Invited Editorial

TextWorlds: What Happened in Cyberspace[1]

Éditorial invité

Textworlds: Ce qui s'est passé dans le cyberespace

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Since the early 1980s, more and more of our social life has gone on in cyberspace. Many social interactions that used to be face-to-face are now mediated. For the most part the mediation is written text, which has become a far more flexible instrument than in the past. So, we are now typing our identities and our relationships. This remarkable change has freed us from time and space constraints while making us dependent on computers, software and the corporations that own online services. Has our social world been colonized by technology and these corporations or have we imposed our communicative imperatives on the technocratic order of computing? Is this new situation a triumph of technocracy or a new form of democratic intervention into technology? As we will see, these questions hide a deeper one concerning the relation of technology to society. This talk will sketch responses to these questions by considering the origins of online education and instant messaging, also called "texting," two new forms of written interaction that have had widespread impacts on society. Reflection on these case histories gives perspective on our present. Since I was around at the origin in both cases, I will offer a personal account.

I was working at the Western Behavioral Sciences Institute in La Jolla, California when the Director decided to create a distance learning system for executives based on a computer network. This was in 1981 and nothing like this had ever been done before. The Internet was closed to the public and e-mail was still new, used primarily in computer companies and a few university research departments.

In those days, when you signed up for a distance learning program you received a package of printed materials in the mail. You had no contact with other students or your teachers. We invented e-learning in order to add human interaction to distance learning. We found a proprietary network and a host computer running a computer conferencing program, and hired

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faculty from major universities, fascinated by the prospect of using a computer for the first time. We opened our program in January of 1982, but with only seven students because it had proven extremely difficult to recruit for a program so innovative almost no one could understand it. The faculty still had to send out readings by mail, but our students could discuss the readings online and discuss they did, generating hundreds of pages of transcripts each month. This communicative application of computer networks came as a surprise to both educators and computer specialists, although today it is routine.

This experience put me in touch with leading people in industry and government. I recall going to lunch in the early 1980s with a vice president of one of the largest computer companies in the world. He asked my opinion on the future of computing. I thought to myself, "if this guy doesn't know and is asking me, a student of Herbert Marcuse, then no one knows!" It became clear to me that technology was highly flexible and unpredictable and not at all like the image of the rigidly rational system projected by admirers and critics of technology alike. In fact we were proving this point in practice. By creating the first online education program at a time when computers were understood as calculating and filing devices, we contributed to reinventing computer technology as a medium of communication.

But there were many problems. The normal way in which one learns to teach is by being taught. Most people who have studied in a classroom have no difficulty performing the basic rituals of teaching such as facing the class to speak, recognizing those who raise their hands, using a blackboard, and so on. But none of our teachers had ever been in an online classroom and so they had no idea what they were supposed to do. Neither did we. It took a while to figure out how to initiate discussion and build interaction online but eventually we devised a dialogic pedagogy that became part of the culture of our school. Once students experienced successful online classes, they were impressed and spread the word about our program. We were moderately successful for 10 years but never attracted the kind of support we needed to make a major impact and meet our costs.

Large-scale interest in online education only appeared at the end of the 1990s, during a crisis in university funding. But paradoxically what computer companies and college administrators understood by "online education" was quite different from our pioneering program. The meaning of the term had slipped. Where we had added communication to a traditional distance learning system that lacked it, the new advocates of online education hoped to automate education on the Internet, eliminating the existing interaction in the classroom.

Of course the ambition to automate education provoked faculty rage. I recall feeling targeted by colleagues who blamed me for this monstrous assault on their profession. I could only say, "It's not my fault, I lost control of my idea long ago." David Noble, the Marxist historian of deskilling, became the principal critic of online education and he and I participated in several public debates on the virtues and vices of the new system.

In my writings on online education I attempted to place the issues in the widest possible context. This was necessary because I was fighting on two fronts, against humanists who dismissed all electronic mediation and technocrats who saw in it the promise of eliminating the teaching profession. Their values differed but their arguments converged in a deterministic conception of technology as a dehumanizing and commercially profitable alternative to traditional arrangements.

The philosophical argument begins with Plato, 2500 years ago. He initiated the tradition of media critique with his claim that writing is an inferior medium to speech since the author cannot be made to answer back. His critique echoes still in such philosophers as Martin Heidegger and Jean-François Lyotard who identify the digital encoding of information in computers as the source of their dehumanizing effects. This argument culminates finally in the attack on online education for substituting computers for humanistic understanding. But the notion that the use of computers will somehow bias language and learning toward the strictly functional or technical is wildly off the mark. The deterministic hypothesis on which this notion rests has been refuted by the predominantly informal communicative usages of computer networks. To judge by the results, users have had as much impact on computers as computers have had on users.

This argument opens the technical question of the design of computer systems in education. So long as the computer as such is the problem, design is unimportant. But if the computer is innocent, at least of the charge of dehumanization, then everything depends on how the systems are put together. Automation is one possible design agenda.

The transfer of skills from craftsmen to machines is an old pattern that underlies the industrial revolution and continues through the Taylorist and Fordist developments of the 20th century. The industrial technical code aims to centralize control of the workforce and to lessen labor costs by substituting machines tended by unskilled labor for skilled labor. The automation agenda responds to this technical code.

The project of automating education on the Internet follows a long line of initiatives beginning in the 1950s with Computer Aided Instruction, or CAI. CAI was delivered by the (ironically called) Plato system, and later by application programs running on personal computers. But it could never offer a really convincing substitute for live face-to-face instruction. At the end of the 1990s, we were led to believe that the new multimedia features of the Internet could provide a more realistic experience. The Internet promised simulated interaction and video delivery of canned lectures by "star" professors, adding a little life to the sterile programs of earlier CAI.

But would it really work? And if so, would it be desirable? Faculty were skeptical, and not only because they feared losing their jobs. No one who has dealt with students' questions believes current artificial intelligence is up to the task of anticipating and answering them. There are subtle interactions that make a difference in real classroom situations and these cannot be duplicated by videos and FAQs ("Frequently Asked Question" lists). More importantly, informal and to some extent even formal human communication leaves it up to the participants to define the boundaries of relevance on the spot. These boundaries can be enlarged on occasion to include reflection on the communication process itself. Such meta-communicative practices are essential to our idea of freedom. They would be excluded by an automated system in which relevance was inscribed in software.

Early online education was quite different. It was based entirely on human communication. For this alternative, the computer offers a virtual meeting place rather than a simulacrum of the classroom. Students and faculty create a text together that contains the record of their discussions. But online communication has its own limitations and problems. Its unusual pragmatics differ from their face-to-face equivalent through asynchronicity and the absence of paralinguistic signs. Analysis of this communicative practice brings out the dependence of group relations on characteristics of the technologies binding together the group.

All group activity is mediated by objects. The seminar requires its table around which to sit and games require boards or fields. But in the case of education the semantic flow is carried by the mediation and that has complex implications. We are here in territory explored by media theorists such as Marshall McLuhan. The medium is, if not the whole message, at least a significant part of it. McLuhan could only observe patterns of electronic mediation in two cases, telephone communication between pairs of interlocutors and various types of one-way broadcasting. The computer network makes possible a third case: asynchronous online interaction in small groups. This new technology opens up a huge range of activities to electronic mediation that had formerly to take place in real time face-to-face encounters.

Small groups are the social settings of much white-collar work, education, and a wide variety of social clubs and information exchanges. The social codes for all these activities are familiar and negotiating communication problems in face-to-face dialogue is relatively straightforward. But online group interaction is another story entirely. Since interactions are in writing, they impose a different rhythm and require a different kind of leadership. These are "textworlds" that have their own logic and laws.

Since the early days of online communication, many attempts have been made to explain how best to organize and lead interaction in these unusual worlds. If forum software can be compared to the classroom or the seminar table, then its design matters for the unfolding interactions that take place within it. Since these interactions are primarily written, it has occurred to me that we should take better advantage online of what we know about relating to written texts. I have been working with others to incorporate some useful features of that relationship into a piece of software designed to support online interaction. The latest version is called Marginalia. (It can be seen at http://webmarginalia.net.)

This project corresponds to a different design agenda from automation. Its aim is to enhance human communication by enabling discussion participants to write marginal notes and tags helpful for reviewing and summarizing the discussion archive. My project is one of a great many that flourish in the educational field. Teachers working closely with programmers devise original solutions to the problem of achieving traditional pedagogical goals in a new environment. This is an example of "participatory design." Participatory design contrasts with technocratic design by isolated experts charged with centralizing power and enhancing control over a dependent and deskilled network of users or workers.

My second case introduces yet another type of democratic intervention in a very different social environment. In the mid 1980s I was invited by the French telecom to introduce a computer conferencing component to the Minitel system. I spent some time in France working on this project and learned a great deal about the Minitel in the process of attempting to introduce this new service.

The Minitel is now a forgotten episode in the prehistory of the Internet. But it was a very important landmark in online communication, proving for the first time the possibility of a domestic computer network. What made the Minitel so successful was the free distribution of user-friendly terminals that plugged into the phone system. One did not need to know anything about computers to get up and running on the system. Entrepreneurs could easily hook up hosts and their revenues were guaranteed by the phone company, which billed customers for each

minute of online service. Six million terminals were distributed and the system proved both a social and an economic success until it was finally eclipsed by the Internet in recent years.

Although the system had originally been conceived to distribute information to households, the most exciting application was invented by hackers who broke into a news service to chat online in pursuit of friendship and dates. Very quickly other host services introduced programs to capture and collect revenue from this new flow of communication. This was the first widespread public use of instant messaging. It joined hundreds of thousands of French men and women every day in anonymous interactions, some of which led, of course, to the exchange of real names, phone numbers and eventually to face-to-face meetings. The asynchronous computer conferencing programs I was engaged to introduce would have enhanced the communicative functionalities of the system by supporting more complex interactions such as business meetings, classes, and other group activities carried on through written discussion online. We were not very successful but I do not think this was our fault. We encountered a significant obstacle in the Minitel itself.

The main problem was the image of the system. The French educational system was far too stodgy to take up our innovation, but we had hoped that business would be interested. How wrong we were! The very design choices that made the Minitel acceptable to the public and suited to placement in the home, diminished its credibility in a business context. The image problem was aggravated by "pink" messaging. Who could believe an electronic singles bar had promise as a venue for business meetings?

But there was also a technical issue. I recall one incident that clarified the problem for me. The Minitel was conceived for consulting databases stored in videotext pages and accessed through hierarchical menus. The keyboard was designed by a telephone manufacturer to punch in the abbreviated names of services and the numbers of menu items, but this is not what communicating users of the system required. I wrote a short note on the keyboard for the directors of the telecom in the hope that a new terminal would be designed more suitable for typing and hence for communication. There was no response to my recommendation and soon I learned that the telecom was ashamed of the communication on its system since so much of it revolved around sex. They had inscribed informational usages in the Minitel hardware and had no intention of changing that even though the users had reinvented the technology around a new social form.

Once again I confronted the alternative: technical "rationality" as conceived by bureaucrats and technicians versus communication as conceived by users. This alternative reflected different social visions of modernity: a vision focused on the narrowly conceived goals of organizations such as government agencies and businesses, and a vision focused on a broader range of human needs evident to users but not to the technocrats in charge of designing and implementing the system. Later when the Internet was opened to the public more was learned about the history of communication on that system. We discovered that the original purpose of the network was to share computer time and data. E-mail was introduced by a young engineer who wrote a small program that is the granddaddy of e-mail on the web to this day. Here too the contrast appears between official design goals and user agency.

This case shows that one can trace an ideology "all the way down" in the sense that discursive expressions of social visions can be found reflected in details of technical design and vice versa.

The identification of congruencies demonstrates that technology and society are not two separate domains but intricately imbricated.

In the Minitel case the democratic intervention started out with the actions of a few hackers. Yet their innovation would have been without significance had it not been seized on by millions of users. In this sense it can be said to be democratic. But in a deeper sense, democracy is at stake in any intervention into technology that enlarges the scope of human communication and serves a wider range of legitimate human needs than those represented by technocratic rationality.

What needs were served by this widening in the Minitel case? In one sense the answer is obvious: users pursued friendship and sexual encounters with remarkable openness. But the role of anonymity in this case raises interesting questions about post-industrial society. The increasing impersonality of rationalized interactions opens up a vast sphere of anonymity in everyday life. The efficiency of these official and economic transactions appears to validate this new social form, but the functional role of anonymous encounters does not exhaust their significance in the psychic life of the individuals. Rationalized interactions are not a perfect substitute for other more personal interactions in the lost communities of earlier times. The affective surplus shows up in longing for community and, more ominously, in fantasies of sex and violence in popular culture.

The Minitel was introduced to enhance post-industrial efficiency by enabling users to personalize anonymous requests for information relevant to the pursuit of "rational" ends such as business or academic success. But unwittingly the technocrats also made it possible to personalize other less "rational" anonymous requests, among which the most urgently pressing in an atomized society concern human relations. Thus the system almost invited the hack to which it was submitted. In the process, its socio-technical form was altered. From a hierarchical system in which individuals connected individually to central hosts rich in informational content, it was effectively transformed into a commutative system in which everyone connected with everyone for personal communication. Originally conceived as an electronic library accessed through the telephone network, the system became a written version of the telephone network as well.

What can we conclude from these "prehistoric" cases? The proliferation of written communication on the Internet is not a natural result of technological progress. These cases show that it is a contested usage of technologies intended for quite different purposes. Furthermore, writing is transformed as it becomes the bond for new types of social relations made possible— but not necessary—by the new technology. In sum, new forms of collective writing impose technological change while mediating new social forms. As humanists we are charged with interpreting the content of texts, but today that is not enough. Now we must also decipher the meaning of technologies and of our own rapidly changing social life.

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