Bill Clinton's White House site, the Pentagon, the School of the Americas, the Mexican Stock Exchange, and the Frankfurt Stock Exchange (Denning). For example, in the first pro-Zapatista demonstration held online by EDT, visitors might see images of masked rebels and the FloodNet branding with a message suggesting, "Use the applet below to send your own message to the error log of the institution/symbol of Mexican Neo-Liberalism of your choice" (Electronic Disturbance Theater). No actual damage to the computer infrastructure of the sites or to their security mechanisms was caused by these actions. As one website explaining Floodnet describes, the intent was merely "to disrupt access to the targeted website by flooding the host server with requests for that website" ("Brief Description of the Tactical Floodnet").

As an academic, Dominguez earned praise for his impressive output and for his innovative work in conceptual art and technological development for DIY activism, as he led the b.a.n.g. lab at the prestigious California Institute for Telecommunications and Information Technology.[4] Confident in the protections of academic freedom, Dominguez held a well-publicized virtual sit-in to stop "Nanotech and Biotech War Profiteers" from March 19 to March 20, 2008, in which he used computer servers owned by his employer, University of California (UC), San Diego, and targeted those of the Office of the President for the entire UC system. Despite his use of public resources for controversial activities, he was promoted without incident and received tenure on March 30, 2009.

University ownership of servers used for hacktivism would not become an issue for Dominguez until after a virtual sit-in on March 4, 2010, which was held to protest budget cuts and tuition hikes that were crippling access to higher education. While faculty and students marched on the state capitol building in Sacramento, some four hundred EDT supporters helped occupy the ucop.edu domain. A reporter from the *Los Angeles Times* later described the basic script for the mass action:

> "Transparency," hundreds of protesters wrote, over and over again, in the search box of the home page.
>
> The jammed website responded with an error message: "File not found."
>
> The protesters' message: Transparency doesn't exist in the UC system. (Marosi)

At the same time the b.a.n.g. lab hosted a parody website at markyudof.com, which lampooned the unpopular UC president by posting a fake resignation letter. Because of the timeline of accusations, some claim that it was actually the development of the controversial Transborder Immigrant Tool, or TBT, rather than the March 4 virtual sit-in that caused Dominguez to face the serious possibility of disciplinary consequences that included a threatened loss of tenure for expropriating public resources and criminal prosecution for violating existing computer law. After all, Fox News was running stories explaining hacktivism to their viewership, and members of the b.a.n.g. lab were receiving harassing phone calls and death threats soon after the news media reported that Dominguez's group was helping illegal immigrants by recycling cheap mobile phones and equipping them with new software to guide them in making the risky trip across the border to water caches left by humanitarian groups or to border patrol stations where they could receive first aid. This retasking of an existing technology turned the old phones into life-saving GPS devices with easy-to-read digital compasses. According to Dominguez, the global migrant underclass unable to afford so-called smart phones would no longer be "outside of this emerging grid of hyper-geo-mapping-power" ("Transborder Immigrant Tool"), and the harsh reality of the border landscape could be digitally augmented to promote a different form of politics.[5]

The use of computing resources in more conventional digital humanities projects may seem less obviously open to debate, but Dominguez's case should function both as a cautionary tale and as an aspirational story to those operating in the mainstream of an emerging field. In other words, projects involving text encoding, electronic archiving, or GIS mapping generally use university computer resources as well, and controversies about ownership, access, and control may have consequences for digital humanities projects at least at the level of local institutional politics. Although the battles over who uses a given computer server and under what circumstances may seem less contested for a database of Jane Austen novels than a database of covert water caches in the desert, academics involved in all kinds of digital humanities projects must grapple with potentially combative IT situations in which funding can dry up or be diverted without much advance warning. Furthermore, digital humanists often also struggle for recognition of the value of their digital scholarship, which can make tussling over computer resources even more frustrating and exhausting. Ironically, Dominguez had relatively little trouble getting his digital work to count for his tenure file, and he certainly did not labor in obscurity unlike many digital humanists who foreground the authors of the past or principles of collective authorship or crowd sourcing that may cost them dearly when they must be reviewed by their print monograph–oriented peers.

Unfortunately for Dominguez, he is still unable to gain access to his FBI file or to see the reports written by the detectives who visited his office, but he was able to see documents from an official university audit that was conducted to address concerns that individuals with the b.a.n.g. lab may have misused university resources.

It is interesting to note that this document strongly asserts the value of academic freedom while also suggesting that some hacktivist practices could violate the faculty code of conduct that functions as part of the social contract of the university.

> The University of California APM-010 states that the University is committed to the principles of academic freedom, which protect freedom of inquiry and research, freedom of teaching, and freedom of expression and publication. While exercising this freedom, faculty must also abide by the Faculty Code of Conduct located in Section E of AMP-015, which addresses interaction with the community and defines two types of unacceptable conduct: 1) intentional misrepresentation of personal views as a statement of position of the University or any of its agencies; and, 2) commission of a criminal act which has led to conviction in a court of law and which clearly demonstrated unfitness to continue as a member of the faculty. ("Use of Resources")

Although Dominguez was eventually cleared of culpability and both types of "unacceptable conduct" were eventually ruled out as possibilities, these categories point to how certain online activities create slippage in delineating the difference between "personal views" and professional expertise and also raise questions about what constitutes a "criminal act" when computer algorithms perform their unit operations automatically and highly efficient digital distribution systems produce cascading effects not possible to execute from a single computer.

Of course, the figure of the protesting professor is a familiar one on college campuses, and many sympathetic faculty members rallied to Dominguez's side as he grappled with the mounting costs of legal assistance from multiple lawyers as he was faced with defending himself in a complex case involving many legal and procedural issues within the jurisdiction of federal, state, local, and campus authorities and specific technologies that had never before been litigated or regulated (*Prof. Ricardo Dominguez*). In addition to fundraising efforts, letters of support were soon posted on websites and Facebook pages and disseminated via listservs and e-mail. One letter from the "Faculty Coalition" emphasized appeals to authority, the litmus tests of peer review, and the stature of Dominguez as a "defining figure in the migration of performance art from physical space to virtual space"; it also pointed out the irony that Dominguez was being persecuted for precisely what he received tenure for (UCSD Coalition Letter). In contrast, the letter of support from the Visual Arts Department emphasized academic freedom rather than peer review and Dominguez's obligations to those outside the university rather than those within it.

> It is the unique mission of a public university to make higher education available to all, and not just the wealthy and privileged. As faculty in one the most respected public education systems in the world we thus feel a unique responsibility. It is essential to understand that the "public" is not monolithic, but is

> composed of diverse and often conflicting constituencies. It is our mandate as educators to explore these points of tension and reconciliation in our research and our teaching. Clearly we are living through a period of profound technological change. It is in the nature of such moments that these changes also transform our understanding of culture and politics, introducing new concepts of public identity and space, and new modes of political action and cultural expression. This is precisely the task that Professor Dominguez has taken on in his research. If UCSD is to retain its international reputation for excellence it's essential that the principles of academic and artistic freedom be defended against the growing pressures exerted by incipient privatization and political extremism. (Visual Arts Letter of Support for Ricardo Dominguez)

The ideal of the public intellectual could be said to be at the core of many arguments for bringing more hacktivists into the digital humanities. Hacktivism brings university scholarship into the headlines and makes it possible to articulate arguments about the relevance of the digital humanities that go beyond cultural heritage claims that rarely get much public attention. Despite the dismay of university administrators, who are often hesitant to recognize computer programming as a form of campus free speech, faculty and students continue to deploy code to further activist agendas. Yet media reports about hacktivist conduct by faculty, graduate students, and undergraduates rarely place these computer-coded expressions of protest in the context of other kinds of campus activism or critical engagement (Losh, *Virtualpolitik*, 199–238). Whether a scholarly researcher is generating electronic boarding passes to protest homeland security policies or using data-mining techniques to identify self-interested Wikipedia edits by corporations and politicians, the attention goes to the programmer's identity as a hacker, rather than as a member of the academy, even though such conduct may be both socially useful and morally justified and thus fully in keeping with the university's mission to serve the public.[6]

Critical Information Studies

The digital ephemera created by Dominguez's hacktivism have also become objects of study in the humanities. However, as scholars work collectively to interpret varied practices that include the "political coding" and "performative hacking" that bring together the efforts of hacker-programmers and artist-activists from the postmodern left (Samuelson), it may be more accurate to describe this research as "hybrid humanities" rather than "digital humanities," because those doing it often are studying art practices, conducting field work, or emulating code rather than merely explicating textual artifacts in a narrow interpretation of the tradition of humanities scholarship. Some literary scholars who are drawn to Dominguez's work have approached it as a hypertext in which "a multi-layered networked narrative" links to evidence of the discursive practices of different communities "within a narrative

and performative framework" that includes hacking, activism, and net art (Deseriis). Others have focused on close reading the text of the actual computer code generated by Electronic Disturbance Theater or the b.a.n.g. lab, much as one might read a poem with close attention to its rhetorical address, allusions, and tropes, while also acknowledging the importance of "reframing" code and thus preserving the "context of its circulation and creation" (Marino). However, as one of the creators of the code for the Transborder Immigrant Tool, Brett Stalbaum, observed at a recent Critical Code Studies Conference, basic code "fluency" may be more important than more sophisticated forms of scholarly interpretation, particularly when university administrators and investigators from law enforcement lack the basic "ability to even look at source code" with comprehension and thus routinely mischaracterize the purpose and function of what he called a "public safety tool" (Stalbaum).

According to a story in the *Chronicle of Higher Education* about a new cohort of "digitally incorrect" professors who seem determined to flout their hacktivist principles, such misunderstandings may be increasingly more likely to occur now that the university must grapple with assimilating "the first generation of new-media artists who migrated to academe," a group that includes not only Dominguez but also "Mark Tribe, now at Brown University, and the social-activist pranksters the Yes Men, Andy Bichlbaum (real name: Jacques Servin), at Parsons the New School for Design, and Mike Bonanno (real name: Igor Vamos), at Rensselaer Polytechnic Institute" (Goldstein). Many of these new-media political dissenters use the tools of tactical media as it is imagined most broadly by theorists like Geert Lovink to include not only computer code but also other kinds of small-scale media appropriation, such as "pirated radio waves, video art, animations, hoaxes, wi-fi networks, musical jam sessions, Xerox cultures, performances, grassroots robotics, cinema screenings, street graffiti" (Lovink, 189). Although specific niche areas like "intellectual property hacktivism" may seem limited in effect (Irr), practitioners often earn considerable public interest and support from computer users fed up with digital-rights management and entertained by witty satire.

Because pursuit of the media spotlight is an essential part of hacktivism and tactical media activism, conflicts can break out among seemingly like-minded academics, particularly when authenticity might be valued over irony. For example, Kembrew McLeod irritated many colleagues when he dressed up as a robot and accosted former president Bill Clinton at a televised public event about the seemingly trivial matter of the former president's criticism of hip hop artist Sista Souljah fifteen years earlier. McLeod, a tenured professor at the University of Iowa and creator of the documentary *Copyright Criminals,* had first achieved fame for trying to trademark the phrase "freedom of expression" as "an ironic comment that demonstrates how our culture has become commodified and privately owned" and has since declared, despite rising to a recognized position of tenured stability in his chosen profession, "I still solemnly swear to put the 'ass' back in associate professor (just as I put the 'ass' in assistant professor for six years)" ("My Trademark of Freedom of Expression").

Although McLeod subsequently defended his heckling of Clinton in an unapologetic column in the *Washington Post* called "I, Roboprofessor," which reaffirmed his enthusiasm for performance rather than regulatory compliance, self-described friends of McLeod still posted disapproving blog entries about being unwilling to overlook the hypocrisy of McLeod criticizing Clinton for his media opportunism by taking part in a spectacle of media opportunism of his own.

One of McLeod's friends and critics, Siva Vaidhyanathan, has argued that Critical Information Studies (CIS) could serve as the common field uniting this new vanguard of academics who are neither cyberutopian cheerleaders for computer technologies nor dour reactionaries eager to crush subversive digital practices and who strive to influence actual policy through their teaching and research: "CIS interrogates the structures, functions, habits, norms, and practices that guide global flows of information and cultural elements. Instead of being concerned merely with one's right to speak (or sing or publish), CIS asks questions about access, costs, and chilling effects on, within, and among audiences, citizens, emerging cultural creators, indigenous cultural groups, teachers, and students. Central to these issues is the idea of 'semiotic democracy,' or the ability of citizens to employ the signs and symbols ubiquitous in their environments in manners that they determine" ("Afterword: Critical Information Studies"). Vaidhyanathan envisions a big-tent form of digital humanities that "necessarily stretches to a wide array of scholarly subjects, employs multiple complementary methodologies, and influences conversations far beyond the gates of the university" by engaging economists, sociologists, linguists, anthropologists, ethnomusicologists, communication scholars, lawyers, computer scientists, philosophers, and librarians in a common endeavor ("Afterword: Critical Information Studies"). For Vaidhyanathan, the digital humanities is not merely about curating and managing particular digital collections; it is also about thinking about systemic and structural problems and opportunities related to the political and legal status of digital files and data infrastructures. He is particularly enthusiastic about the advocacy roles assumed by contemporary digital librarians and their collaborators and points to the political work of the American Library Association against the onerous Digital Millennium Copyright Act as a model for other professional academic associations.

Although Vaidhyanathan and others promulgate CIS as an interdisciplinary field of study that could serve as the logical successor to the areas of academic inquiry in cultural studies that arose from the protests of the 1960s and 1970s, which is now "needed to make sense of important phenomena such as copyright policy, electronic voting, encryption, the state of libraries, the preservation of ancient cultural traditions, and markets for cultural production" ("Afterword: Critical Information Studies"), advocacy for these issues in the university setting does not necessarily achieve the kind of visibility that was associated with previous movements that assembled crowds of individuals for face-to-face interactions in physical public space to achieve an end to the Vietnam War, milestones on civil rights issues,

affirmative action, or divestment in South Africa. Despite the fact that the Iraq War and the Iranian elections have also been important to hacktivist activities promoted by the academy, the networked publics of these communities of interest are often not a visible presence in the university. Even though Vaidhyanathan notes in the section "Code Switching: Activism and Hacktivism" in his Critical Information Studies Manifesto that CIS contributors often "translate their more rarified scholarly work via blogs and other open Websites" or "announce the publication of drafts of their work and invite feedback through their Weblogs," the existence of these remote and dispersed public audiences usually does little to persuade either university administrators or policy makers to pursue fundamental or unpopular political changes.

Hacking the Academy

The assumption that a rising new-media professorate of the kind described by the *Chronicle of Higher Education* would eventually replace more conservative faculty members has not necessarily proved true any more than the so-called digital generation has taken over policy making in other traditional institutions. After all, what Diane Harley has called the "tournament culture" of publish-or-perish academia can only offer diminishing resources to newcomers, and practicing digital humanists continue to be underrepresented in tenure-track positions. Moreover, scholars such as Mimi Ito, who observe the computer practices of present-day digital youth, note that online behavior oriented toward conformity, popularity, and gossip continues to be far more common than activism and hacking, so hacktivism is likely to continue to be a minority movement within the culture at large for a very long time.

Nonetheless, there are calls for change in the university and for forming larger coalitions between marginalized social actors and political interests; some of these calls are even coming from within the ivory tower itself. Two notable recent collections, *Learning Through Digital Media: Experiments in Technology and Pedagogy* and *Hacking the Academy,* emphasize the role of everyday practices rather than abstract principles in moving the digital humanities forward to take a more significant role in the university and in society at large. Both collections were composed and edited using social media and online publishing tools: *Learning Through Digital Media* used open-source CommentPress software as a platform for peer review, and *Hacking the Academy* was aggregated largely from blog entries from nearly two hundred interested academics who responded to the challenge to create "a book crowdsourced in a week" (Scheinfeldt and Cohen).

As editors Tom Scheinfeldt and Dan Cohen explained in their call for submissions at the start of the one-week collective authoring frenzy, "in keeping with the spirit of hacking, the book will itself be an exercise in reimagining the edited volume," so that any "blog post, video response, or other media created for the volume and tweeted (or tagged) with the hashtag #hackacad will be aggregated at hackingtheacademy.org" (Scheinfeldt and Cohen). Of course, many might argue that it

is significant that *Hacking the Academy* only pays homage to the spirit of hacking rather than its practice because its project is located within the academy and operates principally through sanctioned reform and because it ultimately retains the gatekeeper model that is antithetical to hacking because only a fraction of the posts submitted for the book will appear in the printed text. In contrast, many affiliated with *Learning Through Digital Media* are known for drawing on their prehistories as activists and artists and for pointing to a politics not framed by academic structures. Nonetheless, comparing these two books in similar terms in this volume can be fruitful for locating central themes in recent conversations about praxis in the digital humanities.

For example, both books profess to be deeply concerned with changing power relations in the university. Although the table of contents of *Learning Through Digital Media* reads like a how-to manual that is organized according to one's interest in particular tools, editor Trebor Scholz, who is well known in tactical media and hacktivist circles, is adamant that instrumentalist tool literacy approaches do little to effect or respond to cultural change. "Learning with digital media isn't solely about using this or that software package or cloud computing service. The altered roles of the teacher and the student substantially change teaching itself. Learning with digital media isn't about giving our well-worn teaching practices a hip appearance; it is, more fundamentally, about exploring radically new approaches to instruction. The future of learning will not be determined by tools but by the re-organization of power relationships and institutional protocols" (Scholz). Scholz argues in *Learning Through Digital Media* that such learning is characterized by an enthusiasm for cocreation and a synergy with informal peer-to-peer teaching that can "prepare learners for democratic citizenship, . . . community development," and critical engagement with the world. His collection champions teaching with digital media–ripping software like Handbrake to subvert anticopying restrictions and a pedagogy oriented around net art computer programs like Freedom and Anti-Social that mock Web 2.0 multitasking.

Hacking the Academy opens with a series of provocative questions that suggest that professors and other senior experts might be outsourced entirely: "Can an algorithm edit a journal? Can a library exist without books? Can students build and manage their own learning management platforms? Can a conference be held without a program? Can Twitter replace a scholarly society?" (Scheinfeldt and Cohen).

> As recently as the mid-2000s, questions like these would have been unthinkable. But today serious scholars are asking whether the institutions of the academy as they have existed for decades, even centuries, aren't becoming obsolete. Every aspect of scholarly infrastructure is being questioned, and even more importantly, being hacked. Sympathetic scholars of traditionally disparate disciplines are cancelling their association memberships and building their own networks on Facebook and Twitter. Journals are being compiled automatically

> from self-published blog posts. Newly minted Ph.D.'s are foregoing the tenure track for alternative academic careers that blur the lines between research, teaching, and service. Graduate students are looking beyond the categories of the traditional C.V. and building expansive professional identities and popular followings through social media. Educational technologists are "punking" established technology vendors by rolling their own open source infrastructure. (Scheinfeldt and Cohen)

Sections in *Hacking the Academy* are headed with titles such as "Scholarly Societies and Conferences," "Academic Employment, Tenure, and Scholarly Identity," and "Departments and Disciplines," which suggest that these institutional interests are ready for the radical reforms that authors recommend.

In arguing for what seems to be the digital overthrow of the university, these *Hacking the Academy* scholars champion personal visibility, public profiling, web-based organizing strategies, and literacy in code in ways that can be read as completely consistent with hacktivism (Van Veen); but I might note that the omission of an explicit discussion about digital rights and broader forms of public engagement that involve computational media is still disappointing. In sketching out the domain of its brave, new, often professor-less world, *Hacking the Academy* is careful to include a section called "Criticisms of This Book," which contains a blog entry that I wrote during the one-week authoring frenzy that asks, "Will 'Hacking the Academy' Be Understood as 'Backing the Academy'?" In it, I call for "a joint defense of work done outside of the academy in the name of fair use, free culture, open access, open source, collective intelligence, network neutrality, user privacy, and digital inclusion" and a coordinated attack on the distance learning models that libertarian fellow travelers might be pushing to privatize public institutions with online instruction (Losh).

> Instead of talking about "hacking," I have argued that we should be talking about "hacktivism" and curricular, scholarly, and societal changes that focus on digital rights and responsibilities more generally . . . There is no doubt that movements for civil rights, women's rights, gay rights, the rights of ethnic minorities from both immigrant and indigenous populations, and the rights of the disabled have transformed not only the academy but also the larger society as a whole. What would it mean to have campus protests, walkouts, and strikes to champion digital rights and how could it change the mission of the university itself? If the anti-war movement moved universities and governments toward transparency, what could a movement specifically concerned with information transparency do?

In other words, in my opinion, those interested in "hacking the academy" express too little interest in "hacking the world," and experiments in open peer review and creative commons publishing in the academy are too often oriented around the

self-interest of academics needing tenure rather than the shared interests of world citizens defending the dignity or survival of others.

At the 2011 annual convention of the Modern Language Association, noted humanities scholar Alan Liu made a similar plea for more political engagement within the digital humanities and specifically for taking hacktivism and tactical media activism more seriously in the field.

> In the digital humanities, cultural criticism—in both its interpretive and advocacy modes—has been noticeably absent by comparison with the mainstream humanities or, even more strikingly, with "new media studies" (populated as the latter is by net critics, tactical media critics, hacktivists, and so on). We digital humanists develop tools, data, metadata, and archives critically; and we have also developed critical positions on the nature of such resources . . . But rarely do we extend the issues involved into the register of society, economics, politics, or culture in the vintage manner, for instance, of the Computer Professionals for Social Responsibility (CPSR). How the digital humanities advance, channel, or resist the great postindustrial, neoliberal, corporatist, and globalist flows of information-cum-capital, for instance, is a question rarely heard in the digital humanities associations, conferences, journals, and projects with which I am familiar. Not even the clichéd forms of such issues—e.g., "the digital divide," "privacy," "copyright," and so on—get much play.

Liu argues that these predictable catalogs of digital humanities products (tools, data, metadata, and archives), modes of institutional membership (associations, conferences, journals, and projects), and stock issues (the digital divide, privacy, and copyright) add up to little critical thinking about neoliberalism at best and collaboration with the enemy at worst.

In contrast, there are those who argue that the digital humanities is reaching too far and is risking the stability of academic culture itself. Ironically, this often happens as a direct result of creative misreadings that take the wishful thinking of digital humanities manifestos and provocations far too literally. For example, Ashley Dawson, coauthor of *Dangerous Professors: Academic Freedom and the National Security Campus,* takes the recent Digital Humanities Manifesto entirely at its word when the coauthors proclaim that the digital humanities has "a utopian core shaped by its genealogical descent from the counterculture?cyberculture intertwinglings of the 60s and 70s" that affirms "the value of the open, the infinite, the expansive, the university/museum/archive/library without walls" along with a radical "democratization of culture and scholarship" ("A Digital Humanities Manifesto")

After reading this utopian rhetoric, Dawson worries that academic freedom itself might be at risk because of pressure from a well-intentioned but ultimately naive digital humanities in favor of massive deinstitutionalization, deskilling, and

globalization of the academy that could have disastrously counterintuitive results for the left.

> The links between the movement for a radical democratic, anti-capitalist networked commons and initiatives in the Digital Humanities such as open access publishing are laid out quite clearly . . . Notice, however, that the claims of Digital Humanities extend beyond simply making scholarly research more widely available, as valuable as such initiates are—particularly in terms of redressing the widening knowledge gap between the global North and South. In addition, the digital revolution is represented in the manifesto as transforming the character of research itself, shaking down established disciplinary walls and promoting novel forms of collaborative inquiry.

It is worth noting that Dawson shares with Liu an anxiety that, like transnational corporations, "universities have sought to profit from the intellectual property produced in research labs, libraries, and classrooms" and "to monetize knowledge" (Dawson) even in the formerly unprofitable humanities with new digital humanities initiatives that can capitalize on the economic extraction model of contemporary global capitalism.

Challenges to the Digital Humanities

Alan Liu and Cathy Davidson are certainly closer to the center of the digital humanities as it is currently defined, and Ricardo Dominguez and Kembrew McLeod are definitely located farther away on its ideological peripheries, but they all argue for the formation of new modes of institutional critique and a rethinking of the profession, particularly—in Liu's case—as impersonal and dehumanized distance learning becomes a very real possibility in transforming public education for the worse.

However, the popular base of the digital humanities might still have a vested interest in disciplining faculty who devote themselves not only to hacking but also to pirating and pranking. This is particularly true for more entrenched digital humanists who see themselves as part of a tight-knit community devoted to a what Patrik Svensson has called a "tradition of humanities computing" and its associated "epistemic commitment" to understanding "information technology as a tool and written texts as a primary object of study" in a field devoted to linguistic analysis rather than social change ("Humanities Computing"). These humanities computing specialists who represent, for Svensson, the establishment in the digital humanities tend to focus on the practical rather than ideological aspects of information technology and to seek the coherence and legibility in a given corpus, not its disruptive potential. Furthermore, because humanities computing specialists are people who have often fought for computing resources for decades, frequently without the star status and influence that high-profile hacktivists and tactical media activists might enjoy

as tenured faculty members, they may also express resentment over the privileges accorded to newer academic stars.

Looking at all these case studies and surveying recent work at the intersections of hacktivism and the digital humanities by Davidson, Galloway, Presner, Dominguez, McLeod, Vaidhyanathan, and Liu, we are left with an important question: is hacktivism relevant to the digital humanities? I suppose it depends on the form of the digital humanities in question.

Certainly, the history of the digital humanities, as described by Tara McPherson, tells of founding fathers who turned to humanities computing not because they were in love with the aquarianism of Ted Nelson but because they were in full retreat from new forms of scholarship rooted in questioning ideologies of race, gender, and class as the academy underwent a fundamental transformation in the post-free-speech seventies. For McPherson, this original digital humanities, defined by white male conservatism, was about seeking enclaves, not networks, and deploying strategies, not tactics. However, both McPherson and Patrik Svensson have argued that the digital humanities has become profoundly polymorphic in the present day. As Svensson explains, "The territory of the digital humanities is currently under negotiation. While there is no doubt that the field is expanding, it is not entirely clear what is included and how the landscape can be understood or structured. These ongoing negotiations occur on multiple levels, from an individual graduate student and local institutions to national funding agencies and international institutional networking. They are consequently situated institutionally, physically, politically and epistemically" ("The Landscape"). In practice, the question might ultimately turn out to be, "Does hacktivism want digital humanists?" rather than, "Does the digital humanities want hacktivists?" In other words, what incentives do hacktivists have to join the ranks of the digital humanities and take part in their frequently arcane and soporific journals and conferences? Elsewhere, I have argued that game studies might turn out not to be at home in the digital humanities either ("Playing Against Type"), given the fact that research in computer games often values participant observation rather than disinterested analysis and adopts the stance of the playful life-hacker rather than the dutiful enforcer of standards. For scholars coming from the world of game studies, digital life and real life intermingle, the exploit functions as a site of intervention, and breaking systems is just part of the fun. If the digital humanities foregrounds neutral disembodied approaches and taxonomies of abstracted data, the most interesting work in game studies often takes the opposite approach by embracing either feminist perspectives that emphasize embodied interactions or methods derived from object-oriented ontology that foreground material assemblages and constraints. Recently Douglas Eyman and others associated with the techrhet listserv have also announced that they would rather be affiliated with digital rhetoric than with the digital humanities and have cast aspersions on the pursuit of funding by recent digital humanities converts, when a large community

has existed around the journals *Computers and Composition* and *Kairos* and the conference Computers and Writing that dates back to the early 1980s.

Of course, when digital rhetorician and game studies scholar Ian Bogost maintains that more academics need to venture into what Quentin Meillassoux calls "the great outdoors," Bogost isn't merely talking about engagement with conventional politics in the sense of issue politics with a large "P."

> The "broader concerns" that public intellectualism ought to concern itself with are so much larger than politics. Ontology, not ethics, must offer us first principles . . . "The public" is a big place. It's not just a place for states and voters and ballot propositions. It's also a place for legwarmers and silicone breast implants and hot vinegar pickled green beans. (Bogost, "We Think in Public")

For Bogost, the stakes of being a public intellectual are less about being identified as a prominent liberal or conservative professor of record in the media and more about engaging with issues of everyday concern in material culture. He argues that public intellectuals should be interested in interpreting the concrete details of daily life in meaningful ways rather than merely spouting abstractions.

In answering Bogost's objection that public intellectuals tend to stay inside the ivory tower, it's worth noting that many hacktivists not only address the issues of a deliberative public culture defined by the two-party system and English common law but also create works about the quotidian materiality of technology and human culture and the contingent character of consumer comforts in the developed world. For example, hacktivists affiliated with CAE and EDT have created art projects designed to draw attention to the chemical composition and physical properties of genetically modified food and of nanotechnology that creates "beer bottles that are less likely to break, coating in glass that makes it easier to clean, improved water filtration systems, pants that liquid rolls right off of and stronger tennis rackets" (Bennett). Moreover, issues of interest to hacktivists rarely fall neatly along the party lines of the supposed political correctness that Bogost describes. For example, laws for network neutrality, liberalization of copyright laws, and increased passenger privacy have all been thwarted by prominent liberal legislators as well as conservative ones.

During the recent Day of Digital Humanities, Bogost contended that the digital humanities needed to make a similar commitment to "getting real" and to overcoming the legacy of idealism that it inherited ("Getting Real"). To support his argument, he cited the response of fellow academic blogger Alex Reid to evangelize for a fundamentally different kind of digital humanities that could engage with matters relevant to the specific and the everyday:

> For centuries (if not always), the humanities have dealt with objects: books, historical artifacts, works of art, performances, films, etc. . . . We have largely dealt with these objects in two ways. 1) We have addressed our human response,

> our ability to represent these objects to ourselves. 2) We have spoken of "culture" and "materiality" but in a vague, abstract way. As such, when we speak of the digital we have focused on the digital as a mode of representation and we have consider[ed] "digital culture" in broad and abstract terms. A realist ontology allows us to investigate objects in new ways. It makes the laptop, the mobile phone, the AR network, the procedurality of the video game all sites for humanistic investigation in new ways. (Reid)

Bogost remarks that only "age, ignorance, truculence, or idiocy" can explain why "the humanities have tried desperately to pretend that the material world is the same as ever" ("Getting Real").

Perhaps it is not heretical to say that the digital humanities is actually more about bit rot and obsolete file formats than it is about spreadsheets with clean data and perfect, high-definition information visualizations that capture every detail with total fidelity. Because being responsible for digital humanities projects forces scholars to care about mundane matters like maintaining servers and replacing routers and even getting the right kind of heating and cooling systems, this peculiar breed of academic must also come to understand the instability and materiality of the archive rather than its permanence and abstraction. Even the digital files that are migrated into the cloud exist somewhere in time and space. Adopting basic principles of redundancy and distribution in contemporary archival practices should not be mistaken for delivering on a promise of immortality and omnipresence. Futuristic technologies like satellites and data barges still involve all the legal complexities of property and territory in specific geopolitical domains. As more digital humanities projects, such as the recent Digging into Data challenge from the NEH, require international collaboration, the geopolitical, logistical, and material complications of the digital humanities are likely to become of even greater concern. Of course, narratives of progress are much more likely to attract funding than narratives of failure, but the digital humanities has important failure stories to tell that are instructive for the academy as a whole, because universities are increasingly dependent on global networks and computer technologies.

In the end, both the hacktivist and the more mainstream digital humanist must be sensitive to the vulnerability and imperfection of digital knowledge systems to pursue their avocations on a day-to-day basis. In considering the need for supporting a truly hacktivist digital humanities, perhaps we can imagine the forms of activism that they both could undertake and the publics who might respond to their collaborations. As Bruno Latour has argued, the mundane and the institutional can be part of the same assemblage, and everyday politics with a small "p" frequently intersects with epic politics with a capital "P." In thinking about the relationship between forms of symbolic representation that humanists care about and forms of political representation that activists care about, perhaps we need to break some systems to understand how they are made.

NOTES

1. See recent stories about how the United States and Israel have used cyberattacks against the Iranian government such as "Inside The United States' Secret Sabotage of Iran" from National Public Radio, http://www.npr.org/2011/05/09/135854490/inside-the-united-states-secret-sabotage-of-iran.

2. The current group, which describes itself as Electronic Disturbance Theater 2.0, includes Dominguez, Stalbaum, Micha Cárdenas, Elle Mehrmand, and Amy Sara Carroll. Cárdenas and Mehrmand are currently my colleagues in the Culture, Art, and Technology Program at the University of California San Diego's Sixth College.

3. As a performance artist, Dominguez has also deployed radical transparency as a mode of aesthetic hyperbole. While in New York he participated in Josh Harris's famed no-privacy Y2K communal utopian/dystopian happening, "Quiet: We Live in Public." He reminisces about the experience in "We Live In Public and Warhol Highjack," http://bang.calit2.net/2009/08/we-live-in-public-and-warhol-highjack/.

4. The acronym stands for "Bits. Atoms. Neurons. Genes." The group is also known for its critical stance on the nanotechnology research funded by the same institute and housed in the same building.

5. For more on the border as a site for tactical media activism with digital technologies, see Rita Raley, *Tactical Media.*

6. For defenses of the ethics of hacktivism, see Mark Manion and Abby Goodrum, "Terrorism or Civil Disobedience: Toward a Hacktivist Ethic," and Goodrum, "The Ethics of Hacktivism."

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