Toward a Social Philosophy of Technology

Heidegger's Critique of Modernity

Heidegger is no doubt the most influential philosopher of technology in this century. Of course he is many other things besides, but it is undeniable that his history of being culminates in the technological enframing. His ambition was to explain the modern world philosophically, to renew the power of reflection for our time. This project was worked out in the midst of the vast technological revolution that transformed the old European civilization, with its rural and religious roots, into a mass urban industrial order based on science and technology. Heidegger was acutely aware of this transformation which was the theme of intense philosophical and political discussion in the Germany of the 1920s and '30s (Sluga, 1993; Herf, 1984). At first he sought the political significance of "the encounter between global technology and modern man." The results were disastrous and he went on to purely philosophical reflection on the question of technology (Heidegger, 1959: 166).

In this chapter I will engage his philosophy of technology critically from the standpoint of a different understanding of history and a different view of the relation of philosophy to the social world. In conclusion I will present an alternative to his philosophy of technology based on the social approach taken throughout this book.

Heidegger claims that technology turns everything it touches into mere raw materials, which he calls "standing reserves" (Heidegger, 1977a). We ourselves are now incorporated into the mechanism, mobilized as objects of technique. Modern technology is based on methodical planning which itself presupposes the "enframing" of being, its conceptual and experiential reduction to a manipulable vestige of itself. He illustrates his theory with the contrast between a silver chalice made by a Greek craftsman and a modern dam on the Rhine (Heidegger, 1977a). The craftsman gathers the elements—form, matter, finality—and thereby brings out the "truth" of his materials. Modern technology "de-worlds" its materials and "summons" nature to submit to extrinsic demands. Technology thus violates both humanity and nature at a far deeper level than war and environmental destruction. Instead of a world of authentic things capable of gathering a rich variety of contexts and meanings, we are left with an "objectless" heap of functions.

Translated out of Heidegger's ontological language, this seems to mean that technology is a cultural form through which everything in the modern world becomes available for control. This form leaves nothing untouched: even the homes of Heidegger's beloved Black Forest peasants are equipped with TV antennas. The functionalization of man and society is thus a destiny from which there is no escape. Heidegger calls for resignation and passivity rather than an active program of reform which would simply constitute a further extension of modern technology. As Heidegger explained in his last interview, "Only a god can save us" from the juggernaut of progress (Heidegger, 1977b).

Although Heidegger means his critique to cut deeper than any social or historical fact about our times, it is by no means irrelevant to a modern world armed with nuclear weapons and controlled by vast technology based organizations. These latter in particular illustrate the concept of the enframing with striking clarity. Alain Gras explores the inexorable growth of such macro-systems as the electric power and airline industries (Gras, 1993). As they apply ever more powerful technologies, absorb more and more of their environment, and plan ever further into the future, they effectively escape human control and indeed human purpose. Macro-systems take on what Thomas Hughes calls "momentum," a quasi-deterministic power to perpetuate themselves and to force other institutions to conform to their requirements (Hughes, 1989).

Heidegger's critique of "autonomous technology" is thus not without merit. Increasingly, we lose sight of what is sacrificed in the mobilization of human beings and resources for goals that remain ultimately obscure. So far so good. But there are significant ambiguities in Heidegger's approach. He warns us that the essence of technology is nothing technological, that is to say,

technology cannot be understood through its usefulness, but only through our specifically technological engagement with the world. But is that engagement merely an attitude or is it embedded in the actual design of modern technological devices? In the former case, we could achieve the "free relation" to technology which Heidegger demands without changing technology itself. But that is an idealistic solution in the bad sense, and one which a generation of environmental action would seem decisively to refute.

Heidegger's defenders point out that his critique of technology is not merely concerned with human attitudes but with the way being reveals itself. Again roughly translated out of Heidegger's language, this means that the modern world has a technological form in something like the way in which, for example, the medieval world had a religious form. Form in this sense is no mere question of attitude but takes on a material life of its own: power plants are the gothic cathedrals of our time. But this interpretation of Heidegger's thought raises the expectation that he will offer criteria for a reform of technology qua device. For example, his analysis of the tendency of modern technology to accumulate and store up nature's powers suggests the superiority of another technology that would not challenge nature in Promethean fashion.

Unfortunately, Heidegger's argument is developed at such a high level of abstraction he literally cannot discriminate between electricity and atom bombs, agricultural techniques and the Holocaust. In a 1949 lecture, he asserted: "Agriculture is now the mechanized food industry, in essence the same as the manufacturing of corpses in gas chambers and extermination camps, the same as the blockade and starvation of nations, the same as the production of hydrogen bombs." (Quoted in Rockmore (1992: 241)). All are merely different expressions of the identical enframing, which we are called to transcend through the recovery of a deeper relation to being. And since Heidegger rejects technical regression while leaving no room for a better technological future, it is difficult to see in what that relation would consist beyond a mere change of attitude. Surely these ambiguities indicate problems in his approach.[1]

A Contemporary Critique

Technology and Meaning

Heidegger holds that the restructuring of social reality by technical action is inimical to a life rich in meaning. The Heideggerian relation to being is incompatible with the overextension of technological thinking. It seems, therefore, that identification of the structural features of enframing can found a critique of modernity. I intend to test this approach through an evaluation of some key arguments in the work of Albert Borgmann, the leading American representative of philosophy of technology in the essentialist vein.[2]

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[1]I would of course be willing to revise this view if shown how Heidegger actually envisages technological change. What I have heard from his defenders is principally waffling on the attitude/device ambiguity described here. Yes, Heidegger envisages change in "technological thinking," but how is this change supposed to effect the design of actual devices? The lack of an answer to this question leaves me in some doubt as to the supposed relevance of Heidegger's work to ecology. One enthusiastic defender informed me that art and technique would merge anew in a Heideggerian future, but was unable to cite a text. That would indeed historicize Heidegger's theory, but in a way resembling Marcuse's position in *An Essay on Liberation* (1968) with its eschatological concept of an aesthetic revolution in technology. It is not clear how the case for Heidegger is fundamentally improved by this shift, which would not make much difference to the substantive arguments presented here. More plausibly, Heidegger merely hopes that art will regain the power to define worlds as we detach ourselves from technology. For an interesting defense of Heidegger's theory of technology that eschews mystification, see Dreyfus (1995).

[2]For another contemporary approach that complements Borgmann's, see Simpson (1995). Simpson denies that he is essentializing technology, and yet he works throughout his book with a minimum set of invariant characteristics of technology as though they constituted a "thing" he could talk about independent of the socio-historical context (Simpson, 1995: 15-16, 182). That context is then consigned to a merely contingent

Borgmann's social critique is based on the concept of the "device paradigm" as the formative principle of a technological society which aims above all at efficiency. In conformity with this paradigm, modern technology separates off the good or commodity it delivers from the contexts and means of delivery. Thus the heat of the modern furnace appears miraculously from discreet sources in contrast with the old wood stove that stands in the center of the room and is supplied by regular trips to the woodpile. The microwaved meal emerges effortlessly and instantly from its plastic wrapping at the individual's command in contrast with the laborious operations of a traditional kitchen serving the needs of a whole family.

The device paradigm offers gains in efficiency, but at the cost of distancing us from reality. Let us consider the substitution of "fast food" for the traditional family dinner. To common sense, well prepared fast food appears to supply nourishment without needless social complications. Functionally considered, eating is a technical operation that may be carried out more or less efficiently. It is a matter of ingesting calories, a means to an end, while all the ritualistic aspects of food consumption are secondary to biological need. But what Borgmann calls "focal things" that gather people in meaningful activities that have value for their own sake cannot survive this functionalizing attitude.

The unity of the family, ritually reaffirmed each evening, no longer has a comparable locus of expression today. One need not claim that the rise of fast food "causes" the decline of the traditional family to believe that there is a significant connection. Simplifying personal access to food scatters people who need no longer construct the rituals of everyday interaction around the necessities of daily living. Focal things require a certain effort, it is true, but without that effort, the rewards of a meaningful life are lost in the vapid disengagement of the operator of a smoothly functioning machinery (Borgmann, 1984: 204ff).

Borgmann would willingly concede the usefulness of many devices, but the generalization of the device paradigm, its substitution for simpler ways in every context of daily life, has a deadening effect. Where means and ends, contexts and commodities are strictly separated, life is drained of meaning. Individual involvement with nature and other human beings is reduced to a bare minimum, and possession and control become the highest values.

Borgmann's critique of technological society usefully concretizes themes in Heidegger. His dualism of device and meaning is also structurally similar to Habermas's distinction of work and interaction (Habermas, 1970). This dualism always seems to appear where the essence of technology is in question.[3] It offers a way of theorizing the larger philosophical significance of the modernization process, and it reminds us of the existence of dimensions of human experience that are suppressed by facile scientism and the uncritical celebration of technology. Borgmann's contrast between the decontextualization of the device and the essentially contextual focal thing reprises Heidegger's distinction between modern technological enframing, and the "gathering" power of traditional craft production that draws people and nature together around a materialized site of encounter. Borgmann's solution, bounding the technical sphere to restore the centrality of meaning, is reminiscent of Habermas's strategy (although apparently not due to his influence.) It offers a more understandable response to invasive technology than anything in Heidegger.

However, Borgmann's approach suffers from both the ambiguity of Heidegger's original theory and the limitations of Habermas's. We cannot tell for sure if he is merely denouncing the modern attitude toward technology or technological design, and in the latter case, his critique is so broad it offers no criteria for the constructive reform of technology itself. He would probably agree with Habermas's critique of the colonization of the lifeworld, although he improves on that account by discussing the all important role of technology in modern social pathologies. But like

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level of influences, conditions, or consequences rather than being integrated to the conception of technology itself.

[3]In the next part of this paper I will attempt to resituate this dualism within technology itself, to avoid the ontologized distinctions characteristic of essentialism.

Habermas, he lacks a concrete sense of the intricate connections of technology and culture beyond the few essential attributes on which his critique focuses. Since those attributes have largely negative consequences, we get no sense from the critique of the many ways in which the pursuit of meaning is intertwined with technology. And as a result, Borgmann imagines no significant restructuring of modern society around culturally distinctive technical alternatives that might preserve and enhance meaning.

But how persuasive is this objection to Borgmann's approach? After all, neither Russian nor Chinese communism, neither Islamic fundamentalism nor so-called "Asian values" have inspired a fundamentally distinctive stock of devices. Why *not* just reify the concept of technology and treat it as a singular essence? The problem with that is the existence of smaller but still significant differences which may become more important in the future rather than less so as essentialists assume. What is more, those differences often concern precisely the issues identified by Borgmann as central to a humane life. They determine the nature of community, education, medical care, work, our relation to the natural environment, the functions of devices such as computers and automobiles, in ways either favorable or unfavorable to the preservation of meaning and focal things. Any theory of the essence of technology which forecloses the future therefore begs the question of difference in the technical sphere.

Interpreting the Computer

I would like to pursue this contention further with a specific example that illustrates concretely my reasons for objecting to this approach to technology. The example I have chosen, human communication by computer, is one on which Borgmann has commented fairly extensively and which we have already discussed in chapter 5. While not everyone who shares the essentialist view will agree with his very negative conclusions, his position adequately represents that style of technology critique, and is therefore worth evaluating here at some length.[4]

Borgmann introduces the term "hyperintelligence" to refer to such developments as electronic mail and the Internet (Borgmann, 1992: 102ff). Hyperintelligent communication offers unprecedented opportunities for people to interact across space and time, but, paradoxically, it also distances those it links. No longer are the individuals "commanding presences" for each other; they have become disposable experiences that can be turned on and off like water from a faucet. The person as a focal thing has become a commodity delivered by a device. This new way of relating has weakened connection and involvement while extending its range. What happens to the users of the new technology as they turn away from face-to-face contact?

> Plugged into the network of communications and computers, they seem to enjoy omniscience and omnipotence; severed from their network, they turn out to be insubstantial and disoriented. they no longer command the 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: 108).

This negative evaluation of the computer can be extended to earlier forms of mediated communication. In fact Borgmann does not hesitate to denounce the telephone as a hyperintelligent substitute for more deeply reflective written correspondence (Borgmann, 1992: 105).

There is an element of truth in this critique. On the networks, the pragmatics of personal encounter are radically simplified, reduced to the protocols of technical connection. It is easy to pass from one social contact to another, again following the logic of the technical network that supports ever more rapid commutation. However, Borgmann's conclusions are too hastily drawn and simply ignore the role of social contextualizations in the appropriation of technology. A look, first, at the history of computer communication, and, second, at its innovative applications today refutes his overly negative evaluation. We will see that the real struggle is not between the

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[4]For another critique of the computer similar to Borgmann's, see Slouka (1995).

computer and low tech alternatives, but within the realm of possibilities opened by the computer itself.

In the first place, the computer was not destined by some inner techno-logic to serve as a communications medium. As we saw in chapter 5, the major networks, such as the French Teletel or the Internet were originally conceived by technocrats and engineers as instruments for the distribution of data. What actually happened in the course of the implantation of these networks? Users appropriated them for unintended purposes and converted them into communications media. Soon they were flooded with messages that were considered trivial or offensive by their creators. Teletel quickly became the world's first and largest electronic singles bar (Feenberg, 1995a: chap. 7). The Internet is overloaded with political debates dismissed as "trash" by unsympathetic critics. Less visible, at least to journalists, but more significant, all sorts of other applications of computers to human communication gradually appeared, from business meetings to education, from discussions among medical patients, literary critics, and political activists to on-line journals and conferences.

How does Borgmann's critique fare in the light of this history? It seems to me there is an element of ingratitude in it. Because Borgmann takes it for granted that the computer is useful for human communication, he neither appreciates the process of making it so, nor the hermeneutic transformation it underwent in that process. He therefore also overlooks the political implications of the history sketched above. Today the networks constitute a fundamental scene of human activity. To impose a narrow regimen of data transmission, to the exclusion of all human contact, would surely be perceived as totalitarian in any ordinary institution. Why is it not a liberation to break such limitations in the virtual world that now surrounds us?

In the second place, Borgmann's critique ignores the variety of communicative interactions mediated by the networks. No doubt he is right that human experience is not enriched by much of what goes on there. But a full record of the face-to-face interactions occurring in the hall rooms of his university would likely be no more uplifting. The problem here is that we tend to judge the face-to-face at its memorable best and the computer mediated equivalent at its transcribed worst. Borgmann simply ignores more interesting uses of computers, such as the original research applications of the Internet, and teaching applications which show great promise (Harasim, et. al., 1995). It might surprise Borgmann to find the art of reflective letter writing reviving in these contexts.

Consider for example the discussion group on the Prodigy Medical Support Bulletin Board devoted to ALS (Amyotrophic Lateral Sclerosis or Lou Gehrig's Disease). In 1995, when I studied it, there were about 500 patients and caregivers reading exchanges in which some dozens of participants were actively engaged (Feenberg, et. al., 1996). Much of the conversation concerned feelings about dependency, illness, and dying. There was a long running discussion of problems of sexuality. Patients and caregivers wrote in both general and personal terms about the persistence of desire and the obstacles to satisfaction. The frankness of this discussion may owe something to the anonymity of the online environment, appropriated here for very different purposes than those Borgmann criticizes. Here the very limitations of the medium open doors that might have remained closed in a face-to-face setting.

These online patient meetings have the potential for changing the accessibility, the scale, and the speed of interaction of patient groups. Face-to-face self help groups are small and localized. With the exception of AIDS patients they have wielded no political power. If AIDS patients have been the exception, it is not because of the originality of their demands: patients with incurable illnesses have been complaining bitterly for years about the indifference of physicians and the obstacles to experimental treatments. What made the difference was that AIDS patients were "networked" politically by the gay rights movement even before they were caught up in a network of contagion (Epstein, 1996: 229). Online networks may similarly empower other patient groups. In fact, Prodigy discussion participants established a list of priorities they presented to the ALS Society of America. Computer networking may thus feed into the rising demand by patients

for more control over their own medical care. In that case, subversive rationalization of the computer would contribute to a parallel transformation of medicine.

It is difficult to see any connection between these applications of the computer and Borgmann's critique of "hyperintelligence." Is this technologically mediated process by which dying people come together despite paralyzing illness to discuss and mitigate their plight a mere instance of "technological thinking?" Certainly not. But then how would Heidegger incorporate an understanding of it into his theory, with its reproachful attitude toward modern technology in general? The ambiguities of the computer are far from unique. In fact they are typical of most technologies, especially in the early phases of their development. Recognizing this malleability of technology, we can no longer rest content with globally negative theories that offer only condemnation of the present and no guidance for the future.

Borgmann's critique of technology pursues the larger connections and social implications masked by the device paradigm. To this extent it is genuinely dereifying. But insofar as it fails to incorporate these hidden social dimensions into the concept of technology itself, it remains still partially caught in the very way of thinking it criticizes. His theory hovers uncertainly between a description of how we encounter technology and how it is designed. Technology, i.e. the real world objects so designated, both is and is not the problem, depending on whether the emphasis is on its fetish form as pure device or our subjective acceptance of that form. In neither case can we change technology "in itself." At best, we can hope to overcome our attitude toward it through a spiritual movement of some sort.[5]

I propose a very different conceptualization that includes the integration of technologies to larger technical systems and nature, and to the symbolic orders of ethics and aesthetics, as well as their relation to the life and learning processes of workers and users, and the social organization of work and use. On the essentialist account, one could still admit the existence of these aspects of technical life, but they would be extrinsic social influences or consequences. Essentialism proposes to treat all these dimensions of technology as merely contingent and to hand them over to sociology while retaining the unchanging essence for philosophy. A certain conception of philosophy is implied in this approach.

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[5]Andrew Light has argued that I underestimate the significance of Borgmann's distinction between device and thing for an understanding of the aesthetics of everyday life. The distinction is useful for developing a critique of mass culture and could provide criteria for subversive rationalizations of the commodified environment. The story of the ALS patients told here could be interpreted in this light as an example of the creation of a meaningful community through the creative appropriation of the hyperreal technological universe Borgmann describes (Light, 1996: chap. 9). I am in general agreement with this revision of Borgmann's position, but in some doubt as to whether Borgmann himself would be open to it.