How Digital Technology Found Utopian Ideology: Lessons From the First Hackers' Conference

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In the mid-1990s, as the Internet and the World Wide Web went public, a utopian near-consensus about their likely social impact seemed to bubble up out of nowhere. The Net would level social hierarchies, distribute and personalize work, and dematerialize communication, exclaimed pundits and CEOs alike. The protocols of the Net were said to embody new, egalitarian forms of political organization. They offered the technological underpinnings for peer-to-peer commerce, and with them, claimed many, an end to corporate power. And well above the human plains of financial and political haggling, suggested some, those same protocols might finally link the now-disembodied species in a single, harmonious electrosphere.

Individually, these predictions popped up across American culture – and ultimately, around the world – throughout the following decade. But where did they come from? And how did they suddenly seem to be everywhere at once?

I raise these questions not so much to try and answer them (oh, the pages that would take!) as to turn our collective attention backward. Over the last ten years, cyberculture scholars have examined myriad forms of social life emerging in and around the wires. Many have also turned a

critical eye on the discourses of cyberspace and their ideological effects. Yet almost all have left these two tasks unconnected.

To see what I mean, consider the two dominant approaches to explaining the rise of digital libertarianism in America. In the first, scholars have pointed out that new technologies as diverse as telephones and airplanes have always generated utopian hopes (Agre 1998, 2001; Healy 1997; King 2000; Miller 1995; Sardar 1996; Sobchak 1996). "The basic conceit is always the same," writes Langdon Winner (1997, p. 1001), "[N]ew technology will bring universal wealth, enhanced freedom, revitalized politics, satisfying community, and personal fulfillment." In the second, critics have read techno-utopianism as the self-serving ideology of an emerging "virtual class" (Kroker and Weinstein 1994; Terranova 1996; Turner 1999; Borsook 2000; Barbrook and Cameron 1998). Some, like Barbrook and Cameron (1998), have focused on the ways in which versions of techno-utopian discourse have helped managed the structural and cultural contradictions of working in high-tech. Others, such as Kroker and Weinstein (1994), have asserted that a new, transnational class has emerged alongside networked computing machinery, and that its members have developed a techno-utopian ideology to support their class position.

Each of these perspectives has substantial analytical value. The first reminds us that the Internet and the Web were not the first "revolutionary" technologies and it invites us to compare our digital present to a steam-powered or newly electrified past. The second points to the ways that emergent social groups have turned networked computers into ideologically charged symbols and asks us to keep our eye on the ways that new media can be recruited into ongoing power struggles. Yet, despite their usefulness, neither of these perspectives explains just *how* digital

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technologies and utopian ideology came together. Instead, each reifies an analytical category –

technology in the first case, class in the second – and then declares it a source of ideology. In the

process, each walls off from discussion all of the social work that sociologists (Becker 1982;

Berger and Luckman 1966), and particularly, sociologists of science and technology (Fleck 1979;

Bijker, Hughes and Pinch 1987; Bijker and Law 1992; Latour 1991, 1993; MacKenzie and

Wajcman 1999), have shown goes into the construction of both ideology and technology.

To the extent that cyberculture scholars accept these walls, they tend to become readers of

ideological texts. They might study the pages of *Wired* magazine and rail against its technophilic,

macho prose, for instance, or search contemporary computer advertising for signs of virtual class

self-promotion. This is useful work, but it leaves us critical amnesiacs: with it, we can articulate

precisely where we are, culturally speaking, yet we can't say how we got here. For that, we need

a historical version of what Stuart Hall has called a theory of "articulation" (Hall and Grossberg,

1986, p.45; see also Slack, 1996). As Jonathan Sterne has pointed out, cultural studies scholars

have long argued that "there are no necessary correspondences" between ideologies, practices,

and social groups (Sterne, 1999, p. 263). Rather, those correspondences are established by

relevant social groups in particular times and places. It is these highly local, time-bound

processes we need to explore. In the case of cyberlibertarianism, for example, we need to go

back into the past and identify the social work that has gone into aligning emerging digital

technologies with libertarian political ideals. By uncovering this work, we can relocate

contemporary cyberculture in its historical context.[1] We can trace its emergence not simply to

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[1] We do have precedents for this sort of work. Paul Edwards' study of Cold War computing, *The Closed World*

(1996) offers a rich depiction of the multiple roles computers played in shaping geopolitics, psychology, and

the rise of the Net or the Web, but to negotiations surrounding the integration of those technologies into ongoing social and cultural transformations. At the same time, we can help integrate the study of technological culture into the study of culture more broadly.

The Case of the Hackers' Conference

To give a sense of what this kind of work might look like, I want to explore a single important moment in the development of utopian information ideology: the 1984 Hackers' Conference. In the early 1980s, hackers were widely depicted in the popular press as anti-social and potentially criminal (Levy 1984; Thomas 2002). By the mid-1990s however, they had come to embody the liberated information worker. Their long hair and late-night prowlings were no longer depicted as evidence of deviance, but marks of genius. In popular accounts at least, hackers had become entrepreneurial hippies who wielded computers like LSD and they were transforming America into a turned-on, high-tech New Economy. How did this happen?

Part of the answer is that a few hackers actually *were* hippies. Many individual computer developers in the 1960s and 1970s had countercultural sympathies, and countercultural ideals played an important role in the development of the personal computer (Freiberger & Swaine 1984, Markoff, 2005). Yet, this historical fact is only a piece of the puzzle. As a close look at the

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aesthetics during and after the 1950s. N. Katherine Hayles' book *How We Became Posthuman* (1999) explores the development of cybernetic subjectivity, and with it, a deep transformation in American cultural politics. Yet, Edwards and Hayles have written primarily about events that occurred some fifty years ago. What remains to be written are the histories of how we got from there to here. For a particularly insightful review of the literature in this area, see Rosenzweig (1998).

Hackers' Conference suggests, transformations in the symbolic character of hackers required face-to-face ideological work, carried out within a forum built for the purpose.[2]

This work began with the 1984 publication of San Francisco Bay Area journalist Steven Levy's book, *Hackers: Heroes of the Computer Revolution*. In it, Levy identified three generations of computer hackers. The first emerged at MIT in 1959. They were undergraduates who clustered around a giant TX-0 computer that had been built for defense research and then donated to the Institute. Within several years, these undergraduates were joined by a variety of Cambridge-area teenagers and MIT graduate students and were working with a series of computers donated by the Digital Equipment Corporation (DEC). By 1966, most gathered on the ninth floor of Technology Square, in Marvin Minsky's Artificial Intelligence ("AI") Laboratory.

Within the AI Lab, writes Levy, there were two kinds of workers: planners and hackers. The planners were theoreticians, usually of the mind, who thought of computers as tools that could be used to generate or model information. The hackers focused on the computer systems themselves and on seeing what they could do. Within the lab, a culture clash emerged. Theory-oriented graduate students, equipped with well-funded and well-organized careers but not necessarily with computer programming expertise, resented the hackers' claims for computer time, as well

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[2] Developed by sociologist Bennett Berger, the concept of "ideological work" denotes the work a community must do when its shared beliefs encounter material conditions that render those beliefs inaccurate and ineffective as bases for action (Berger 1981, pp. 18-21). Faced with a conflict, Berger writes, groups can change or give up their beliefs, try to change their circumstances to make the beliefs more true, or, "[s]omewhere between these two, a group may accommodate its beliefs to the circumstances it cannot alter, while manipulating those it can to achieve the best bargain it can get" (p. 21). All three strategies require ideological work.

as their free-wheeling style. David Silver, for instance, was then a fourteen-year-old hanger-on at the lab who solved a seemingly impossible problem in designing a robot insect. He recalls that his work

> drove [the AI theoreticians] crazy . . . because this kid would just sort of screw around for
> a few weeks and the computer would start doing the thing they were working on that was
> really hard . . . They're theorizing all these things and I'm rolling up my sleeves and doing
> it . . . you find a lot of that in hacking in general. I wasn't approaching it from either a
> theoretical point of view or an engineering point of view, but from sort of a fun-ness
> point of view.

<div align="right">(quoted Levy 1984, p. 104)</div>

According to Levy, this point of view characterized the work of two subsequent generations of innovators. The first of these were the "hardware hackers" of the 1970s. Clustered in and around the San Francisco Bay area, they included the young founders of Apple Computer, Steve Jobs and Steve Wozniak, as well early proselytizers for personal computing such as Lee Felsenstein, Bob Albrecht and Ted Nelson. For this generation, Levy argued, computing could be seen as a form of political rebellion. Computers may have always been large and centralized, they may have always been guarded by institutionalized experts, they may have been used to organize the war in Vietnam, but programmers like Felsenstein and Nelson wanted to transform them into tools of personal liberation. The second generation to follow the AI hackers of MIT knew little of this countercultural legacy. They were the "young game hackers" of the early 1980s who had grown up working with the micro-computers that the previous generation had struggled to invent (Levy 1984, p. vix). They included Ken Williams, founder of game-maker On-Line Systems and his wife Roberta (designer of the game "Mystery House"), on-line security expert Mark

Ducheneau and others. This generation worked in the shadow of Atari, the maker of "Pac Man," but unlike Atari, which was infamous among computer designers for its organizational hierarchy, they also aimed to maintain an open management structure within their organizations. Though they worked in a corporate setting, their designers would be "hackers" – semi-independent, creative individuals – not drones.

Above all, Levy (1984, pp. 27-33) argued, though they had never met, members of all three generations shared a single set of six values, a "hacker ethic:"

1) Access to computers – and anything which might teach you something about the way the world works – should be unlimited and total;

2) All information should be free;

3) Mistrust Authority – Promote Decentralization;

4) Hackers should be judged by their hacking, not bogus criteria such as degrees, age, race, or position;

5) You can create art and beauty on a computer;

6) Computers can change your life for the better.

In part because of the countercultural overtones of this list, Levy's work drew the attention of Kevin Kelly, future editor of *Wired* magazine, and Stewart Brand, former Merry Prankster and founder of one of the most influential publications to come out of the counterculture, the *Whole Earth Catalog*. Since the mid-1970s, Brand had edited a magazine devoted to cybernetics, ecology, and right living, called the *CoEvolution Quarterly*, as well as occasional re-issues of the *Whole Earth Catalog*. He had recently hired Kelly, a former backpacker and Christian mystic, to

edit the *Quarterly*. In 1983, Brand had been given a $1.3 million advance to create a *Whole Earth Software Catalog*, in the hope that he could do for the booming PC market what he had done for the back-to-the-land movement fifteen years earlier. After reading Levy's book, Brand and Kelly decided to hold a conference at which they would bring the three generations of hackers together. As Kelly later recalled, he and Brand wanted to see whether hacking was "a precursor to a larger culture" and they wanted to "witness or have the group articulate what the hacker ethic was" (Kelly 2001).

Something like 150 hackers actually arrived to spend a weekend at Fort Cronkhite, in the Marin Headlands just north of the Golden Gate bridge. They included Steve Wozniak of Apple, Richard Stallman, Ted Nelson and Theodore Draper – known as Captain Crunch for his discovery that a toy whistle he found in a box of the cereal gave just the right tone to grant him free access to the phone system. Some worked alone, part-time at home; others represented institutions as MIT, Stanford, Lotus Development, and various software makers. Most had come to meet others like themselves. Their hosts offered them food, computers, audio-visual supplies and places to sleep – and a regular round of facilitated conversations.

By all accounts, two themes dominated those conversations: the definition of a "hacker ethic," and the description of emerging business forms in the computer industry (Schrage 1984; Markoff et al. 1985; Elmer-DeWitt 1984; Brand 1985). The two themes were of course entwined. The "hacker ethic" that Levy described – the single thread ostensibly running through all of the participants' careers – had emerged at a moment in the commercial development of computing at which sharing products and processes improved profits for all. By the mid-1980s however, the

finances of computer and software development had changed radically. As Stewart Brand

pointed out, in what would soon become a famous formulation, information-based products

embodied an economic paradox. "On the one hand," he said, "information wants to be expensive,

because it's so valuable. The right information in the right place just changes your life. On the

other hand, information wants to be free, because the cost of getting it out is getting lower and

lower all the time. So you have these two fighting against each other" (quoted Brand 1985, p.

49).

Throughout the conference, hackers discussed different ways they had managed this dilemma.

Some, like Richard Greenblatt, an early MIT hacker, argued that source code must always be

made freely available, in keeping with the ethos of what has since become the Free Software

movement. Others, like Robert Woodhead, suggested that they would happily give away the

electronic tools they had used to make products such as computer games, but that they would not

give away the games themselves. "[T]hat's my soul in that product," explained Woodhead. "I

don't want anyone fooling with that" (quoted Brand 1985, p. 48). Bob Wallace discussed how he

had marketed his text editor PC-WRITE as Shareware (in which users get the software for free

but pay if they want documentation and support), while Andrew Fluegelman, discussed how he

had marketed his telecommunications program PC-TALK as Freeware (in which users

voluntarily pay a small fee to use the software). Still others, like Macintosh designer Bill

Atkinson, defended corporate prerogatives, arguing that no one should be forced to give away

the code at the heart of their software.

The debate took on particular intensity because according to the "hacker ethic," certain business practices – like giving away your code – allowed you to claim the identity of a "hacker." In part for this reason, participants in a morning-long forum on "The Future of the Hacker Ethic" led by Levy began to focus on other elements of the hacker's *personality* and to modify their stance on the free distribution of information goods. For instance, participants agreed that hackers were driven to compute and that they would regard people who impeded their computing as bureaucrats rather than legitimate authorities. By and large, they agreed that the free dissemination of information was a worthy ideal, but in some cases, it was clearly only an ideal (Brand1985). If they could not agree on proper hacker business practice, they could agree that being a hacker – in this case, being the sort of person who was invited to the Hackers' Conference – was valuable in its own right. As Lee Felsenstein (2001) pointed out, "that little bit of cultural identity [was] extremely important." In the popular press, hackers had been characterized as machine-obsessed loners. Gathered together in the stucco halls of Fort Cronkhite, hackers could recognize themselves as something else. Lee Felsenstein recalls feeling empowered: "Don't avoid the word 'hackers.' Don't let somebody else define you. No apologies: we're hackers. We define what a hacker is . . . nobody else" (ibid.).

In the end, the group did not come to any consensus on the right approach to take toward the emerging challenges of the software industry. But in terms of the shift in public understandings of hacking, what was most important was simply that the hackers had brought the definition of hacking into alignment with emerging economic conditions. At the Hackers' Conference, Brand and company provided computer workers with a venue in which to develop and temporarily live a group identity around the idea of hacking and to make sense of emerging economic forms in

terms of that identity. This work had the effect of rehabilitating hackers in the public eye, but it also had the effect of explicitly and securely linking countercultural people and a countercultural ethos to the world of computing. Virtually all of the journalistic reports to emerge from the Conference echoed John Markoff's comments in *Byte*: "Anyone attending would instantly have realized that the stereotype of computer hackers as isolated individuals is nowhere near accurate" (Markoff et al. 1985). Yet, a few of those same reports picked up on another theme as well. Several either quoted or paraphrased Ted Nelson, when he exclaimed "This is the Woodstock of the computer elite!" (Schrage 1984; Markoff et al. 1985). One listed Stewart Brand among the "luminaries of the personal computer 'revolution'" (Markoff et al. 1985); another described Brand as a "long-time supporter of hackers" (Florin 1985). Neither was quite true: until tapped to start the *Whole Earth Software Catalog*, Brand had had only fleeting contacts with the burgeoning computer industry. Quietly, almost without noticing it, the invited reporters had begun to intertwine the countercultural play of Woodstock, and countercultural players such as Brand, with an industry and a work style that had emerged within and at the edges of such culturally central institutions as MIT, Stanford, and Hewlett-Packard. Hackers were not simply highly individualistic and innovative engineers. They were cultural rebels -- and their computers were the new tools of utopian cultural change.

Conclusion

The Hackers' Conference of 1984 was only one moment in the wedding of the libertarian idealism of the counterculture to the inventions and inventors of computing technology, but it was an important one. Over the next fifteen years, its attendees would play major roles in shaping both the computer industry and the press's coverage of that industry. New organizers in

California turned the Conference into an annual event and programmers went on to stage similar gatherings in Israel, Malaysia and Belgium.

For the field of cyberculture studies and particularly for that wing of it that deals with questions of technology and ideology, the Hackers' Conference offers several useful conceptual tools. Perhaps the most important is simply the evidence it presents that the ways we think about machines and technical workers have historical origins and that with a little digging, these origins can be identified. Finding these moments opens up the formerly closed analytical categories of technology and class and allows us to see them as categories that have in fact co-evolved. At the same time, it allows us to acknowledge the roles non-technicians have played shaping our perceptions of life with digital technologies. In the Hackers' Conference, we see that it is not hackers alone who bring together countercultural ideals and computer-based work; rather, it is hackers acting in concert with cultural entrepreneurs such as Stewart Brand and journalists such as John Markoff. In this sense, we can see that the hip, entrepreneurial hacker who would become so visible in the 1990s was not so much a hippie in his own right as the representative of a cultural category cobbled together by counterculturalists and technologists working in collaboration.

Moreover, we can see that this collaboration took place in a forum. This fact has two implications for cyberculture studies. The first is that if we hope to understand the rise of cyberlibertarianism and the development of future techno-ideologies, we would do well to try to identify the sorts of forums in which technologists and cultural entrepreneurs come together. A survey of work along these lines to date suggests that forums might be found within one of three

concentric professional rings, arrayed in decreasing proximity to computing technologies. The

first ring consists of those "close to the machine:" inventor and designer communities and user

communities (communities which often overlap in the digital environment). As research into the

social history of earlier technologies has shown, such communities often play a key role in

shaping both the mechanics and ideological impact of new technologies (Bijker 1995; Marvin

1988). We could imagine a second ring of mid-sized organizations that have as a primary or

nearly primary function the turning of new technologies into symbolic goods. These

organizations might range from think tanks to corporate marketing departments to e-business

start-ups, and recently several have begun to attract attention from scholars (Brooks and Bowker

2001; Hassan 2003; Werry 2001). We can think of journalists, pundits and commercial

advertising agencies as a third ring. Though members of this ring will be in connected to

members of the other two (and may also even be members of the other two as well), they often

serve as hosts for the sorts of collaborative gatherings represented by the Hackers' Conference.

The second implication of the Hackers' Conference is broader and in terms of cyberculture

studies' potential contribution to social theory, more serious. The Hackers' Conference happened

to be an off-line forum, an embodied weekend at a rundown former Army base. But there is no

reason that online forums could not also serve as sites at which to bring together representatives

of multiple communities and develop ideological resources that could in turn be exported to the

public at large. On the contrary, there is already substantial evidence that emerging online

collaborative forums ranging from virtual communities to massive, multi-player online games

have been doing this work for some time (Rheingold 1993; Kollock 1999; Turner 2002; Li 2003).

As we study new forms of technologically enabled sociability, we have an opportunity to explore

not only online cultures, but the ways in which online collaborations help generate the symbolic and ideological resources out of which all cultures are made.

In short, we have an opportunity to make the study of cyberculture as central to the study of society as networked computers have become to the experience of social life.

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