Code as Power: How the New World Order Is Reinforcing the Old

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In his renowned *Declaration of the Independence of Cyberspace*, John Perry Barlow (1996) rhapsodizes that the digital realm "is an act of nature…[growing] itself through our collective actions." It is a place, he says, where "legal concepts of property, expression, identity, movement, and context do not apply;" where "anyone…may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity;" where "governance will emerge…from ethics, enlightened self-interest, and the commonweal." Barlow's conception of cyberspace is thus a largely unqualified endorsement of the notion that the "weary giants of flesh and steel," the governments and other powerful institutions "of the Industrial World" have no jurisdiction over the goings-on of virtual space. Digital technologies, he declares, render such institutions impotent and irrelevant. But Barlow's arguments—though appealing in the abstract—are highly selective, ignoring a wealth of cultural and economic evidence that suggests the very opposite. In the end, no amount of revolutionary rhetoric can obscure the basic principle that digital technologies are inherently *neutral*—albeit highly potent—tools, given agency only by those who wield them, and hence just as capable of radically empowering existing institutions as enervating them.

Note, for example, that Barlow's characterization of the digital universe is eerily similar to Fred Turner's (2009) depiction of the artistic and technological festival known as Burning Man. Drawing "more than 35,000 participants each year" to the middle of Nevada's Black Rock Desert, the week-long extravaganza is defined by the establishment and celebration of an ephemeral, organically emergent society, founded on principles of "communal production, self-governance, radical inclusion, radical self-expression, and decommodification" (Turner, lecture, 2010). But in stark contrast to Barlow, Turner suggests that promotion of these principles can act, paradoxically, as the *roots* of a new incarnation of institutional power. In the case of Burning Man, the stated ideals "help to structure the manufacture of new information goods" by serving as "cultural infrastructure" that supports the very large and very corporate institutions that produce those goods (Turner, 2009, p. 91). Granted, the

institutions Turner refers to are the cutting-edge Silicon Valley powerhouses from which Burning Man draws many of its attendees—sleek and often seemingly iconoclastic firms that are very different animals from Barlow's weary giants. Yet Silicon Valley, along with the rest of the digital universe, operates under and even actively reinforces *traditional* institutional constraints far more than one might think.

The Burning Man phenomenon can in fact serve as a strikingly precise conceptual model for many of the storied relationships between digital technologies and the cultural and economic institutions that they have disrupted, and have often seemed poised to overthrow. In particular, the histories of virtual identity, Internet governance, and the digital economy all include many examples of high-profile, technology-driven disturbances to the outer layers of traditional institutions. Of course, some such disturbances *do* prove transformative or debilitating to the institutions on which they act. More interesting precisely because they are more rarely cited, however, are the many cases in which—much like the goings-on in Black Rock City—the disruptive forces prove superficial and transient, and the concerned institutions not only survive but thrive, the process of adapting their outer layers to deal with these technological disruptions radically *strengthening* their core structures and consolidating their authority.

A Note on Agency

Before we trace the arc of disruption, adaptation, and ultimate extension of power through these historical examples, it is worth formalizing a previously implied distinction: there is a profound difference between "disrupting" and "undermining." *Undermine* has a variety of potent connotations—implying agency on the part of the actor, enervation of that which is acted upon, and a general permanence of effect—that a word such as *disrupt* does not. A significant and sustained disruption may ultimately have an undermining effect, but this progression is hardly guaranteed, as the following analysis will show. Furthermore, asserting that digital technologies have an effect "by their nature" ascribes a high degree of agency to the technologies themselves—a technologically deterministic position that, while sometimes warranted, becomes dangerously broad in the context of a claim as global as the one at hand.

Revolution…Sort Of

Such distinctions are key, because the history of digital technologies is without question filled with examples of technologically driven disruptions to the *modus operandi* of a wide variety of venerated institutions—disruptions that, at their onset, did indeed appear to be harbingers of the structural collapse of said institutions. In the business world, "the neutral platform of the Internet democratize[s] technical and commercial innovation," and Lawrence Lessig (2008) argues that this "constitutional commitment in the architecture of the network" is what has

allowed upstarts such as Yahoo and Google to challenge market giants such as Microsoft (p. 142). Similarly, the music industry has been reeling of late from the new technological reality that "digital tokens of [read-only] culture" such as music files and e-books, being infinitely copyable and redistributable, "no longer conspire [by nature] with the content industry to protect that industry's business model" (p. 38) in the way that that physical books and CDs did.

So too with international law and Internet governance: the architectural design of packet switching appears to be optimized for foiling any attempts at regulating access to Internet-based resources, thus "'erasing boundaries' and undermining government power," and ultimately "[diminishing] the nation-state's relevance" (Goldsmith & Wu, 2006, p. 3). And cultural institutions—conventions surrounding identity, gender roles, personal responsibility, and so on—seem to be disintegrating rapidly under the pressure of the void that separates physical and virtual spaces, a breakdown that Lessig describes in operation in digitally mediated venues ranging from law school discussion forums to recreational multi-user dungeons (MUDs)[1] (1999, pp. 75-78). Thus a wide variety of deeply rooted institutions have indeed been challenged by the advent of digital technologies—leading some to believe that the norms and power structures that govern the embodied world are destined to crumble into irrelevancy as humanity "[creates] a civilization of the Mind in Cyberspace" (Barlow, 1996).

Business as Usual

Yet a closer analysis reveals that, contrary to the euphoric claims of the cyber-libertarians (and the correspondingly terrified ones of the defenders of the status quo), these disruptions have historically been limited in scope in several important respects. First, despite the apparent cultural chaos generated by the introduction of new technological marvels, many of even the most ostensibly disruptive digital technologies have had a strikingly shallow impact on the philosophical foundations of existing institutions.

Commercial institutions in particular have displayed a high degree of internal cultural consistency, even while undergoing rapid technological retrofitting. Byron Reeves (2009) and Tiziana Terranova (2000) both observe a profound, digitally driven shift in the relationship between work and play in the modern world, and suggest that those two pursuits may soon become somewhat indistinguishable. Such ideas about future models of labor may seem extraordinary—and, superficially, they are—but in many ways those forms are simply new means for furthering the traditional operating mandate of factory-based production: maximizing worker output while minimizing costs. Contributors to free software projects of the 1990s might have liked to couch their work in terms of "altruism," but their efforts were usually subsidized by managers who saw

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[1] Non-graphical predecessors to immersive worlds such as Second Life and World of Warcraft

their labor in classic, purely profit-driven terms: a means by which to "give away something of relatively small value, and [receive] back something of much greater value" (Lessig, 2008, p. 180). With respect to the media industry, Lessig similarly observes that, while digital technologies may be eroding the dominance of traditional *forms* of read-only media, that very process has the effect of "[extending read-only] *culture* beyond the unavoidable limits of twentieth-century technology" (p. 34; emphasis added).

This cultural point is perhaps most clearly evident in cultural conventions and expectations themselves. It would seem that the affordances of virtual worlds such as LambdaMOO and Second Life should promote extensive identity play and a general breakdown of traditional social norms—and Julian Dibbell's (1993) "A Rape in Cyberspace," Tom Boellstorff's (2008) observations of Second Life, and many others' accounts all suggest that such phenomena are indeed taking place. Yet research suggests that, despite the extensive warping of superficial elements of identity and interaction inherent in these environments, deeper (i.e., institutionalized) cultural assumptions and practices remain very firmly ensconced. Fox observes that "content and critical analyses have revealed that videogames and virtual worlds are perpetuating stereotypical portrayals of women" (Fox, 2009, p. 147). Bailenson's findings are still more broad: "people conform to stereotypical behaviors associated with their digital self-representations" (Bailenson, 2008, p. 88), noticeably modifying their real-world behavior to reflect norms related to the height and general degree of attractiveness of their virtual counterparts. Thus, while individual residents of the digital universe may and often do choose to shed or reshape many of their "real-world" characteristics in their on-line avatars, even their new digital selves will likely have to operate under the pressures of age-old social constructs concerning gender, race, age, and so forth. Just as in the physical world, such pressures can be ignored—but as social institutions, they are still very much present in technologically mediated spaces.

Appropriation

Even while maintaining strong cultural coherence in the face of technological disruptions to their traditional practices, institutions of all kinds also display a remarkable aptitude for adapting those practices to new technological climates—often by appropriating the technologies themselves. Economic powerhouses, always vying for market dominance, have tended to adopt new technologies with particular alacrity (largely out of necessity, since failure to keep up with technological progress would present an extreme competitive liability). In this vein, Lessig describes the process by which the free software paradigm—originally viewed by the corporate software industry of the early 1990s as impractical, subversive, and the digital equivalent of "communism" (Lessig, 2008, p. 179)—was rapidly subsumed into that very same institutional structure, spawning an

explosion of new, highly lucrative, profit-driven companies and a variety of software projects that benefited companies already in existence. Similarly, an initially Internet-leery content industry was quickly brought around by distribution platforms such as iTunes, whose "success supported the idea that a wide range of content might be sold digitally on the same model that defined the content industry of the twentieth century"—again demonstrating that cultural consistency—"by metering the number of copies sold" (Lessig, 2008, p. 42).

Governmental institutions have proven equally adept at appropriating the powers of technological tools that once threatened their hegemony. Jack Goldsmith and Tim Wu recount the remarkably speedy process by which Yahoo—the one-time champion of technologically driven subversion of government regulatory authority—was trapped, beaten, and forced into compliance by the French legal system. Ironically, the government's case rested on the implications of precisely the same region-identification technologies that Yahoo itself had used to extend its products beyond the borders of *apparent* geopolitical legal authority. And the reversal in the Yahoo case was relatively modest: one has only to look at China to see compelling proof that ostensibly borderless, "liberating" information technologies can be easily transformed into tools of coercive geopolitical regulation and subjugation (Goldsmith & Wu, 2006). Indeed, digital technologies are generally easily adaptable for use as surveillance and control systems. If any provider of digital services "does not like a certain behavior, then at least in some cases it can…use code to regulate its [users]" (Lessig, 1999, p. 71). Digital platforms that are free from such regulation are so by dint of their creators' "choice—not fate, not destiny, and not natural law" (Goldsmith & Wu, 2006, p. 90).

Institutional Empowerment

These examples all strongly testify that "control of code is power" (Lessig, 1999, p. 60); whether that power is revolutionary or hegemonic in nature depends on who is doing the controlling. It does not require a large logical leap to establish that the entities that are often best positioned to control code—and thereby further increase their influence—are in fact pre-existing institutions. That, as it happens, is precisely how many large institutions have responded to technological incursions: by co-opting the technologies in question—without substantially altering their core institutional philosophies or structures—and becoming vastly more powerful in the process.

Corporate institutions have certainly gained a tremendous amount of power as the speed and pervasiveness of digital technologies have continued to grow. Indeed, most of the "potential for control," which Lessig (1999) proposed might one day be harnessed by companies such as AOL, has in fact become standard operating procedure for a wide range of information firms (p. 71). An Internet Service Provider will often "[slow] the response time for a certain kind of service it wants to discourage" (p.

71). [2] Sites concerned with preventing child predation, illegal file sharing, and other actionable offenses are certainly "identifying patterns of behavior that [their] monitors…watch, based on the fear that people with patterns like X are typically dangerous" (p. 71). And nearly every commercial website on the Internet is "channeling the surfer through ads that it wants customers to see" (p. 71). Lessig's (2008) accounts of Netflix and Amazon—the latter of which, he placidly observes, "watches me more carefully than does any thing or person in the world" (p. 49)—and Microsoft's and Yahoo's successful efforts to cultivate vast networks of volunteer laborers (pp. 200-203) should leave no doubt that the web-based firm "has a tool of control that others in the market, but outside cyberspace, do not have" (Lessig, 1999, p. 71).

Traditional nation-state governments have also broadened the scope and granularity of their influence by taking advantage of the proliferation of digital technologies. No country provides a more "extreme example" of this increasing capacity for control than does China (Goldsmith & Wu, 2006, p. 90). While it is true that political activists and other "dissidents have used the Internet to the government's disadvantage," the Chinese government's "extraordinary system of monitoring and filtering" digital content has nevertheless embedded in Chinese cyberspace a decidedly pro-institutional set of values, specifically "Chinese nationalism, often laced with virulent anti-American or anti-Japanese sentiment" (p. 98). Thus, "the government is using the Internet…to direct anger away from the Communist government and toward China's foreign enemies" (p. 98). Conceptually, this is hardly a new tactic: the Chinese government has used this kind of propaganda as a population-control technique extensively throughout much of modern (but pre-digital) history (p. 99). The difference in this case is that, by harnessing the power of digital technologies, said propaganda can be made instantaneously distributable, infinitely reproducible, and even participatory. For in using code to monitor and sculpt the tone of discourse, but not shut it off entirely, the government permits at least that segment of the population with pro-government sentiments to feel personally invested in the process of fabricating hyper-nationalistic dogma.

Even the strange and apparently insignificant incident chronicled by Dibbell (1993) in "A Rape in Cyberspace" provides a compelling testament to the cold realities of technologically driven consolidation of institutional authority. Dibbell recounts the capricious disruption of the social fabric of a virtual community (LambdaMOO) at the hands of one deviant avatar (Mr. Bungle)—a disruption that sent the virtual society as a whole into profound philosophical turmoil (Lessig, 1999). In Lessig's analysis, the scope and scale of the disruption demonstrated that the conceptual divide between "real" and "virtual" spaces can render the inhabitants of on-line worlds unable to effectively regulate themselves—

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[2] See http://news.cnet.com/8301-1023_3-10021654-93.html. Stanford University engages in precisely the same practice.

meaning that the only remaining option is to have a higher, institutional authority handle such regulation. Indeed, the subsequent (and unprecedented) deletion of the rogue account by one of the LambdaMOO administrators ("wizards") was an implicit but clear endorsement and consolidation of institutional authority. Still more significant, the debate that followed "marked the passage of the space from one kind of place to another" (Lessig, 1999, p. 76). Despite its residents' insistence that LamdaMOO should not "respond by creating a world of regulation" (p. 76), this isolated episode prompted the community to evolve rapidly from a space that was egalitarian and normless to one with rules (for voting) and a governing structure. That structure, it should be noted, was imported directly from the ancient institution of participatory democracy.

Conclusions

It is telling—not to mention amusing—that one of the approaches China has incorporated into its "Great Firewall" is precisely the same strategy that Alexander Galloway (2006) suggests "some controlling authority [might use] to ban China from the Internet": namely, "simple modification of the information contained in the [regional] servers at the top of the inverted [DNS] tree" (p. 10)[3]. In other words, DNS manipulation is a technological weapon that can be wielded in equal measure by anyone, for any reason. Comcast can (and does) use the technique, in a localized form, to show its customers sponsored links whenever they accidentally mistype a domain name. It is equally feasible for individuals to use the same technique to prevent companies (e.g., Comcast) from showing ads altogether. The point is simple: "the only *nature* of digital technology is that it conforms to how it is coded" (Lessig, 2008, p. 40). And that, in turn, depends on who is doing the coding.

Yet it may not be sufficient even to conclude that digital technologies have a net neutral effect on the influence of large institutions in modern society. For although the technologies themselves may be agnostic, there is often a tremendous difference in power and motivation between those who wield them for counter-hegemonic purposes and those who use them to defend the status quo. Indeed, the proliferation of digital technologies has given large institutions a compelling reason to take increasingly active, defining roles in the sculpting of the code that increasingly powers modern society. As a result, the technologies that once seemed destined to dethrone many of the most deeply rooted social, political, and economic institutions of the pre-digital age have instead been decisively appropriated by and enfolded into those institutions' structures, while leaving their core motivations (regulating interpersonal interaction, governing societies, and generating wealth) largely unchanged.

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[3] See Goldsmith and Wu (2006, pp. 92-94) for a technical description of how the Great Firewall works (as far as we know). The immediate failure of freechina.net to resolve to an Internet Protocol (IP) address is highly suggestive of Domain Name System (DNS) manipulation.

There is no question that digital technologies do have the capacity to be profoundly disruptive to preexisting institutions, and examples of such phenomena abound in politics, education, journalism, social dynamics, and countless other thematic areas. The point stands, however, that these technologies are too often assumed to be intrinsically progressive, "guaranteed" to promote individual liberty and equality over time—and that this perspective is simplistic and misleading. As Galloway (2006) puts it, "since new communication technologies are based on the elimination of centralized command and hierarchical control, [many believe] it follows that the world is witnessing a general disappearance of control as such. This could not be further from the truth" (p. 8).

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