The Mutual Co-construction of Online and Onground in Cyborganic: Making An Ethnography of Networked Social Media Speak to Challenges of the Posthuman

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Abstract

Cyborganic, the subject of my study, was a San Francisco community whose members brought Wired magazine online, launched Hotwired; led the open source Apache project; and staffed and started dozens of Internet enterprises—from Craig's List to Organic Online—during the first decade of the Web's growth as a popular platform (1993-2003). The imaginaries, practices, and genres of networked social media developed in this group figured in the initial development of Web publishing and prefigured contemporary phenomena such as Facebook and a host of other media collectively known as "Web 2.0." While my ethnography examines the symbiosis of online and face-to-face sociality in the growth of Web publishing, this paper focuses on that symbiosis at a more micro-level, looking at specific forms and practices of networked social media in Cyborganic that have become predominant on the contemporary U.S Internet. Anthropologists have challenged the assumed "isomorphism between space, place, and culture" (Gupta and Ferguson 1992: 34) and have theorized "technological infrastructures as sites for the production of locality" without a necessarily geographic referent (Ito 1999:2). Despite this decoupling and the tendency to associate online sociality with fragmentation and dematerialization, my Cyborganic study demonstrates that the intermediation of online and onground can work to consolidate and extend, rather than attenuate, affiliations based on place and embodiment that anthropologists have long seen as defining sources of identity and cultural difference.

The online/offline conceptual dichotomy so prominent in early social research on the Internet has largely been supplanted by attention to ways the Internet is taken up in everyday life, and by growing appreciation for the mutuality of these two domains. Communications scholars (Jones 1995, 1997, 1998; Shields 1996; Gurak 1999), social geographers (Kitchin 1998), sociologists (Smith and Kollock 1999; Wellman and Gulia 1999) and ethnographers (Miller and Slater 2000; Hine 2000) have all emphasized the interdependence of online and face-to-face and the way the "Net itself is mediated by everyday life (Shields 1996:8). The mutuality of online and onground in the social construction of networked media has been the most distinct finding of my ethnography of Cyborganic, a community of San Francisco Web geeks I studied from 1993 to 2003. As I will show, this mutuality is writ large in the regional history of the Bay Area, and writ small in new practices, forms, and genres of networked media and sociality that developed during the initial period of the Web's growth as a popular platform and have since become predominant on the contemporary Internet.

Attention to this mutuality in Cyborganic, I argue, suggests ways to think about and respond to challenges to inherited conceptions of the anthropological subject that I refer to in this essay as challenges of the posthuman. Though I recognize the term *posthuman* is one anthropologists might find problematic (e.g., Boellstorff 2008:28-29), and even share some disciplinary discomfort with the word, I use it because engaging the figure of the posthuman proves valuable to understanding questions of virtuality, materiality, and embodiment that attend the reconfigured relations of space, time, and being in the cultural worlds of computer-mediated sociality I study. Engaging the posthuman brings these questions into a broader discourse around challenges to inherited conceptions of the human subject posed, not only by the proliferation of technologically-mediated sociality, and not only in anthropology, but by a succession of postcolonial, feminist, and postmodern deconstructions[1], and decouplings of space, place, and culture (Gupta and Ferguson 1997a, 1997b, 1997c; Appadurai 1990, 1991; Harvey 1989, Soja 1989) that have been felt throughout the humanities since the 1980s. By speaking of these together as challenges of the posthuman, I want to argue that, while it is vital for anthropologists to recognize diverse ways in which the historically specific construction called *human* continues to give way to a different construction, which some call *cyborg* (e.g. Haraway 1991, Downy and Dumit 1998) and others *posthuman* (e.g., Hayles 1999, Haraway 2007), it is equally vital to understand that this shift does not require the erasure of embodiment from anthropological conceptions of human subjectivity. I begin by grounding these arguments in my ethnography of Cyborganic to demonstrate how digital intermediation can reconfigure experiences and imaginaries of place, identity, and embodiment, without dematerializing these as sites of subjectivity, or rendering them obsolete as sources of anthropological insight. After making this

[1] Hymes, Reinventing Anthropology (1974); Said, Orientalism (1978), "Representing the Colonized: Anthropology's Interlocutors," (1989); Fabian, Time and the Other: How Anthropology Makes Its Object (1983); Geertz, Works and Lives: The Anthropologist as Author (1988); Clifford, The Predicament of Culture: Twentieth Century Ethnography, Literature, and Art (1988); Clifford and Marcus, eds., Writing Culture: The Poetics and Politics of Ethnography (1986); Marcus and Fischer, Anthropology as Cultural Critique: An Experimental Moment in the Human Sciences (1986).

analysis of Cyborganic, I return to the broader questions of the contemporary anthropological subject implicit in the challenges of the posthuman referenced in my title.

Cyborganic was an intentional community that formed in San Francisco in the early 1990s. It was a neighborhood cooperative, social clique, artist organization, professional network, business enterprise, and social project in which I was a participant observer for approximately ten years. Cyborganic members brought *Wired* magazine online; launched *Hotwired*, the first ad-supported online magazine; set-up Web production for CNET; led the Apache open source software project; and staffed and started dozens of Internet enterprises—from Craig's List to Organic Online—during the first decade of the Web's popular development (1993-2003). Cyborganic engaged the Web as a platform for self-publishing and featured some of the earliest online diaries before these were called "blogs," most notably, *Links from the Underground*, started in 1994 by Justin Hall, a "founding father of personal blogging"[2] and *Brainstorms* by Howard Rheingold. Cyborganic members' production and consumption of new imaginaries, practices, and genres of networked social media figured in the initial development of Web publishing and prefigured contemporary phenomena such as Facebook and a host of other media collectively known as "Web 2.0."[3] For example, Dominic Sagolla, a key informant in my Cyborganic research, co-created the micro-blogging service Twitter in 2006.

My study of Cyborganic examines the complex symbiosis of online and face-to-face both large-scale, in the regional history of the Bay Area and growth of the Web industry; as well as small-scale, in new forms and practices of technologically mediated sociality. As ethnography, it illustrates concretely the abstract conceptions of subjectivity I engage in my concluding discussion of the posthuman. By situating Cyborganic geographically and historically, and looking at the way new media technologies were integrated into the daily lives and experience of my informants, I work to show *in vivo* the formative role of place and embodiment in the social construction of networked media. The mutuality of onground and online I detail in the Cyborganic case corresponds to the theoretical conception I will later present of the human subject as a material-informational entity, simultaneously a construction of material and social worlds.

Onground, as a local, face-to-face community, Cyborganic was comprised of the three concentric, overlapping entities.

1. Several group households on a single block of Ramona Avenue, known as "The Ramona Empire," which had a peak residency of approximately 20 during the years 1995-1999;

2. The Ramona LAN (local area network), a physical network of computers, wires, and buildings that extended at its height across 11 separate rental apartments, providing approximately 35 people with full-time residential connections to the Internet;

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[2] Jeffrey Rosen, "Your Blog or Mine?," the *New York Time Magazine*, December 19, 2004.
[3] Facebook (facebook.com), which claims 400 million users worldwide, and Twitter (twitter.com), which reports about a quarter that number, are two of the most popular social networking sites but the phenomena extends to a host of many-to-many online media that center on self-publishing, user-generated content, and of course, social networks.

3. Weekly community potluck dinners, known as Thursday Night Dinner, or TND. With approximately 100 regular attendees from August 1995 through 1996, TND was, as *Wired News* put it, "the place to be for San Francisco's up-and-coming Web workers" (Boutin 2002) during the dotcom boom of the 1990s.

These three place-based aspects of Cyborganic—The Ramona Empire, local area network, and Thursday Night Dinners—are diagrammed below in Figure 1.

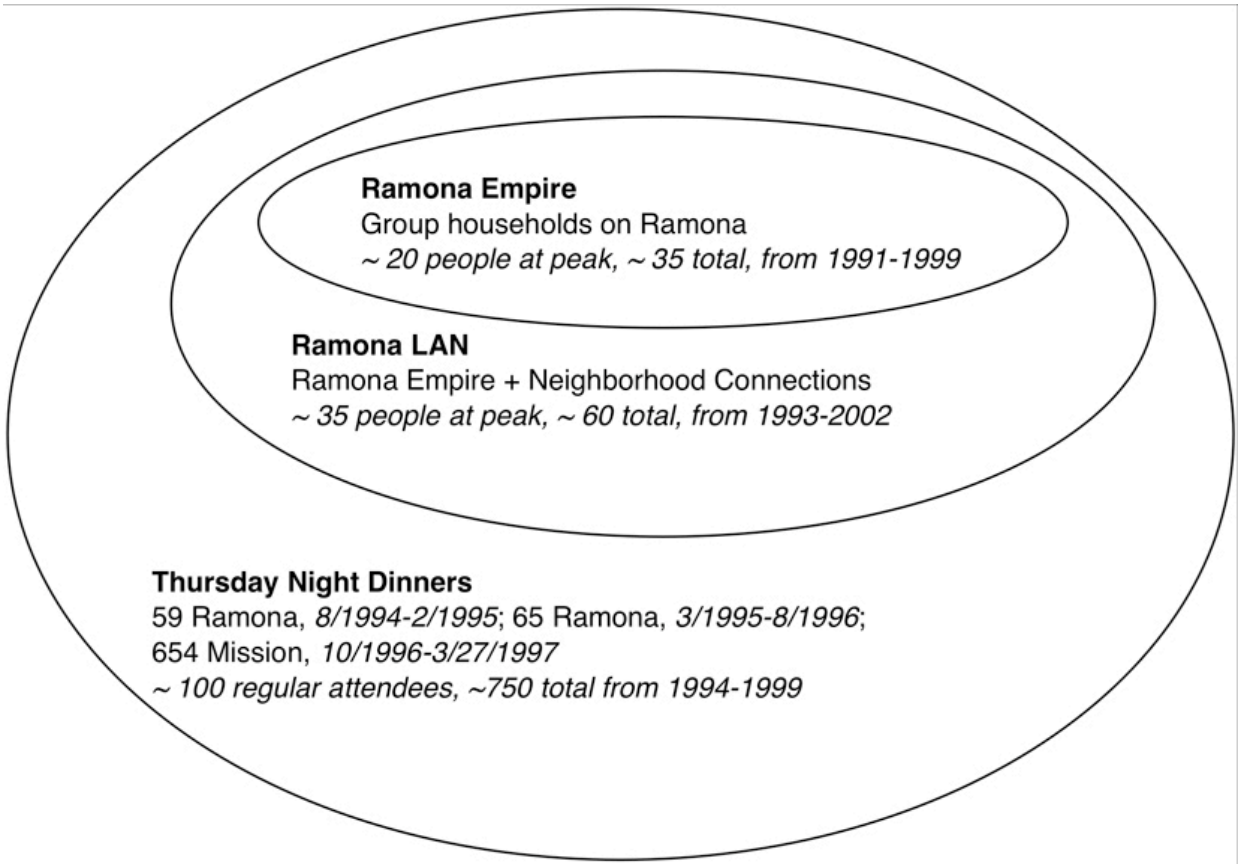

Figure 1: Cyborganic as Place-Based, Face-to-Face Community
Peaks are largest number of *simultaneous* members in each group.
Totals are the number of members over the life of the group.

Online, Cyborganic was comprised of the following forums, illustrated in Figure 2 below.

1. Web and mail servers that hosted approximately100 user accounts and more than 100 virtual domains between 1994 and 2002;

2. A community mailing list (cc list) that launched in 1994 with 33 subscribers, grew to 152 subscribers by mid-1996, had a peak of over 200 in 1997, and remained active through 2002;

3. The Cyborganic Gardens website which showcased the community and business and hosted member homepages and projects. Cyborganic had 34 member homepages when the website went online in April 1995 and 86 from January 1996 through 1997 when it went offline.

4. The space bar, a text-based synchronous conferencing system, or "chat," that was active from April 1995 until mid-2008.

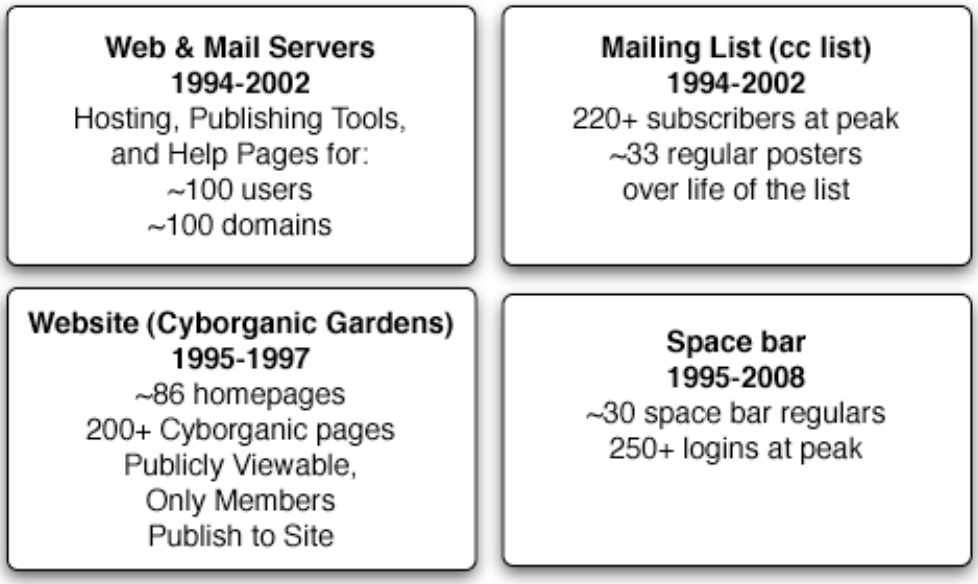

Figure 2: Cyborganic Online

Regional Legacies: Silicon Valley and Bay Area Countercultures

In the large-scale view, my ethnography situates Cyborganic genealogically in relation to two regional cultural histories: first, of Silicon Valley as a milieu of technical and economic innovation; and second, of the role Bay area countercultures played in the social construction of networked personal computing. Both underscore the formative role of place—physical collocation in particular *places* and the embodied, face-to-face sociality that this affords—in the development of networked media. From the "community of technical scholars" envisioned in 1927 by Fredrick Terman, the Stanford professor whose work to foster university-industry collaboration was central to the genesis of Silicon Valley; to the "faires" hobbyist clubs, and local businesses that ushered in personal computing in the 1970s (Freiberger and Swaine 2000); spatial proximity and face-to-face sociality have been central to the development of information technologies. Scholars of urban development (Castells and Hall 1994; Saxenian 1993, 1994) identify Silicon Valley as exemplary of the "technopole" and emphasize the crucial role of *place* and *culture* in technical innovation and "dynamic economic growth" (Castells & Hall, 1994: 8). More recent studies have demonstrated the extraordinary spatial concentration of the Internet industry and the continued importance of geography in the network age (Zook 2005). During the 1990s, the SOMA district (South of Market) in San Francisco, where Cyborganic formed, emerged as "a new Silicon Valley," about 40 miles to the north of the original, in a process of "short-distance decentralization" (Castells and Hall: 235) where technopoles spawn nearby satellites. My ethnography of Cyborganic demonstrates how spatial proximity and face-to-face

sociality worked together in SOMA in the 1990s to "foster dynamically evolving networks of relationships" among emerging businesses and outposts of larger enterprises, in 'a kind of fishnet organization'" (IFTF 1997: 2).

The significance of place and embodiment is evident in the fact that Cyborganic was an age cohort that coalesced through a variety of kin, high school, college, and occupational networks. Figure 3, below, diagrams the network of firms, projects, professional and recreational communities in which Cyborganic coalesced, tracing its members' connections to the new businesses and software projects through which Web publishing developed in San Francisco in the 1990s. Though a few lines of connection in Figure 3 represent Internet service, all the lines represent flows of people, ideas, and collaborative action. Graphically, the multiple, overlapping shapes (cloud, diamond, and rectangles) show the overlap of social forms: businesses, voluntary projects, and communities of work and leisure. They also show the mutuality of work and play, professional and personal; and, given their concentration in San Francisco's SOMA district, of onground and online. These were the realms and boundaries my Cyborganic subjects negotiated as producers and consumers of new forms of networked social media during the first phase of the Web's development as a popular platform.

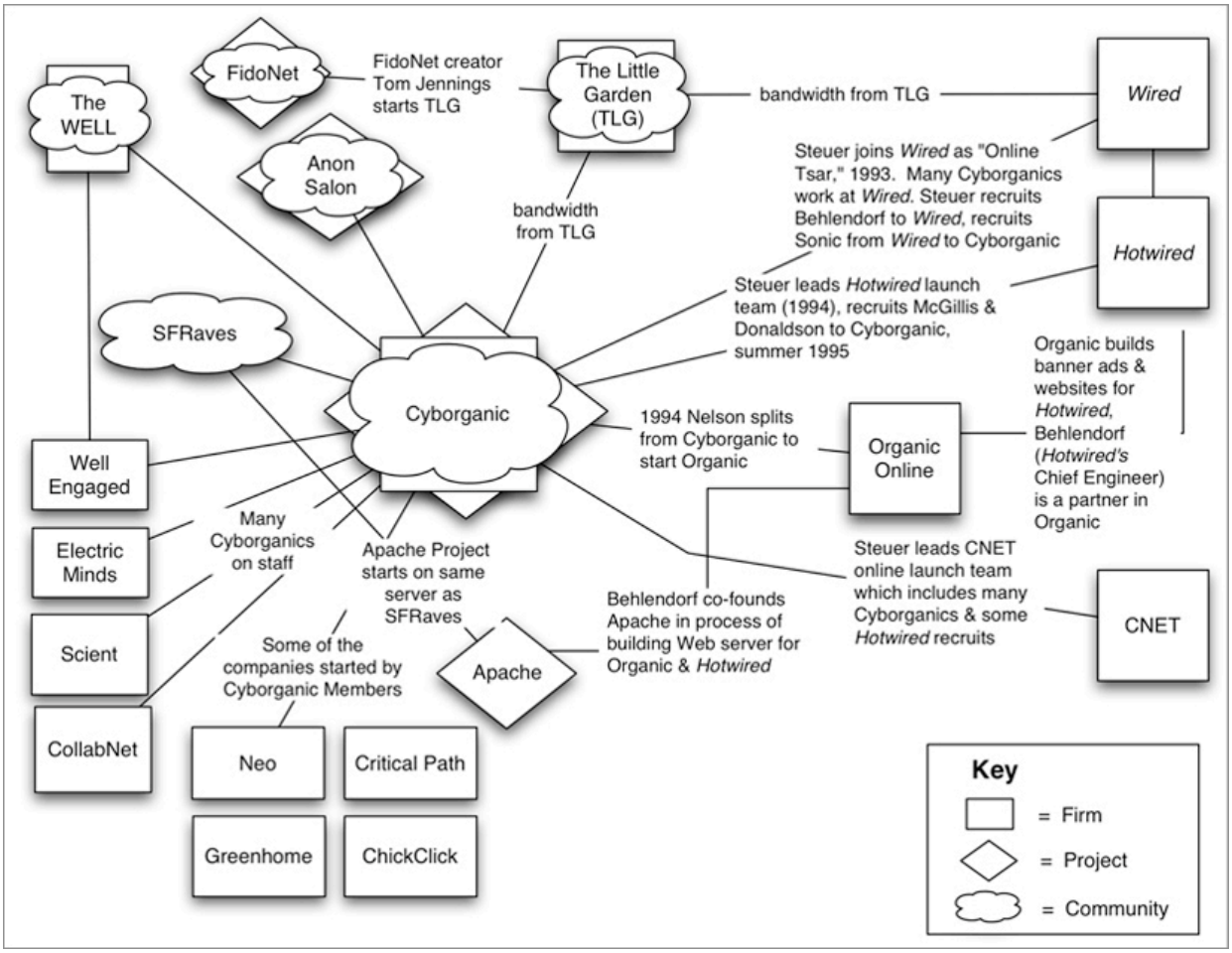

Figure 3:
Cyborganic network of firms, projects, & communities, San Francisco, 1993-1999

The other relevant regional legacy for Cyborganic is that of the Bay Area as a center of 1960s and 1970s American counterculture. The vital role of the counterculture in the emergence of networked personal computing, virtual community, and a host of other forms and practices of techno-sociality has been well documented in a variety of contexts (Roszak 1986; Brand 1995; Abbate 1999; Castells 2001; Markhoff 2005; Turner 2005, 2007). Communications scholar, Fred Turner (2005, 2007) traces the role of these countercultures in the emergence of online communities through The WELL (Figure 3, top left). The WELL is a Bay Area online community and business founded in 1985 by Stewart Brand and Larry Brilliant. WELL stands for Whole Earth 'Lectronic Link and is a reference to Brand's earlier project, *The Whole Earth Catalog*, handbook of the hippie generation. Profiled in Rheingold's *Virtual Community* (1993), The WELL is one of the oldest online communities and also one of the most studied and documented (Smith 1992· Figallo 1993, Hafner 1997, Wellman and Gulia 1999, Kollock 1999). The WELL, Turner argues, "not only modeled the interactive possibilities of computer-mediated-communication but also translated a countercultural vision of the proper relationship between technology and sociability into a resource for imagining and managing life in the network economy" (2005:491). Cyborganic inherited from The WELL, a small but formative membership and, more significantly the entrepreneurial-utopian idea to start a locally based online community by making a business of it[4].

By situating Cyborganic in this brief cultural history, I seek to highlight the vital role local communities of producer/users (geeks) have played in the emergence of networked personal computing and the Bay Area as a technopole; and show their continuing importance in the genesis of Web publishing in the 1990s. Cyborganic combined the trust- and identity-building power of face-to-face forums with the flexibility, and greater reach of computer-mediated communication. This combination resulted in a community colocated in places online and onground, and in the hyper-experience that results when these two are deeply intertwined. While this large-scale view indicates the importance of place in the development of Web publishing, I turn now to the smaller scale to focus on specific imaginaries, practices, and forms of networked social media in the daily life of Cyborganic. Ethnographic analysis of these forms and practices, which have become dominant on the contemporary Web, demonstrates the way digital intermediation reconfigures experiences and imaginaries of place, identity, and embodiment, without dematerializing these sites of subjectivity or rendering them obsolete as sources of anthropological insight. This resistance to dematerialization, I argue, bears directly on the questions, conceptions, and challenges of the posthuman subject discussed in my concluding analysis.

Place, Media, Collocation

In the 1990s, anthropologists challenged the assumed "isomorphism between space, place, and culture" (Gupta and Ferguson 1997a: 34) and theorized "technological infrastructures as sites for the production of locality" without a necessarily geographic referent (Ito 1999:2). Despite this decoupling, my study of Cyborganic demonstrates that spatial and technologically mediated proximity can interact in significant ways. Rather than return to an ethnographic subject defined by place and face-to-face interaction (Foster 1953; Redfield 1960), I conceive of place in terms

[4] I examine Cyborganic's blend of entrepreneurial and utopian imaginaries and practices in my ethnography, *Communities of Innovation: Cyborganic and the Birth of Networked, Social Media* (2008),

of *collocation*—the collocation of people, jobs, and other social activities, in particular places, times, and channels of communication. This understanding of collocation is informed by Lisa Gitelman's definition of media:

> as socially realized structures of communication, where structures include both technological forms and their associated protocols, and where communication is a cultural practice, *a ritualized collocation* of different people on the same mental map, sharing or engaged with popular ontologies of representation…
> (Gitelman 2006: 7, emphasis mine.)

While media can be glossed as "communication that is not face-to-face" (Spitulnik 2001:143), the concept of collocation Gitelman presents is one that applies equally online and onground. Moreover, it figures centrally in the imaginaries and practices of networked social media I saw in Cyborganic, where online and onground collocation worked synergistically to reconfigure the experience and social relations of presence and place. For example, a 1995 manifesto on the Cyborganic website proclaimed:

> Cyborganic will establish a real space for members to meet and interact—*a flesh-and-blood back-channel*—to its community-building efforts in cyberspace.
> (Cyborganic Garden website, "Our Big Plan")

"Back-channel" implies all the informal communications and interactions around a main channel, typically meta-communications. In telecommunication, a back-channel is usually a lower-speed transmission flowing in a direction opposite the main channel. The irony of Cyborganic's technophilic vision—which casts real "real space" and "flesh and blood" as the back-channel to online interaction—is that face-to-face interaction offers a far richer spectrum of communication. All sorts of informal, sub-, and preconscious transmissions flow across it in full duplex—that is, in both directions. Yet, this example serves to highlight the mutuality of online and onground that was so central to Cyborganic in that both forms of interaction (and social space) are *imagined as channels*. This is a thoroughly "infomated" imaginary of "real space" and collocation to use Shoshana Zuboff's (1988) term for the way information technologies support richer communication around the tasks to which they are applied, In 1988 Zuboff identified a "fundamental duality" between information technologies that automate, that is, "replace the human body…enabling the same processes to be performed with more continuity and control," and those that, in her coinage, "infomate," meaning they simultaneously generate "information about the underlying productive and administrative processes" of the work they automate. While the logic of automation "hardly differs from that of the nineteenth-century machine system," Zuboff observes, "information technology supersedes the traditional logic" because it feeds back on itself by introducing

> "an additional dimension of reflexivity…Information technology not only produces action but also produces a voice that symbolically renders events, objects, and processes so that they become visible, knowable, and shareable in a new way. (Zuboff 1988:9-10)

Technologies that infomate form the technological nucleus for the array of contemporary phenomena known as "Web 2.0" and their voices can already be heard in my Cyborganic research. Let me illustrate by looking specifically at one aspect of Cyborganic—the space bar chat—to identify practices of collocation, presence casting, phatic communion, and configurable

sociality that, as I will explain, express the mutuality of its members' online and onground experience in daily life.

Space Bar: From Collocation to Configurable Sociality

The space bar was a synchronous chat where multiple people logged in to the same channel to exchange text messages in real time. Space bar was not on the Web, but was a command-line chat accessed using the older telnet network protocol. From the time it went online in April 1995 space bar had a contingent of regulars who spent much of each workday logged in to the chat. Most were people whose jobs entailed being online at a computer much of the day, as these interviews excerpts illustrate.

> I'm usually on the space bar by eleven-thirty or eleven, say, and bail for lunch, go outside and talk to my tape-recorder or talk to my journal, or play guitar or something to get the stress out and then, show up at one and deal with afternoon meetings and then by, easily, definitely by three I'm back on "the bar." (Dominic Sagolla, interview, October 17, 1996)
>
> It's certainly busier during the day, during the week, when everybody's supposed to be working and they've got their telnet window open, on their computer desk…(laughs) (Kat Kovacs, interview, October 8, 1996)

Being on space bar was integrated into the workday and workplace. For Cyborganics with day jobs in San Francisco's SOMA neighborhood, space bar was a place to find people to go to lunch with during the week and talk about it afterwards, back at work. For those who worked "down Peninsula " in Silicon Valley, keeping a window open to space bar all day countered the isolation of the commute and corporate workplace, "Cubeland", as some of my informants called it. Having a cohort of knowledgeable friends with you on your desktop at work dramatically changed the character of the workplace for the Cyborganics who frequented space bar. More widely, such forms and practices of techno-sociality (e.g., instant messaging, texting) have been identified as central to the new workplace of a "creative class" (Florida 2002) of "no-collar" workers (Ross 2003) associated with the new economy and 1990s "dotcom boom."

Besides "hanging out," "gossip," and "banter," Cyborganics also used space bar as a hailing frequency. Even those who did not generally spend much time in the chat logged in when they needed to track somebody down or talk to a "live person." To facilitate this practice, Cyborganic's Web team created a "porthole" on the Web (Figure 4 below), a webpage people could visit to see who was online in the chat without having to telnet to space bar and login.

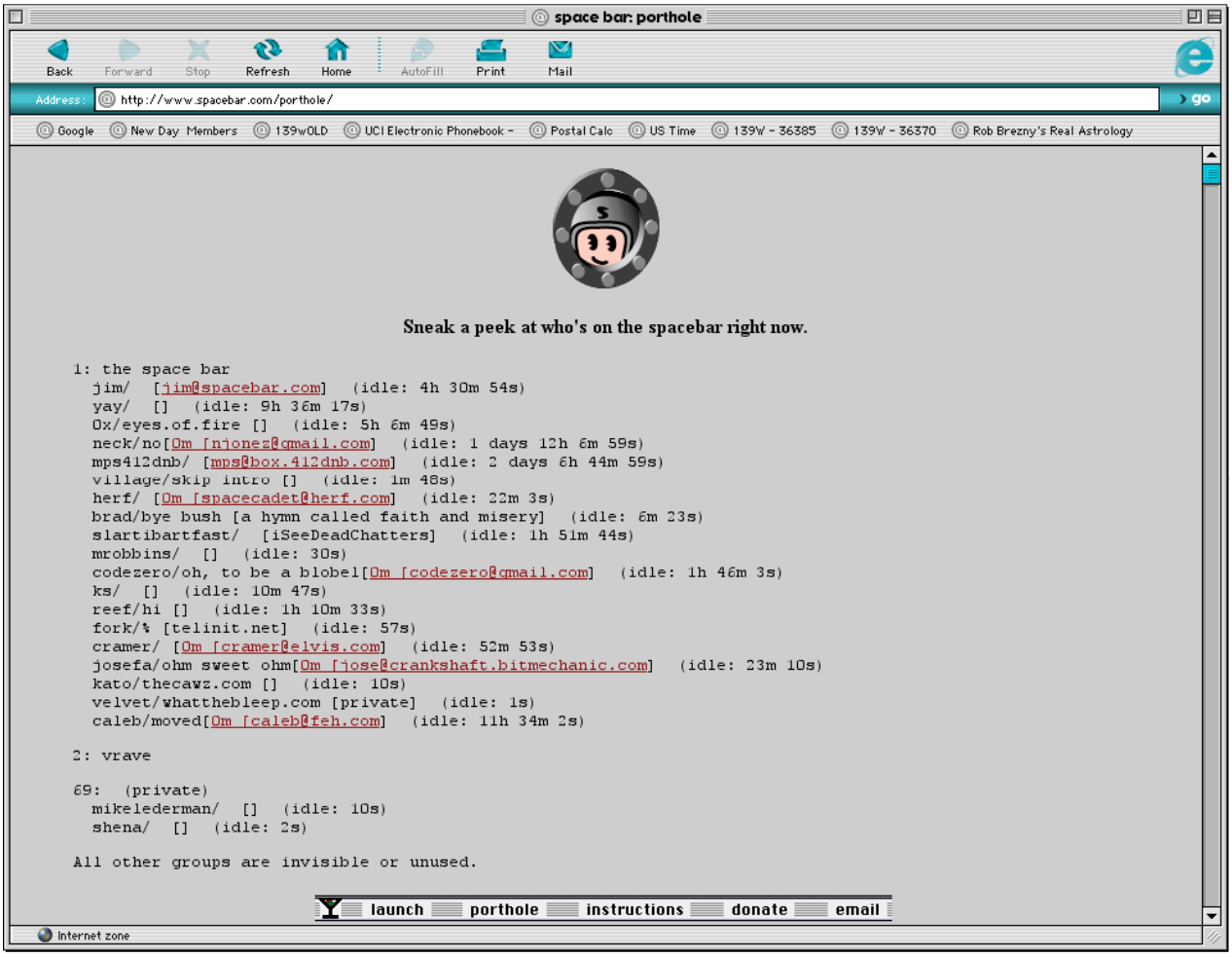

Figure 4: The space bar porthole

Cyborganic also devised a “cadet detector” (Figure 5 below), that members could put on their homepages to indicate, with a dynamically served graphic icon, whether or not they were logged in to space bar.

Figure 5 The space bar cadet detector

In the context of space bar's porthole and cadet detector, people began using the chat's nickname feature to append short status messages of different kinds (e.g., mood, location, role) to their logins. Displaying one's presence across media, that is, from the space bar chat, which was not on the Web, to a page on Cyborganic's website, or a member's homepage, was what might be called "presence casting." As the status updates so central to more recent forms of online media, such as Facebook and Twitter, illustrate, this is a form of mediated communication that has proliferated with the rise of the mobile Internet and social networking.

Beyond its presence in the workday, space bar was also active late at night when regulars logged in from home or while working after hours. As one of my informants said of space bar, "people live there" (Dominic Sagolla, interview, October 17, 1996); some even stayed logged on when they were asleep or otherwise out of range of the "beeps" the chat's users could send to one another's computers. When asked about this practice, some suggested it was "a status thing to be on the bar," while others indicated that staying logged on gave a sense of "being together" that was comforting. In this, and other practices, space bar served an essentially a phatic function of maintaining social connection, rather than communicating messages. Here I draw on Bronislaw Malinowski who "coined the phrase 'phatic communion' to refer to [the] social function of language, which arises out of the basic human need to signal friendship—or, at least, lack of enmity" (Crystal, 1987). Linguist Roman Jakobson described the phatic function as "contact without a message" that serves to keep a channel open as a test of the overall system itself (Jakobson 1981). Space bar was online for 13 years and a group of about 14 people continued to login though early 2008, mostly to idle together in the channel, or engage in conversations that proceeded at the rate of one or two lines a day. Thus, in its last several years of operation, space bar primarily provided phatic communion through a structure of communication that in its very minimalism demonstrates Gitelman's point that media are never only technological, but always already conjoined in social protocols and cultural meanings.

In technical terms, one might say this use of space bar *automates* the phatic function of communication in its display of users who are logged in to the channel. But the function is also *infomated* with automated messages from the system (idle time) as well as customized messages from the users (e-mail address, nickname). For example, one's presence on space bar was displayed automatically (in the chat and through the porthole) in the following form.

cool/anthropologist [jenny@cool.org] (idle:0s)
jim/obamageddon [jim@spacebar.com] (idle:23 days, 11h, 17m, 56s]

In this example, I (cool) have just logged in (*idle:0s* means idle for zero seconds), while space bar's sysadmin (jim) has been logged on and idle for almost 24 days. Appended after each login are "nicknames," (anthropologist, obamageddon) as they are called in space bar's command menu, though, as noted, they came to be used for status updates or short-form messages (in this example, political commentary), rather than to convey a fixed identity. Even in this rather narrow use, space bar included a range of social functions and cultural meanings. Besides the phatic communion of a small group of old friends who stay logged in to the channel, it provided a way for Cyborganics, many of whom had left the Bay Area by this time, to find space bar regulars or at least their current e-mail addresses; and learn when they last said something in the chat.

The imaginaries and practices of collocation, presence casting, and phatic communion described in space bar bespeak a form of just-in-time, configurable sociality that has proliferated

with "Web 2.0," for example in Facebook status messages or "micro-blogging" on Twitter. Facebook also demonstrates the central importance of place in establishing high trust social networks that can be augmented, and maintained at a distance and over time through networked social media. Though it is now a global social networking site, Facebook was initially restricted to Harvard college students. Created in late 2003, it was an online representation of students' face-to-face community using real names and the pictures from their college identification cards. Within months membership expanded to Stanford, Columbia, and Yale, then all Ivy League and Boston area schools, and later most North American universities. In September 2006 membership opened to anyone 13 or older with a valid email account. The connection of online and onground identity and extension of traditional place-based affiliations, such as college ties, are central as central to Facebook as they were to Cyborganic and illustrate ways that place-based identities and affiliations have been extended and reconfigured in networked sociality, but remain significant.

A central aspect of configurable sociality is the way it mediates online and onground presence, identity, and collocation. This can be seen in practices of pseudonymity on space bar that tended to render identity configurable, obscuring or revealing onground connections depending on social context. Space bar constituted a liminal zone, a channel people could enter and use without revealing their onground identity. Anyone on the Internet could login and chat in space bar's channel 1 until the administrator, "the spaceman," verified a working email address, at which point a user could join any public channel and create public or private channels of his or her own. Additionally, one person could have multiple accounts, as longtime systems administrator for space bar, James Home, noted:

> A lot of the Cybo establishment used the same names [on space bar] as their main accounts, but had aliases for fucking around.
>
> (James Home, personal communication, March 19, 2008)

About half of space bar's users had a login different from their main Cyborganic one and, though some might know who was who "in real life" (IRL) others might not. In this context, it became fairly commonplace for space bar regulars to have fun by fooling or tricking "chat newbies," as one regular described in a 1996 interview.

> Tunaluna is a space bar regular and she is usually very helpful to everybody, although she also just has fun playing around with newbies in channel 1 under a different ID, and as the moderator she has another login which if you ask her, she's always pretty helpful, but she also plays with newbies. There was one great evening, me and her and there were 2 other people and a couple newbies and within about half an hour we had them believe that everything they said was being measured for some big government project from Iowa and everything went into this big computer to design chat machines for the next generation. It's really childish at some level, but it's a harmless game that some people play, but then as the moderator login, she wouldn't do that, she would not intentionally mislead people [laughs].
>
> (Sean Robin, pseudonym, interview, October 21, 1996)

As this excerpt indicates, even the chat's moderators had different aliases and engaged in the in-group games with neophytes. What I mean to show in this example is that pseudonymity mediates across a differential of identity and anonymity. Even where online and offline are decoupled, they are mutually co-constructed. Moreover, they express onground social relations albeit in complexly reconfigured, and reconfigurable, forms. Each of the social imaginaries and practices of collocation, presence casting and configurable sociality I have analyzed demonstrate ways in which the decoupling of spatial and social proximity opens new possibilities for their recombination and reconfiguration. None suggests the dematerialization of place or erasure of embodiment as corollary to the proliferation of computer-mediated sociality. Rather, in the case of Cyborganic, mediated and face-to-face communication worked together synergistically to reconfigure the experience and social relations of presence and place.

Challenges of the Posthuman

I began by saying that my analysis of Cyborganic's online and onground mutuality suggests ways to think about challenges to inherited conceptions of the anthropological subject. As I noted, I call these challenges of the *posthuman* even though I recognize this term is problematic for anthropology and fraught with semantic confusion due to widely divergent visions of the posthuman to which it is applied. Yet, untangling this confusion and considering the posthuman in its various forms has proven valuable to my understanding of virtuality, materiality, and embodiment. It has informed my conception of the reconfigured relations of space, time, and being that constitute the cultural worlds of computer-mediated communication and sociality I study. I draw here on geographer Edward Soja's concept of the "ontological nexus of space-time-being." Soja argues that, just as the physical world is delimited in space, time, and matter, the abstract dimensions of spatiality, temporality, and social being "together comprise all facets of human existence" (1989:25). This existential triad sparked, first of all, the insight that global, real-time, information networks decouple social being from many of the spatial and temporal constraints in which it had previously been moored. Because they mediate these basic dimensions of human existence, their proliferation is significant, not only for anthropologists of life online, but for all social scholars. Soja's model also led me to understand that while the proliferation of information technologies blurs and shifts the bounds of spatiality, temporality, and social being, and reconfigures their relations, none of these terms drops out of the nexus. These basic dimensions are not givens, but social constructions that shape empirical reality and are simultaneously shaped by it (Soja 1989: 25). The relation between the physical world triad of space, time, and matter, and the social constructions spatiality, temporality, and being, is by definition mediated. This understanding informs my concept of collocation in the analysis of Cyborganic. It also informs my approach to questions of virtuality, materiality, embodiment, and disembodiment that have long attended the study of life online (Turkle 1984, 1995; Stone 1991, 1995, Dibbell 1998). These questions also figure centrally in competing versions of the posthuman that similarly entail imagining the relations of physical and social being in comprising subjectivity.

Discourses around the posthuman are heterodox and contradictory and extend from science fiction, cyberpunk, robotics, and artificial intelligence (Foster 2005; Moravec 1988, 1998; Minsky 1987, Warwick 2001, 2004) to critical social theory (Haraway 1991; Hayles 1999). The first set of discourses focus on surpassing the limits of the embodied human form, that is, on the *transhuman*. The posthuman of critical social theory, on the other hand, focuses on overcoming the limits of the liberal humanist subject, that is, on *posthumanism*. I situate myself firmly in the latter discourses of posthumanism, but find both visions of the posthuman valuable to understanding contemporary challenges to the anthropological subject. While I focus on challenges posed by the reconfiguration of place and social being through computer-mediated

sociality and material-informational flows, these challenges extend across feminist, post-colonialist, and postmodernist critiques of the liberal humanist subject. Though the figure of the posthuman foregrounds technological mediation, it speaks to this wider set of challenges to the category *human*. By speaking of these together as challenges of the posthuman, I want to argue that, while it is vital for anthropologists to recognize diverse ways in which the historically specific construction called *human* continues to give way to a different construction, which some call *cyborg* (e.g. Haraway 1991, Downy and Dumit 1998, Dumit and Davis-Floyd, 2001) and others *posthuman* (e.g., Hayles 1999, Haraway 2007), it is equally vital to understand that this shift does not require the erasure of embodiment from anthropological conceptions of human subjectivity. The cyborg image Haraway offers as an alternate construction of human subjectivity has been taken up in cyborg anthropology[5] and addresses three crucial boundary breakdowns—animal/human, organism/machine, physical/nonphysical—central to the information age. However, it is the view of the posthuman Katherine Hayles articulates in *How We Became Posthuman* (1999) that is most useful to making the case I have outlined for the anthropological subject because it elucidates competing versions of the posthuman and the stakes contested,

Hayles vision of the posthuman is useful on several fronts: theoretical, historical, practical. (1) She provides a framework for conceptualizing a de-centered, intermediated, human subject for whom embodiment and place remain defining sources of identity and cultural difference. (2) She identifies in 20th century Western literary and scientific discourses of information, cybernetics, and the posthuman a "teleology of disembodiment" (1999: 22); and (3) cautions against extending this powerful cultural narrative—and with it the "prerogatives" of the autonomous liberal subject—"into the realm of the posthuman" (Hayles 1999: 287). Hayles uses *posthuman* to refer to the eclipse of a certain view of the human, not of humanity. However, the term is often perceived, particularly in anthropology, as conflating "the human with the subject of liberal humanism" in "an overly narrow and ethnocentric definition that effaces the variability of human lifeways" (Boellstorff 2008:29). This is unfortunate and ironic, for Hayles explicitly works to prevent the reinscription of the liberal humanist subject into prevailing concepts of posthuman subjectivity. For example, she writes:

> the posthuman does not really mean the end of humanity. It signals instead the end of a certain conception of the human, a conception that may have applied, at best, to that fraction of humanity who had the wealth, power, and leisure to conceptualize themselves as autonomous beings exercising their will through individual agency and choice. What is lethal is not the posthuman as such but the grafting of the posthuman onto a liberal humanist view of the self. (Hayles 1999: 286)

Hayles, not only distinguishes the liberal humanist subject from all human being, as a historically specific and materially situated cultural form, she also critiques metanarratives of technological determinism and disembodied subjectivity that resurrect this subject in the posthuman. One might say the autonomous liberal subject is what is *post* in Hayles' account of the *posthuman*.

[5] Cyborg anthropology is a subspecialty launched in 1993 and "located in the transdisciplinary field of Science and Technology Studies (Dumit and Davis-Floyd, 2001)

Hayles applies *posthuman* to two very different conceptions of human subjectivity. One that "configures human being so that it can be seamlessly articulated with intelligent machines" (1999:3) and one that sees "the deconstruction of the liberal humanist subject as an opportunity to put back into the picture the flesh that continues to be erased in contemporary discussions about cybernetic subjects" (1999:5). She writes:

> If my nightmare is a culture inhabited by posthumans who regard their bodies as fashion accessories rather than the ground of being, my dream is a version of the posthuman that embraces the possibilities of information technologies without being seduced by fantasies of unlimited power and disembodied immortality, that recognizes and celebrates finitude as a condition of human being, and that understands human life is embedded in a material world of great complexity, one on which we depend for our continued survival. (1999: 5)

Though both represent significant breaks with the liberal humanist tradition, Hayles nightmare version of the posthuman is born of "the idea that human being is *essentially* an information pattern" (1999:2). It deploys "a teleology of disembodiment" from the liberal conception of subjectivity as seated in mind, individual consciousness, and free will. In contrast her dream version of the posthuman contests to keep disembodiment from being reinscribed in prevailing concepts of subjectivity.

For Hayles, what the posthuman means is an open contest: both versions are not only possible, but *compete* in cultural discourses, historical and contemporary. Hayles puts forth a version that challenges "metanarratives about the transformation of the human into a disembodied posthuman" by replacing them "with historically contingent stories about contests between competing factions" over the disembodiment of human subjectivity (1999: 2). In much the same way, feminist, post-colonialist, and postmodernist anthropologists challenged metanarratives of the universal subject, replacing them with "ethnographies of the particular" (Abu-Lughod 1991) and spatially, temporally, and socio-culturally situated subjects (triangulated in the ontological nexus of space, time, and being). Hayles' conception of subjectivity as "a material-informational entity" (1999: 3) is one entirely familiar to anthropologists. It is precisely this view of the contemporary human subject that, echoing Bruno Latour[6], leads Hayles to conclude "that we have always been posthuman" (Hayles 1999: 291) and Boellstorff that "we have always been virtual" (2008). These pronouncements of continuity challenge transhumanist notions of overcoming/escaping the limits of embodied subjectivity. Conceived to "put back into the picture the flesh that continues to be erased in contemporary discussions about cybernetic subjects" (1999:5), Hayles' version of the posthuman challenges "metanarratives about the transformation of the human into a disembodied posthuman." In similar manner, I have worked in my ethnographic account of Cyborganic to read and write the flesh back into the genealogy of contemporary forms of techno-sociality. In both the large-scale view of cultural history, and the micro-view of particular media practices, I have spoken of various sites of subjectivity—place, presence, colocation, identity—as mutually co-constructed online and onground. This is how I perceive the anthropological subject in the cybernetic circuits of contemporary society. While material-information flows decouple and reconfigure, the circuit always comes to ground in situated subjects, embodied and emplaced in the ontological nexus of space, time, and social

[6] *We Have Never Been Modern* (Latour,1993)

being. As my Cyborganic examples show, the intermediation of online and onground can work to consolidate and extend, rather than attenuate, affiliations based on place and embodiment (high school, college, age-cohorts). Anthropologists have long seen such affiliations as defining sources of identity, cultural difference, and insight into the human subject. In recognizing that subjectivity is constructed through the mediation of material and symbolic realms, we are well positioned to contest, with Hayles, the "teleology of disembodiment" that reinscribes the liberal humanist subject into conceptions of technologically-mediated subjectivity and sociality.

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