

UTIS #370323, VOL 25, ISS 2

Critical Theory of Communication Technology: Introduction to the Special Section

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Critical Theory of Communication Technology: Introduction to the Special Section

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The debate over the contribution of new communication technology to democracy is far from settled. Some point to the empowering effects of online discussion and fund-raising on recent electoral campaigns in the United States to argue that the Internet will restore the public sphere. Others claim that the Internet is just a virtual mall, a final extension of capitalist rationalization into every corner of our lives, a trend supported by an ever denser web of surveillance technologies threatening individual autonomy in the advanced societies of the West. This introduction to the special section on critical theory of communication technology argues for the democratic thesis with some qualifications. The most important contribution of new technology to democracy is not necessarily its effects on the conventional political process but rather its ability to assemble a public around technical networks that enroll individuals scattered over wide geographical areas. Communities of medical patients, video game players, musical performers, and many other groups have emerged on the Internet with surprising consequences. New forms of resistance correlate with the rationalizing tendencies of a technologized society.

Keywords communication technology, constructivism, democracy, Internet, resistance

Technologies normally stabilize after an initial period during which many differing configurations compete. Once stabilized, their social and political implications finally become clear. But despite decades of development, the Internet remains in flux as innovative usages continue to appear. The nature of the network is still in question. It is not a fully developed technology like the refrigerator

Received 9 November 2008; accepted 5 December 2008.

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or the ballpoint pen or the electric razor. Yet this has not prevented a huge outpouring of literature hyping the Internet or criticizing its impact. In fact, this controversy is the best evidence that the Internet is not a finished work. The case cannot be closed while the debate continues with such fierce intensity. **30**

This special section on critical theory of new communication technology offers an original approach to the controversy. Each of the three articles acknowledges the intensified rationalization brought about by the Internet and the associated technologies of surveillance, while also highlighting the innovative forms of community that emerge among the publics these technologies assemble. This introduction focuses on the significance of these communities as sites of resistance. Although they appear marginal to politics in the usual sense, they are redefining the political in response to the omnipresence of technology. The correlation of technological rationalization and democratic social initiative provides a more complete picture of the world emerging today than either aspect taken by itself. **35**

HISTORICAL BACKGROUND **50**

In the early days, the Internet was called ARPANET, after the Advanced Research Projects Agency of the Defense Department that specialized in “blue sky” projects, projects so wild and speculative no normal government agency would dare fund them. The engineers associated with its early development were enthusiasts who believed their work would have enormous beneficial impacts. They prophesied a global community organized by computer networks. One of these early enthusiasts, Vinton Cerf, waxed poetic in his “Requiem for the APRANET.” He wrote: **55**

Like distant islands sundered by the sea,
 we had no sense of one community.
 We lived and worked apart and rarely knew
 that others searched with us for knowledge, too. . . **65**

But, could these new resources not be shared?
 Let links be built; machines and men be paired!
 Let distance be no barrier! They set
 that goal: design and build the ARPANET!
 (quoted in Abbate, 1994)

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Fortunately, Cerf is a better engineer than poet!

The Internet gradually went public in the 1980s, but even earlier social commentators were prophesying great things from computer-mediated communication. In 1978
 75 Murray Turoff and Roxanne Hiltz published a serious work of analysis and prediction entitled *The Network Nation* (1993). They foresaw widespread adoption of computer networking for telework and education. They believed networking would promote gender equality and
 80 speculated that electronic discussion and voting would revivify the public sphere in democratic societies.

80

They may have overestimated the transformative power of their favorite technology, but their projections were modest compared to many that came afterward. Accord-
 85 ing to a whole new genre of Internet hype, networking was a change comparable in significance to the Industrial Revolution and would soon transform every aspect of our lives. Cities would be depopulated as people retreated to electronic cottages in the woods. Government as we know
 90 it would be replaced by continuous electronic plebiscites. Artificial intelligences would learn our preferences and control the mechanical world around us without our having to lift a finger. Even sex would be transformed through remote access to virtual partners.

90

Naturally, the hype called forth its demystification. The technology critic David Noble wrote, “visions of democratization and popular empowerment via the net are dangerous delusions; whatever the gains, they are overwhelmingly overshadowed and more than nullified by the losses.
 100 As the computer screens brighten with promise for the few, the light at the end of the tunnel grows dimmer for the many” (Noble, 2006, p. 12).

100

Noble expressed the widespread skepticism about the Internet that appeared in the 1990s as it became a theme of popular discussion. Social critics point to a number of phenomena inimical to democracy. Some argue that the digital divide excludes the poor from participation while enhancing the powers of the well-to-do. Others complain that people segregate themselves on the Internet from those
 110 with whom they disagree so that online discussion merely reinforces preexisting prejudices. Still others argue that the Internet is so thoroughly colonized by business that it is little more than an electronic mall. Democracy is threatened above all by new technologies of surveillance
 115 that employ the network to concentrate information from many sources, exposing deviations from the norm through tracking and data mining. This threat is the subject of the article in this section by Norm Friesen, Andrew Feenberg, and Grace Chung. This article explores the consequences

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of surveillance for personal identity and the resistance it evokes. 120

The most serious of these critiques challenges the ability of the Internet to support real human communication and therefore human community. Without face-to-face contact, it is said, people cannot take each other seriously enough to form a community. How can moral roles bind us and real consequences flow from interactions that are no more durable than a flicker on the screen? As Albert Borgmann wrote, “plugged into the network of communications and computers, people seem to enjoy omniscience and omnipotence; severed from their network, they turn out to be insubstantial and disoriented. They no longer command their world as persons in their own right. Their conversation is without depth and wit; their attention is roving and vacuous; their sense of place is uncertain and fickle” (Borgmann, 1992, p. 108). But for his later view, see Borgmann, 2004). Mark Slouka was even more alarmed, writing, “I believe it is possible to see, in a number of technologies spawned by recent developments in the computer world, an attack on reality as human beings have always known it” (Slouka, 1995, p. 4). 130 135 140

In this introduction I respond to such criticisms and argue that the Internet does have value for democracy. I do not exaggerate the significance of the Internet. It will not replace our customary democratic institutions with a universal electronic town hall meeting. On the contrary, exaggeration seems to me to reflect a lack of perspective. It threatens to blind us to real possibilities that should be seized rather than dismissed. These possibilities have to do with online community, supported by the Internet, and given over, as the critics note, to endless talk. But discussion lies at the heart of a democratic polity. Any new scene on which it unfolds enhances the public sphere. In an increasingly rationalized society, where individuals’ activities are more and more strictly structured by business and government, the existence of this new form of community is particularly significant (Neyland & Woolgar, 2006). 145 150 155

Complaints about the Internet are similar to complaints about television broadcasting and in fact it seems that bad experience with the latter has shaped negative expectations about the former. Recall that television promised a “global village” (Marshall McLuhan) in which new solidarities would arise from easy access to information about other peoples and their problems. It is true that global information circulates on the evening news, but arguably propaganda and advertising have far more influence. Aldous Huxley published *Brave New World* in the early 1930s, only a few years after the first commercial radio broadcasts, but already his dystopian vision of a totally manipulated public captured this very real threat. Many social critics seem to have concluded that technical mediation as such leads to mass alienation. Can the Internet be squeezed into this same pattern? I do not believe so. 160 165 170

The difference between television and the Internet is a consequence of their different technical structures. In broadcasting, a single source sends out messages to a mass audience. The Internet enables reciprocal communication among small groups. The members of these groups both receive and emit information. There is a return here to the normal pattern of human communication in which listening and speaking roles alternate, rather than being distributed exclusively to one or another interlocutor.

The existence of reciprocal communication on the Internet should interest us more than it does. This is in fact the first successful technical mediation of small group activity. There used to be only two forms of mediation: The telephone was effective for pairs of interlocutors, and broadcasting addressed mass audiences. The huge range of human activities that go on in small groups was not technically mediated and therefore could only be carried out in face-to-face settings. That limitation is now overcome, and this is an important advance that we tend to take for granted since it seems so obvious after 30 years of widespread online communication.

The critics underestimate this phenomenon and respond more to the exaggerated claims of Internet hype than to the reality of online experience, including even their own. For example, Hubert Dreyfus focuses his critique on a group called the Extropians who look forward to the day their brains can be downloaded into computers (Dreyfus, 2001). There would be no point in attacking this group if it were not significant, but I do not see what it can signify to those of us who use the Internet daily while remaining firmly committed to embodied existence. To confuse matters further, Dreyfus dodges the charge of Luddism at the end of the book by explaining his use of the Internet in his classes at Berkeley. Nowhere does he reflect on the significance of small-group communication in public life, the signal contribution of the Internet to democracy. Instead, he actually dismisses online discussion as trivial because it is not carried on with sufficient expertise or commitment. But that is not so much a critique of the Internet as of democracy itself.

What is missing in the critics' account is any sense of the great victory represented by ordinary human communication on the Internet. There is a long history of communication technologies introduced for broadcasting or official usages that ended up as instruments of informal human interaction. The telephone, for example, was originally intended for government and business. When women appropriated it to organize the social life of their families, engineers complained bitterly about the waste of their beautiful instrument (Fischer, 1988). Even more surprising, the telephone was at first imagined as a broadcasting technology. In the early days, several companies distributed live musical performance to subscribers. In France

the Théâtrophone company thrived until 1920 broadcasting operas (Bertho, 1984, pp. 80–81).

The Internet story is similar, as we will see. There is also an earlier precedent in the history of computer networking. The first successful domestic network was not the Internet but the French Minitel system. Concerned about the slowness of computerization in France, the government established a network based on technology similar to that of the Internet. Six million free Minitel terminals were distributed to telephone subscribers in the early 1980s. These terminals were designed to consult a national electronic phone directory, to display news and ads, and to consult train schedules, examination results, and other official documents. But soon after the system was deployed, hackers introduced instant messaging. It did not take long for this unexpected application to become the Minitel's single most important usage. Ironically, most of the messaging was dedicated to the search for dates and sex. The cool new information medium was transformed into a hot electronic singles bar (Feenberg, 1995, chap. 7).

Like the Minitel network, the ARPANET was originally designed to support time sharing on computers rather than human communication. Military planners were more interested in survivability than control. For this reason their design was nonhierarchical and redundant, qualities that later turned out to privilege the free flow of information and innovation. Soon after ARPANET went online, at a time when it connected only a few universities, a graduate student introduced an e-mail program. Back at the Pentagon the leaders of the project met to decide whether human communication was a legitimate usage. Like the early telephone company engineers, they were disturbed by wasteful socializing. Fortunately, they agreed to allow the experiment in e-mail to continue. We have inherited the consequence of that decision.

The military design of the Internet thus comes to the aid of ordinary users by rendering it difficult to control and less useful for broadcasting than for communication. Features of the original design persist and pose significant problems for business and repressive governments while also enabling both public spirited and socially stigmatized activities to go on unhindered (Abbate, 1999).

To get an idea of the significance of this design, imagine how we would feel if institutions such as universities, government agencies, and corporations allowed only official communication on their property: no jokes, no personal remarks, no criticism. We would surely find such severe censorship totalitarian. The Internet could have been configured technically in just this way. The result would have been the enhancement of official communication in business and government with no corresponding enhancement of the informal communication in which daily life goes on, including the conversations of political significance that form the basis of the democratic public sphere.

This example indicates the need for a different approach to understanding the Internet from that taken by its severest critics. They overlook the human significance of the technology. They focus on the triviality of most of the communications but they fail to realize that without opening a channel for trivial speech, there can be no serious speech. We have no record of the conversations in those 18th- and 19th-century pubs and coffee houses idealized (perhaps rightly) as the birthplaces of the public sphere, but no doubt in their precincts much time was wasted. Rather than comparing the Internet unfavorably with edited cultural products like newspapers, it would make more sense to compare it with the social interactions that take place on the street. There the coexistence of the good, the bad, and the trivial is normal, not an offense to taste or intellectual standards because we have no expectation of uniform quality. In what follows I outline an approach that allows for the dross and also the gold in the flood of words on the Internet.

I intend to do this through a brief account of the public role of online community on the Internet. I do not discuss the myriad examples of democratic politics in the usual sense of the term. By now these are familiar: the use of the Internet by the Zapatista movement in Mexico, protests against the World Trade Organization (WTO) and the International Monetary Fund (IMF), opposition to the war in Iraq, Howard Dean's and Barack Obama's campaigns, and many other similar interventions. The Internet has broken the near monopoly of the business- and government-dominated official press and television networks by enabling activists to organize and to speak directly to millions of Internet users (McCaughey & Ayers, 2003; Milberry, 2007).

These examples seem to me to provide strong evidence for my position, but they need to be grounded in more fundamental considerations on the nature of the technology and its potentials. A theoretical framework must give them substance. After all, they might be odd exceptions without larger significance and the Internet might be defined by business usages as its critics charge. My main concern in what follows is to develop a coherent alternative to this negative assessment. To anticipate my conclusion, I argue that political usages of the Internet are instances of a much broader phenomenon, the emergence of new forms of agency in online communities of all sorts.

TECHNOLOGY IN FLUX

I want to begin by introducing some essential methodological considerations. As I noted at the beginning of this article, it is a commonplace error to consider the Internet finished and complete before it has actually achieved its final shape. Critics repeatedly generalize from rapidly changing characteristics to timeless conclusions soon outdated

by further changes. But how can we evaluate a technology that is still in process, that is radically incomplete? This problem has been addressed by constructivist approaches in technology studies (Pinch & Bijker, 1987).

The chief idea shared by these approaches is negative: The success of a technology is not fully explained by its technical achievements. There are always alternative paths of development in the beginning and social forces determine which are pursued and which fall by the wayside. Behind each of the technical devices that surround us there lies a halo of alternatives that were eliminated at some stage and that we have forgotten or notice only in the quaint illustrations of old books. What is called the principle of "underdetermination" teaches that technical considerations alone cannot explain why we are living with this particular survivor of the process of elimination rather than that one. History, not technical superiority in some absolute sense, explains why, for example, we use electric rather than gas-powered refrigerators, or gas-powered rather than electric cars.

To make matters still more complicated, the struggle between alternatives is not a straightforward competition to achieve the same goal. Approximately the same technology, with a slightly different design, can serve the interests and needs of very different social groups. Consider for example, significant social difference made by the introduction of sidewalk ramps, a trivial technical change. Constructivists call this variability of goals the "interpretive flexibility" of technologies. What a technology *is* depends on what it is *for*, and that is often in dispute at first. The interpretive flexibility of technologies is greatest at the outset and diminishes as the competition between alternatives is sorted out. Finally, closure is achieved in the consolidation of a standard design capable of prevailing for an extended period. This is what happened to the bicycle, the automobile, and all the familiar technologies that surround us. This has not yet happened to the Internet.

This constructivist approach represents technologies not as things but as processes in more or less rapid movement. The process pulls at first in several different directions but is finally stabilized in a single more or less durable form. Because our lives move quickly with respect to these stabilized forms, it appears that technical artifacts are finished and fixed rather than relatively temporary arrangements that may enter into flux again at a future date. We assume the functions they serve are the obvious ones that similar technologies ought to serve, rather than noticing the contingency of their purpose on a particular configuration of social forces that interpreted the problems in a certain way at the outset. Constructivism aims to overcome this illusion in order to restore a more accurate picture of the process of development.

To apply the constructivist approach to the Internet, we need to identify the various versions of it that currently

coexist and from among which a selection will finally be made. Note that the closure of the Internet around one or another of these possible configurations does not preclude the survival of the others in subordinate roles. At its inception radio broadcasting was dominated by education and public programming, and television was originally conceived for surveillance and education. Both technologies quickly fell under the domination of business-oriented networks and are defined today as entertainment media. Other usages were not excluded, although the technical and legal dimensions of these alternatives are largely determined by the requirements of entertainment (McChesney, 1999).

Critics of the Internet believe something similar has already happened, but they exaggerate the extent of business control so far achieved, as I am sure most business people would agree. A truly business-oriented network like the Minitel offers possibilities unthinkable on the Internet. For example, the French system was designed to track the time individual users spent on services so as to charge them through the telephone bill. The X.25 network protocol employed by the French Telecom made this possible while also complicating the internationalization of the system. The Internet's IP protocol is not useful for charging users for service by the minute, but it has other features that have enabled it to spread over the entire globe. Business is a latecomer to this global system and it is still struggling to find its place.

The Internet as we know it today is dominated not by business but by users whose free communication prevails in cyberspace. The two main types of personal communication are individual e-mail and various forms of group communication such as listservs, forums, blogs, and social sites. These have most recently been joined by new sites and services, including MySpace, Facebook, Flickr, Blogs, wikis, and RSS content syndication, often referred to collectively as Web 2.0.¹ Communities form around these spaces of virtual social interaction. This is significant because community is the primary scene of human communication and personal development. It is in this context that people judge the world around them and discuss their judgments with others. Any technology that offers new possibilities for the formation of community is thus democratically significant.

ONLINE COMMUNITY

Commentators noted early that online communities form around a shared interest or concern. In this they differ from geographically based communities in which a far more mixed population is related by place. The most innovative democratic implications of the Internet are only beginning to emerge, and they have less to do with traditional politics than with these new forms of community that are redefining and enlarging the sphere of politics.

Conventional politics on the Internet is merely an instance of this broader phenomenon, a new kind of social activism emerging in the myriad online communities that populate cyberspace.

This is the central theme of Maria Bakardjieva's contribution to this section. She explains the emergence of new forms of community among Internet users in response to a wide array of civic problems and frustrations. Bakardjieva calls this "subactivism," a kind of pre-politics that opens spaces for agency in relation to institutions such as the medical system, government agencies, and schools. The boundaries between the personal and the political, the "small world" of everyday life and the larger society, are shifting.

To understand this new form of public life we will need to reconsider how we think about technology once more. Politics is traditionally tied to geographical locality on the presumption that those who live close together share common interests and are able to meet to discuss them. Of course, there are likely to be disagreements, but as long as communication is possible, conflicts can be resolved by legitimate means such as voting. The resultant consensus makes communal agency and representation possible.

Yet in a more advanced phase of technological development, this rather narrow definition of politics inherited from the preindustrial past is less plausible. More and more aspects of social life are conditioned by commonalities among people who share a similar relation to the vast technical systems that shape most social life. Technologically advanced societies enroll their members in a wide variety of technical networks that define careers, education, leisure, medical care, communication, and life environments. These networks overlay the geographical communities and compete with them in significance in the lives of citizens. To belong to such a network is to have specific interests that flow from participation in the opportunities it opens up and the problems it causes. These participant interests may be represented better or worse depending on the organization of the network, the possibilities it offers for its members to recognize their shared belonging, and the body of knowledge that presides over it (Feenberg, 1999, chap. 6).

Obtaining adequate representation was well beyond the means of most technically mediated populations in the days before the Internet. Only groups organized around politics in the traditional sense were also able to function effectively as technical groups. The labor movement, for example, was able to impress governments with the importance of health and safety regulations. The movement for gay rights was able to influence the medical system with demands for access to experimental AIDS drugs. But most participants in technical networks went unmobilized and it appeared that some sort of technocratic order would be the outcome of further technological advance.

495 Already in the 1920s John Dewey foresaw the prob-
 lems that would result from these conditions. He worried
 that traditional local community was losing its integrity in
 a mobile modern society. New forms of technically me-
 500 diated community were needed to replace or supplement
 localism, but these were not easy to create. The new links
 being forged by the advancing technical system were still
 inarticulate. Dewey described the dilemma as follows:

Indirect, extensive, enduring and serious consequences of
 conjoint and interacting behavior call a public into existence
 having a common interest in controlling these consequences.

505 But the machine age has so enormously expanded, multi-
 plied, intensified and complicated the scope of the indirect
 consequences, have formed such immense and consolidated
 unions in action, on an impersonal rather than a community
 510 basis, that the resultant public cannot identify and distinguish
 itself. (Dewey, 1980, p. 126)

Dewey hoped that modern technology would mitigate
 the problems it caused by enlarging communicative op-
 portunities. He longed for the recovery of vital local com-
 munities able to grasp their own wider connections. But
 515 he never doubted that the future belonged to large-scale
 technical networks. How this future was to be reconciled
 with a conception of face-to-face democratic deliberation
 he never satisfactorily explained.

This has begun to change. Technical communities now
 520 use the Internet to coordinate their demands for a fuller
 representation of their participant interests. Despite dis-
 couraging developments in other domains, agency in the
 technical sphere is on the rise. The ease of communication
 on the Internet has made it possible for these new com-
 525 munities to organize. The new forms of online politics
 cannot replace traditional geographically based represen-
 tation, but activity in the public sphere can now extend
 to embrace technical issues formerly considered neutral
 and given over to experts to decide without consultation.
 530 This has had the effect of creating a social and technical
 environment in which agency in the traditional domain of
 politics has begun to recover from the passivity induced
 by a steady diet of broadcasting.

The research challenges presented by this new situa-
 535 tion are daunting. Politics is no longer the exclusive affair
 of traditionally constituted political groups debating the
 traditional issues. The range of issues and groups is con-
 stantly widening in the most unpredictable ways. Michel
 Callon and his collaborators have proposed a model for
 540 understanding democratic interventions into technology,
 a model that can guide us in studying the new politics of
 the Internet. Their model describes the struggles of new
 groups to constitute an identity as they simultaneously
 work to redescribe and reinvent the “world” in which they
 545 live (Callon et al., 2009). Internet researchers must be alert
 to similar phenomena in the technically mediated environ-
 ment they study.

The article on massively multiplayer online games by
 Sara Grimes and Andrew Feenberg included in this sec-
 tion illustrates such an approach. The “ludification theory” 550
 explains how online communities form within the ratio-
 nalizing systems of game technology. Once activated, the
 community struggles to reconfigure aspects of the game,
 mobilizing code and items from the game in new ways
 and contexts. Much subactivism involves a similar forma- 555
 tion of community around social ties defined by technical
 involvements of one sort or another. And even surveil-
 lance technology gives rise to temporary communities of
 the surveilled, who enact their unruly dissent before the
 camera. 560

It is by no means clear that Dewey’s fears, echoed in the
 complaints of critics of the Internet today, are unfounded.
 Just as the Internet is unfinished, so is the response to its
 transformative effects on our society. This special section
 565 aims to provoke debate and further research in the belief
 that new approaches to politics are required by the tech-
 nological changes reshaping our experience of ourselves
 and the world around us.

NOTES

1. It is worth noting that Web 2.0, insofar as there really is such a
 thing, did not introduce community to the Internet. It consists of the
 concretization and combination of communicative resources already
 present in separate programs in the online environment.

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