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11

COMPUTERS, THE INTERNET, AND VIRTUAL CULTURES

Steve Jones and Stephanie Kucker

In an essay titled 'Thinking the Internet: Cultural studies vs the Millennium', Jonathan Sterne (1999) notes that a central issue for cultural studies approaches to 'thinking the Internet' is quite literally how to think about it beyond traditional dichotomous perspectives. Instead of asking whether the Internet leads us to utopia, or whether it will destroy the fabric of society, how might we examine the Internet as another media technology situated in routine social practice and everyday life? Scholars must pay attention to the routines undergoing transformation because of networking, for it is in the realm of the mundane that we most clearly see the consequences of the Internet in culture and society. Sterne asks us to imagine a day in the life of one of his students, and to note the ways in which the Internet, or more appropriately perhaps *Internetworking*, is embedded in mundane routines and practices. Stopping in a computer lab between classes to check email, for instance, or sending a note to a professor while doing homework, are examples he cites of common practices altered by Internetworking.

To Sterne's request we add another. We should examine the routine practices of myriad occupations, relationships and events (including ones within academia) if we are best to determine the ubiquity of Internetworking and its cultural consequences. For instance, a scholarly conference examining the WorldwideWeb was held in 1998 at Drake University. Many of those assembled had known one another for years, from other scholarly conferences, from graduate school, or from publications. But prior to that conference only one or two were known to be interested in studying the Web. How did it come to be that all were in one place at one time discussing the Web, its metaphors, and meanings?

What became clear at the Drake conference was the participants' common interest in a technology that somehow managed to encompass previous intellectual interests (if not in some ways swallow them whole), but also managed to put a 'twist' on previously held theories and concepts. For instance, those who had been studying popular music and its audience quite literally had an entirely

new medium with which to contend, a medium that challenged popular music's industrial processes, and therefore challenged theories concerning the relationships between performers, fans, and the music business. As has been noted in a volume on cyberpsychology:

> An overarching issue is the manner in which these technologies implicate the objects and subjects of scholarship, along with scholars themselves, in new webs of significance and meaning that impart new frameworks to our experiences and encounters. In addition to encapsulating us in any variety of Foucauldian panopticons, like some global Hawthorne effect, network technologies affect our thinking and behavior as much because of the attention we pay the technology (and ourselves embedded in it) as because of anything else.
>
> (Jones 2000)

Similarly, Internetworking has come to encompass culture in particularly interesting ways, especially so for those who have mined the territory of cultural studies. The Internet could, in some ways, be seen as a 'carrier' of culture, in so far as it serves both as a medium of transmission and as a medium whose users selectively attend to texts others have made available. But to have it seen as such means that we will likely overlook practice, space, and emotion in favor of text. Of course, the Internet is embedded within culture in important ways. The Internet, it may be said, creates a 'virtual culture' (Jones 1997a). As Strate noted, echoing many Internet theorists: 'Communication adjusted to meet the demands and biases of cyberspace is cybercommunication, and as communication and culture are intimately linked (to some they are consubstantial), culture itself is altered' (Strate *et al.* 1996: 271).

But a virtual culture cannot (at least, not yet) be entirely disassociated from 'real' life (Jones 1998). Wellman and Gulia (1999) noted that most Internet research 'Treats the Internet as an isolated social phenomenon without taking into account how interactions on the Net fit with other aspects of people's lives. The Net is only one of many ways in which the same people may interact. It is not a separate reality' (Wellman and Gulia 1999: 334).

Our conditions of existence, to borrow from James Carey's (1997) excellent essay on American cultural studies, are not all consumed by cyberspace, no matter how often or how much we may log on. How we, as scholars and Internet users, draw the boundaries between the online and offline will largely determine the phenomenological and ontological dimensions of our analyses.

Most research on the Internet and culture has taken a decidedly sociological, and to a slight degree psychological, turn. Our own work (Jones 1995, 1997a, 1998), for instance, has focused on questions like 'Who are we when we are online?' Such questions are prompted by elements of Internetworking technology's interface with our human selves, by the feelings of bodily projection

on to a field, matrix or grid, and by the dispersion of selves externally (as we traverse cyberspace) and internally (as we adopt personas in interaction). However, these questions insufficiently address the cultural consequences of Internetworking.

Perspectives on Internetworking

To understand best the limited role culture has played in Internet studies, it is necessary to historicize and review the main threads of Internet research.

Much of the early research on Internetworking stems from studies of computer-mediated communication (CMC) targeted toward work-related uses within organizations, with studies of electronic mail messaging and groupware prevailing. Electronic mail (or 'electronic messaging systems') has most commonly been used as a model of electronic communication, and has reinforced text as a paradigm in Internet studies. In this representative role, email is approached with assumptions (which it has also reinforced) about the properties and uses of CMC technologies. One assumption has been that CMC is in essence a medium of transmission. That is, not only has early research on CMC employed what Carey (1989) terms a 'transmission model' for understanding communication, it has come to view CMC as fundamentally a means of transmission. Furthermore, it is taken for granted that the point of CMC is *interpersonal* messaging, whether multiple persons receive the message or not. Users of CMC are thus abstracted from the contexts within which they use CMC technologies.

A consequence of such abstraction is that research centralizing the importance of technological characteristics regards text-based CMC (i.e. listserv, Usenet, email) as lacking in social context cues – verbal and non-verbal information – that are presumed essential to interpersonal exchange (Kiesler, Siegel, and McGuire 1984; Sproull and Kiesler 1986). The argument that a lack of context cues limits socio-emotional information led early CMC scholars to brand these media as inherently impersonal and thereby best suited to unequivocal, work-related tasks (Kiesler, Siegel, and McGuire 1984). Of course, the very perception of CMC as task-centered would likely lead to no other conclusion. Moreover, the organizational settings used for the earliest CMC studies, the 'newness' of the technology in organizations and workgroups, and its insertion in pre-existing work processes would also tend to support such a conclusion.

Culnan and Markus (1987), using elements of social presence and media richness theory, explained the early findings of CMC researchers (that CMC lacks social context cues and is ill-suited to interpersonal interactions) by naming them 'cues filtered out' approaches to CMC. The 'cues filtered out' perspective assumes that the number of channels available for the transmission of impression-bearing data, and specifically non-verbal cues, marks the critical difference between CMC and face-to-face (F2F) communication. While F2F

is regarded as a more encompassing form that provides an essential blend of verbal and non-verbal cues for social interaction, CMC is diagnosed as utilizing fewer channels, and thereby 'bereft of [the] impression bearing data' that makes for effective interpersonal communication (Walther 1993: 384).

The 'cues filtered out' perspectives dominated CMC scholarship in the 1980s. Under the assumption of CMC's social deficiency, studies of email systems revolved around the application of these technologies to work-related tasks within organizations, where interpersonal exchange was believed to be limited and unnecessary (Hiltz, Johnson, and Turoff 1986). Driven by administrative interest in enhancing productivity and improving operations, these studies were focused on how email could mediate internal corporate communications and what effect this mediation would have on work-related activities, such as decision-making (Garton and Wellman 1995; Wellman *et al.* 1996). Though culture does not appear as a central theme in these early studies, it is important to consider that these technologies were not widely diffused outside of organizational settings. Early adopters at this time consisted of government agencies or corporations (and, in some cases, educational institutions) that deployed CMC for particular purposes. Nevertheless, by the 1980s notions of 'corporate culture' were themselves widespread, and it is at least somewhat surprising not to find CMC scholars forming opinions regarding the influence of CMC on organizational culture. It is equally surprising given that, even in the early days of development of ARPANET, non-task-oriented communication took place. For instance, one can consider as a precursor to listservs and Usenet discussion groups the SF-LOVERS mailing list and the development of UUCP (the Unix-to-Unix Copy Program that enabled files to be passed easily across networked computers running Unix) in the 1980s (Salus 1995). These developments were not widely reported at the time, for Internetworking had many years to go before it would capture the public imagination. But these developments did not go unnoticed in the networking community, and they have been acknowledged recently among CMC scholars as important moments in the development of a network culture (Hauben and Hauben 1997). Still, what is surprising is that no studies of the ARPANET (and other Internet precursors) were undertaken at the time of their development (or quickly thereafter) by CMC researchers.

Instead, comparisons between CMC and F2F characterized the bulk of early CMC research, as did organizational context. Research on organizational email systems was characterized by comparative studies of CMC and F2F interactions with regards to how the inherent properties of communication media influence individual media choice (Wellman *et al.* 1996). Consequently, forms of uses and gratifications research gained a foothold as well, and foreground rationality as a means by which one could explain CMC use. Media richness scholars argue that, when faced with a given task, individuals will make a rational choice among available communication media based on consideration of how well each medium matches the task (Daft and Lengel 1990; Webster

and Trevino 1995). Driven by the 'cues filtered out' orientation, much research on media choice concluded that individuals faced with interpersonal communication objectives made a conscious choice to use F2F over CMC owing to CMC's social deficiencies (Lea 1991).

Despite the dominance of cues-filtered-out, task-based research programs in the 1980s, some early research did reveal the emergence of 'social uses' of these technologies, and particularly email (Rice and Love 1987; Steinfeld 1985). Steinfeld's (1985) study of organizational email messaging systems found that the mail system was used for a wide variety of purposes, with two major dimensions – 'task' and 'socio-emotional'. While the former mostly involved the transfer and acquisition of information (not unexpected), the latter related to the maintenance of personal relationships, 'feeling a part' of the organization, and being 'in touch'. Similarly, a study by Rice and Love (1987) revealed that workers find social support, companionship, and a sense of belonging online.

In the early 1990s, scholarly dissatisfaction with perspectives that regard CMC technologies as impersonal and ill-suited to interpersonal interactions led to the emergence of new theoretical lenses through which to explore the social aspects of CMC. The 'social information processing perspective' used the comparison of CMC with F2F to illustrate that 'interpersonality' does indeed form via CMC, but at a slower rate than in F2F interactions (Walther and Burgoon 1992). When viewed from this perspective, the difference between CMC and F2F was not the 'amount of social information exchanged', as argued by early theorists, but rather 'the rate of social information exchange' (Walther 1996: 10). By centralizing the role of rate, the social information processing perspective pushed for more longitudinal research designs that could account for relational development over time. It was argued that early perspectives regarding CMC as impersonal by nature were misinformed by programs of research that targeted workgroups over limited-time engagements (Walther 1992).

A more recent outgrowth of this perspective, the 'hyperpersonal' view, suggests that there are instances when CMC may be 'more socially desirable than [individuals] tend to experience in parallel F2F interaction', and thereby may surpass F2F communication in the ability to establish interpersonal relationships (Walther 1996: 17). This assertion is based on the premise that, even though CMC may reduce non-verbal context cues (i.e. facial expressions, gestures, tone of voice, etc.), such a lack of cues may enhance interpersonal communication in a range of situational contexts, and particularly where status differentials are present.

Both the 'cues filtered out' and 'social information processing' research programs have been anchored within the organizational setting and fixed to a workgroup context. Moreover, they have foregrounded interpersonal communication and de-emphasized the role culture may play not only in organizational terms but also extra-organizationally. As such, while issues of

social relationship formation are addressed, they are considered as a function of the group task, or as a side effect of work relations. Social aspects of CMC are not central to those research programs in which technology is seen as driving media choice, use, and relationships (Bordia 1997). However, as suggested by Schmitz and Fulk (1991), media use is influenced by more than rational choices made in consideration of message content and the situation or task at hand; the use of media is also influenced by social forces and symbolic cues. Context is important. The primary focus of CMC research has been on CMC as a transmission tool for communication and information exchange, and not on CMC as a tool for social connectivity (Jones 1995).

Internetworking and community

Robins noted that 'the mythology of cyberspace is preferred over its sociology' (1995: 153), to which we would add that its sociology is preferred over its phenomenology and philosophy. In recent years, the rapid expansion of CMC's favorite (and favored) progeny, the Internet, has opened up new doors with regards to the study of electronic communication as more than a technological phenomenon but also as a social one (Jones 1995, 1997a). Researchers have come to the study of the Internet and its associated applications (i.e. Usenet, MUDS, IRC, WWW, and electronic mail) with social implications at the center of their inquiry, expanding their questions, contexts of investigation, and approaches to studying these new media both theoretically and methodologically.

Those scholars concerned with social aspects of the Internet and CMC have centralized 'connection' in their research, arguing that human-connecting computer networks are by nature social networks (Jones 1995; Wellman *et al.* 1996). They also emphasize context, both that surrounding and that encompassed within these media. While the former refers more to the physical environment and user demographics existing outside the enveloped media, the latter attends to the notion of 'social space', which is created and re-created in the course of technologically mediated interactions. This last consideration of context has helped to move scholarship away from the dominant view of CMC as a 'tool' for communications transmission and information exchange towards one that views CMC as a place of 'production and reproduction' of social relations (Jones 1995).

However, one cannot consider these studies to be cultural approaches to Internetworking. Online community studies and studies of community networks (Garton and Wellman 1995; Jones 1995; Rheingold 1993) tend to explore a particular group of people who, driven by a common interest, develop a shared sense of community in the course of virtual interaction, typically on Usenet groups, listservs, or in multi-user dungeons (MUDS). The phenomenon of central interest is how individuals come together via CMC and develop a group identity (as well as a sense of personal identity) in the

absence of F2F interaction. Studies in this area have witnessed the development of status cues, rules of order, and interpersonal bonds in text-based applications, which were previously regarded as socially deficient (Wellman 1997). While comparisons have been drawn between these online developments and 'real life' interactions, scholarly attempts to address the relationship between life online and life offline have fallen by the wayside (Jones, 1995; Kiesler 1997). Even in those online studies that do consider what happens when members of an online community meet 'in real life', the primary focus remains on how these 'virtual communities of interest' develop and remain online in 'cyberspace' (Blanchard and Horan 1998; Rheingold 1993). As Blanchard and Horan (1998) point out, there are also 'physically based virtual communities' which result when proximal communities add electronic resources.

Virnoche and Marx define community networks as a particular type of computer-mediated community when they note that 'Community networks are systems that electronically connect individuals who also share common geographic space' (1997: 85). The focus is on geographic connection as ongoing, as opposed to intermittent, and augmented with shared virtual space. Recent inquiries have started to ask: what happens when physically proximal communities go online? While this relationship has been considered in the early organizational literature, most of that research was focused on how the introduction of CMC can contribute to changes in workplace satisfaction, with the primary concern resting with CMC-enhanced outcomes. Recent inquiries exhibit more concern for the social implications of networked communities, and address how the addition of new communication technology can alter social interactions and social structure. While there is debate surrounding whether the effects of CMC technology will be positive or negative for a given community of users, there is the strong indication that the implementation of CMC technology does contribute to the process by which social relationships exist.

Community, connection, space, and culture

In his masterful examination of culture, narrative, and space, David Nye noted that 'the computer did not always have a screen full of text and images' (1997: 161). He discerned three phases in the development of cyberspace:

> The first lasting from the end of World War II until the end of the 1970s. Computers were integrated into large institutions, notably banks, airlines – white-collar organizations of all kinds. Second, at the end of the 1970s computers began to emerge into everyday life and consumption, as computer chips were installed in many products. The decentralization of the personal computer lasted until the early 1990s, when the rapid spread of the Internet marked the start of a third phase.
>
> (Nye 1997: 161)

Similarly, one can discern three phases in Internet studies – the early CMC research rooted in organizational studies emerged first, followed by research on the insertion of computers in everyday life. We are at the brink of a third phase, namely research on the decentralization of Internetworking and its diffusion across and through cultural processes and practices.

Culture has clearly played a role in much of the literature in Internet studies during the mid-1990s and onward. Culture was conceived and deployed in two limited ways. First, it was understood by some as largely non-Western, that is, as something in opposition to online culture as monolithic (usually invoked in terms of language, particularly English, or commercialism). Particular cultures thus could be considered under threat from the ubiquity of capitalist, Western culture online (Brook and Boal 1995), or they could be thought to be undergoing profound revitalization as they fight being subsumed by 'mainstream' online culture, finding new outlets for their spread (Nardi and O'Day 1999). Such discourses can be found also in the rhetoric surrounding rural communities going online (Smith and Kollock 1999). Second, it was understood as an artifact of online interaction, as 'virtual culture'. In this case one can find fascinating work, such as that by Donna Haraway, Sandy Stone, Anne Balsamo and others, on the racial, political and sexual dimensions of online experience and online culture. However, in these cases it is typically assumed that there is either a boundary between the online and the offline that, though transgressed, is necessary for the analysis of virtual culture. Alternately, one finds work based on the premise that online culture is the digital manifestation of offline culture. As Gackenbach, Guthrie, and Karpen put it, 'The Internet is the collection of information and interactions which flow over it; the users and their usage which generate the information, and their experiences of it' (1998: 323).

But culture is neither information nor interaction as they describe it. Neither is it usage, or experience, at least as regards online interaction alone. Clifford Geertz reminds us that the 'proper object' of cultural analysis is 'the informal logic of actual life', rather than the 'arrang(ement of) abstracted entities into unified patterns' (Geertz 1973: 17).

What is lacking from Gackenbach *et al.* and others' conceptions of online culture is a connection between space and culture, a connection formed, as Alexander, Ishikawa, and Silverstein note, by the promenade, a place where people 'gather together to rub shoulders and confirm their community' (1977: 169). At present one senses that, online, rubbing shoulders, as a metaphor, consists of a continuum between lurking and going elsewhere. But that is precisely why the non-textual online phenomena are of such great importance. What goes unsaid by the myriad Internet users, what is not revealed between the lines, is of critical importance, because there is nothing but lines. The in-between spaces are, for all practical purposes, impossible to mine from online interaction alone, just as, offline, it is impossible during a card game to determine the intentions of a poker-faced player. Sherry Turkle summed it up

well when describing her first encounter with a MUD. 'I was reminded of kissing games', she wrote, 'in which it was awful to be chosen and awful not to be chosen' (1999: 206). In short, even in offline social situations lurking can be the most desired choice, though proximity in real life borne of a lack of mediation won't allow it. Simply put, real life does not allow so many multiple and immediate options with which to mediate social situations as does CMC.

The Internet, on the other hand, is entirely mediation, and the most commonly chosen social role is that of the lurker. Whether lurking and voyeurism are linked (which we believe they are) and how they may be linked is a discussion beyond the scope of this chapter. Suffice to say that there are clearly important issues to be considered in relation to lurking, voyeurism, surveillance, the gaze, image, and metaphor (Foucault 1980). What is central to the argument presented here is that culture is overlooked by those who study the Internet because 'overlooking' is, if you will, the main activity of being online, being in cyberspace. As we more and more textualize cyberspace we more and more destabilize the relationships between space and culture. As Nye puts it, 'What appears on the computer screen seems a curious combination of space and story' (Nye 1997: 186). The story, however, is not that of a machine 'impinging', as he puts it, on space, but is rather that of a narrative incursion into an existing culture. In an important sense, if cyberspace is an 'information superhighway', it is not built into and through space (be it cyber or otherwise). It is a road built into and through a cultural landscape that before its construction knew not of traffic.

Traffic is, in fact, antithetical to community. As Alexander, Ishikawa, and Silverstein point out, 'the heavier the traffic in an area, the less people think of it as home territory. Not only do residents view the streets with heavy traffic as less personal, but they feel the same about the houses along the street' (1977: 82–3). We can glean an important distinction between the conception of a highway, meant to carry traffic, and a road or path, meant to foster habitation, from Milan Kundera's novel *Immortality*:

> Road: a strip of ground over which one walks. A highway differs from a road not only because it is merely a line that connects one point with another. A highway has no meaning in itself; its meaning derives entirely from the two points that it connects. A road is a tribute to space. Every stretch of road has meaning in itself and invites us to stop. A highway is the triumphant devaluation of space.
>
> Before roads and paths disappeared from the landscape, they had disappeared from the human soul. [We] no longer saw life as a road, but as a highway: a line that led from one point to another, from the rank of captain to the rank of general, from the role of wife to the role of widow. Time became a mere obstacle to life, an obstacle that had to be overcome by ever greater speed.
>
> (Kundera 1990: 223)

The speed with which we move from place to place online itself renders any traditional notions of community obsolete (Jones 1997b). Online community is usually considered as spatial or cyberspatial, but temporality is rarely a matter of analysis. For that reason, a useful concept may be that of 'habitation', the commitment not only to being in the same place as others but to staying there for some length of time. We experience where we visit and where we live very differently both spatially and temporally.

However, habitation is a key element in current industrial discourses about the Internet. Terms like 'community', 'portal', 'stickiness', all point to the same issue, namely that it is increasingly difficult, in a medium built (and continuously imagined) for movement, to develop the relatively stable communities desired by marketers and advertisers (and, may we add, by most people). Or, to put it another way, it is increasingly a concern to content providers that they cannot puzzle out how to deliver audiences to advertisers. Community online seems an accident, even in its earliest incarnations. Salus tells the story of Brian Redman, a pioneering developer of UUCP, who 'began "sending electronic mail on a regular basis", leading to a community' (1995: 133).

This is not a new phenomenon. In Marshall Berman's insightfull book *All that Is Solid Melts into Air*, a description of Georges Haussmann's nineteenth-century Paris should hold particular interest for Internet scholars:

> When Haussmann's work on the boulevards began, no one understood why he wanted them so wide: from a hundred feet to a hundred yards across. It was only when the job was done that people began to see that these roads, immensely wide, straight as arrows, running on for miles, would be ideal speedways for heavy traffic . . .
>
> The archetypal modern man, as we see him here, is a man alone contending against an agglomeration of mass and energy that is heavy, fast and lethal. The burgeoning street and boulevard traffic knows no spatial or temporal bounds, spills over into every urban space, imposes its tempo on everybody's time, transforms the whole modern environment into a 'moving chaos'. The chaos here lies not in the movers themselves – the individual walkers or drivers, each of whom may be pursuing the most efficient route for himself – but in their interaction, in the totality of their common movements in a common space.
>
> (Berman 1982: 158–9)

One can easily mine this passage of Berman's solely for the multiple parallels to Internetworking. But the important point Berman makes later is that twentieth-century architects did all they could to leave the metropolis behind, to create 'supercontrolled environments' (1982: 246) and, ultimately, malls and gated communities. Only by controlling access – traffic – does it become possible to control trafficking, be it in conversation or commodities, as those in the Internet business who have been in the process of creating 'portals' know well.

The economic project of localizing communities in terms of real estate is strikingly similar to the project of localizing (and commercializing) communities in virtual space. But to take a cultural approach to the study of virtual space means, as Carey points out, to accept the notion that Americans, particularly, 'are a people who are always creating new communities and then trying to figure out a way to get out of town' (Carey 1997: 23). With the Internet, at first a particularly American technology, we have invented at once the community and the way out of town.

Conclusion

If we are to begin to understand culture in cyberspace, we therefore need to adapt to our analyses, as Grossberg suggests, by 'rethink[ing] articulations of culture and power' (1997: 354). Adopting a strategy set forth by Deleuze and Guattari, Grossberg exhorts 'that cultural studies explore the concrete ways in which different machines – or, in Foucault's terms, apparatuses – produce the specific spaces, configurations, and circulations of power' (1997: 355–6). An articulation that must be made is between the real and the virtual. As Robins pointed out:

> It is time to relocate virtual culture in the real world (the real world that virtual culturalists, seduced by their own metaphors, pronounce dead or dying). Through the development of new technologies, we are, indeed, more and more open to experiences of de-realization and de-localization. But we continue to have physical and localized existences. We must consider our state of suspension between these conditions. We must de-mythologize virtual culture if we are to assess the serious implications it has for our personal and collective lives.
>
> (Robins 1995: 153)

To do so will require our thinking to move beyond the hyperbole of 'connection' between people, beyond analyses of social networks, groups, and communities, that demonstrate that the Internet 'connects'. Online we are not solely and simply expressing cultural identities we maintain offline; we may be expressing ones entirely unfamiliar to us in other realms and repressing others. But the important issue is that culture and community, though in many ways seemingly inseparable from communication, are nevertheless *not communication*. To study the ways the Internet allows connection and then do little else is not only an acritical approach to the study of life online but it ultimately reifies technology and subsumes human, interpretive activity to the tyranny of the Internet itself.

We would do well instead to examine the Internet's own connections to other realms of human endeavor. At the outset of this chapter we noted the appropriateness of Jonathan Sterne's remarks concerning Internetworking and

everyday life, and they are pertinent as a conclusion, too. If cultural studies can 'denaturalize and radically contextualize the Internet itself' (Sterne 1999: 277), scholars must think less about the connections users make online and more about what it is that connects the expression of particular interpretations and what compels repression of others. We must delve into the how and why of the connections made, the formation and reformation of the structure of the Net both as apparatus and as spatializing force, not in the sense of 'creating space' (such as cyberspace) but rather in the sense that it creates affective spaces. Only by problematizing the relationship between the triumvirate of space, connection, and culture will we make it possible to do so. To borrow from Geertz, how might we 'reduce the puzzlement to which unfamiliar acts emerging out of unknown backgrounds naturally give rise' (1973: 16)? The goal should not be to merely 'connect' the real and the virtual; it should be to embed one within the other. The choice one must make when doing cultural studies of the Internet, therefore, is deciding which one, the real or the virtual, is to be embedded in the other.

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