

TECHNOLOGY AS PRACTICE AND (SO) WHAT ABOUT EMANCIPATORY INTEREST*

Marike Finlay

New eyes for computers: chips that see.
Popular Science, 1982

In *Discipline and Punish* and in *Madness and Civilization*, Foucault suggested that, for reasons of efficiency, discursive institutions such as the penal system and mental hospitals organized themselves in such a way as to ensure the permanent visibility or surveillance of their charges.² They did so by means of the panopticon, first proposed by Bentham. The panopticon was a means by which the charge could be isolated, individualized, and backlighted. The observer in the central tower could always see the charge. The charge however could not look back and could never know when he or she was being observed. The charge is, therefore constantly obliged to behave correctly and eventually internalizes the rules of correct behaviour by internalizing the threat of the permanent look. Foucault transfers this architectural schema to the discursive realm whereby the charge surveys himself permanently by virtue of being obliged to practice a set of discursive procedures imposed upon him by the observing or controlling order. Physical restriction — chains — are no longer necessary since the client, criminal, patient or schoolboy has internalized the principles of his own surveillance by internalizing the discursive procedures of the watcher.

Editor's note: This is the second part of a two part article. The first appeared in the CJPST, Volume X, Numbers 1-2 (1986), pages 174-195.

EMANCIPATORY TECHNOLOGY?

In talk about anew communications technology, the panoptic motif surfaces time and again. Historically, one of the functions of electronic business machines, precursors to business computer-communications, was said to be to centralize surveillance of workers, payroll and customs.²

The desire for control via surveillance and record-keeping is quite unoccluded even in very early writings on data processing.

to throw some light on some of the great mysteries of why we behave as we do (...) psychologists may some day be able to come up with scientific means of setting problems for workers (...) we may be able to devise methods of presenting data so that it can be most easily transferred from one fellow to another, for example, in advertising or safety.³

The ubiquity of new communications technology as it is constantly being described⁴, serves to indicate the panoptic nature of these technologies. New communications technology is described as expanding; what is more, new communications technology is described as the seeing eye, as a recording, remembering, watch-dog technology. Rather than being blind-sided by the privacy debate, one should perhaps analyse the type of social space where technology or surveillance communication is ubiquitous and yet still expanding. This does not imply merely procedures of an individual internalization of surveillance, but those of a whole society internalizing surveillance. We might coin the term, "social panopticism," a new type of surveillance which, like other forms of panopticism, is the cheapest, most expedient way to maintain social control. It is this panopticism for which discourses on new communications technology express a desire and a design. Perhaps the electronic invention that best exemplifies panopticism is the lie detector:

Electricity is used to solve crime mystery. By quickened heartbeats, and by a change in electrical resistance of his skin, due to an effort to conceal the truth, the "culprit" was easily detected... science is now able to aid in the war against crime.⁵

What is most important here is not so much the external supervision but the fact that power actually codes the interiority of subjects.⁶

Not only is panopticism a procedure of the practice of discourse about new communications technology, it is also a procedure of various practices of new communications technology itself considered as a set of discursive practices.

One practice of new communications technology, telematics, is a hybrid of computer processing facilities and telecommunications. This hybrid allows for increased memory and extensive cross-referencing of record keeping. The result of this is an increased surveillance capacity

quite akin to the way in which citizens in the seventeenth-century, by registering for philanthropic social services, were simultaneously yielding a record of themselves for purposes of social control, such as the draft.

The panopticon has an almost incarnate manifestation in the networking systems of "telematique" whereby users are individualized and connected to a central data-banking facility. The user has no full view of all that is in the central bank, while the central bank knows the information consumption habits of the user. And for individualized users to communicate with each other they have to pass through the central banking facility and hence expose themselves to surveillance. The central banking and processing facility increasingly enjoys a totalizing integration of the practices of discourse followed by the users. Also, in order to use these facilities, the user must follow the rules or procedures of discourse dictated by the program. The system is doubly panoptic. 1) It actually surveys one's communication habits. 2) It dictates rules of discourse to be used and eventually internalized by the person at the other end of the terminal. Thus, for example, buying a software package is tantamount to buying into a prescribed set of discursive procedures. The deployment of the Telidon system by the Vancouver police (1979) is further evidence that new communications technology is being practised as a discourse of surveillance.⁷

Lowi goes a step further to argue that surveillance is indeed built into the software of the technology, in order to survey not only the outside world, but also (the ultimate form of panopticism) for self-surveillance or internal housekeeping:

Surveillance pre-determined by Software Information must be kept up to date and credible, and credibility and currency require continual surveillance, occasional house-cleaning, and regular viability checks.⁸

In *Computer Power and Human Reason*, Joseph Weizenbaum also insists that surveillance procedures are designed into computer technology, which is then necessarily practised as such.⁹

For Foucault, the ideology or values of a discursive practice are not outside the practice in a context: rather they are inherently built in as procedures that condition practices of the technology. For example, the inequitable exercise of power is not outside of technology, it is practised as the procedures of panopticism and exclusivity by the very discourse of technology. Power exists only as a set of interdiscursive relationships of "right". If we wish to question the ends of domination on the part of technology then we must question the very discursive procedures of technology as manifest in classical times.

EMANCIPATORY TECHNOLOGY?

In that the procedures of new communications technology seem to be redundant with those of classical science, the science that ushered in the industrial age, I agree with Leiss, though on different grounds, that *there is no communications revolution*. Were such a revolution to be said to exist, it would have to be shown that the discursive procedures had radically changed since the classical age. Were technology no longer to be domination-oriented it would have to exhibit means/procedures which were not those of what Foucault, under the sign of Nietzsche, calls the will to knowledge. The relationship of the practices of technology to context might be portrayed in the following way: *techne* and *episteme* refer not to any abstraction but to sets of discursive habits or procedures which condition future practices by virtue of having become "habit-forming". *Techne* and *episteme* mutually condition each other; changes in procedures of one both rely upon and condition changes in the other. Both sets of procedures are interested, in the sense of having power relations built into them. For example, the discourse on madness is a scientific or technical discourse which, in the seventeenth-century, indeed up until Freud, deprived the patient of the enunciative right to dialogue with the doctor. The doctor had the right to confine the patient. And, of course, this set of interdiscursive relations was reinforced by other interdiscursive relations such as those of the penal system and the State, as Foucault shows in his analysis of the internment of Sade.¹⁰ If new communications technology is to change, then its practices and procedures must change. For this to happen the rules considered as those to follow when speaking the truth, i.e., those of the *episteme*, must change. For example, one could not install practices of participatory communications unless the *episteme* were to condone procedures of interaction as procedures of making true statements.

Alternatives to Domination

Demystification and critique have often been put forward as the only alternative to technocracy. In an interview with Leiss (May 1983), he suggested that at times he felt demystification to be the primary if not only enterprise of his own work on technology.

Demystification is an important first step in the search for an alternative, but it is not that alternative itself. As the critique of Adorno by university students in Italy and Germany would attest, theory (of technology) cannot be satisfied with remaining at the level of negative critique and demystification. Leiss himself, we may recall, was seen to criticize the Frankfurt School's approach to technology in that it never managed to provide a glimmer of an alternative to what was criticized as reification and commodity fetishism.

Leiss does, however, point to an alternative to the crisis of technocratic society: not an alternative technology, but an alternative society, one in which instrumental rationality would yield some space to forms of knowledge which discuss not only means but especially ends or social goals. Leiss's critique of the *Science Council of Canada's* approach to policy-formation is primarily directed against its neglect of social goals at the expense of a fetishism of means. The *Science Council of Canada* legitimates its policy suggestions purely instrumentally, i.e., as self-legitimizing means. Policy is shown by Leiss to be defined tautologically by them as nothing more than the *means* of policy-making. The vacuity of reducing all rationality to a discussion of means could not be better demonstrated than by this tautology. An alternative society for Leiss, then, would allow an additional rationality whereby goals or a value-basis for technology could be discussed.

The main point I wish to make is that the efficacy of techniques can only be judged concretely in relation to explicit goals and the processes that seem appropriate for them.¹¹

For example, Leiss suggests that rather than passively surrendering to the "imperative" of the new communications technology, as most government policy-making agencies are presently doing, we should concentrate on a set of "zero-sum" issues such as health care budgets, ecological concerns, and income distribution.

Whether capitalist, socialist, or a mixture of both, no society that remains committed to the basic course of modern development — including the organization of social relations according to formal principles (such as equality and individual freedom), industrial manufacture and scientific rationality — can expect relief from the cold abstractions of resource allocation, trade-offs and benefit-cost calculations.¹²

Once all social goals are decided upon by a rational discourse allocated to the discussion of ends, technology, still in the form of the domination of nature, could be emancipatory. For example, technology itself could serve the ends of ecological preservation.

In *The Domination of Nature* all I claimed for the progressive side of modern scientific rationality was that, by virtue of its potential capacity to discourage certain kinds of irrational human projections into nature (not all of them), it could become — in a different social context — a force (not the only one) for the self — mastery of human nature. Nothing more. Judged concretely in relation to

EMANCIPATORY TECHNOLOGY?

explicit technology.¹³

Such an approach, of course, fits in very closely with the project of critical theory as Frankfurt Schoolers such as Adorno envisioned it. The only way to an alternative, to utopia, was via a critique of utopia, via a negative dialectic.

This is, however, only a partial alternative. Finally, one must also ask: which goals? and what type of discussion of these goals? only by posing such questions can we also arrive at the question which avoids abstracting from technology as social practice: Which social practices of technology to meet these goals?

Recalling the schema presented earlier in this paper of the inextricably interactive conditioning of the procedures of knowledge in general (*episteme*) with knowledge of how to do or make (*techne*), it follows that what we require is a new set of procedures both of rationality and of instrumental rationality. In order to arrive at an alternative social order, we would require both an alternative discourse of technical knowledge and an alternative discourse of knowledge in general; all the more so where we have found *episteme* to have been usurped by *techne* in technocratic society. I agree with Leiss that we require alternative knowledge as a context for technology; but would add that we also require alternative technical knowledge. An alternative social order implies an alternative *techne* and an alternative *episteme*.

One of the first places to start in this quest for an alternative *episteme* is with an alternative discourse of history. Leiss suggests this when he unequivocally refuses the Marxist dialectic of the emancipatory subject arising out of the contradictions of the purgatory of bourgeois society.

Marxist theory asserts that the proletariat can break that spell as it gathers strength for the moment of revolutionary violence — i.e., while it is still under the rule of bourgeois class domination. Yet how is this theoretically and practically conceivable? To examine this questions closely is to understand how the critical theory of society could one day find itself entangled in the unresolved dilemmas of classical liberalism.¹⁴

Marxist theory seemed to get out of this paradox only by assuming in a rather unempirical vein, the *a priori* existence of such a consciousness:

Thus there was a propensity in Marxian theory to assume the existence of a class which is autonomous *a priori*, or, in other words, to assume that capitalist society *necessarily* produced a class whose essential interest was general emancipation.¹⁵

This dilemma is the same as the one facing any attempt to maintain a liberalist philosophy of the emancipatory individual, which Marcuse, Horkheimer and Adorno all struggled to redeem as a ground for social theory.

The program of enlightenment is premised upon the central feature of classical liberalism – namely, the struggle against those pressures originating in social institutions that subvert the possibilities for the self-creation of autonomous rationality in individuals. For Marcuse as well as for Horkheimer, the desperate struggle to rejuvenate the ailing spirit of classical liberalism is an unavoidable necessity for radical theory and action.¹⁶

The Frankfurt School simply could not renounce the doctrine of individual rights contained in liberalist thought. Leiss fittingly uncovers the paradoxes of the liberalist confidence in the emancipatory qualities of the “autonomous” individual consciousness. In a self-reflective attempt to evade the paradox of positing an autonomous subject arising out of a constraining situation, Leiss rejects the anthropocentrism that places the subject at the source of all historical change. Instead he looks for some other motor force of historical change than the individual or collective emancipatory consciousness that was supposed to arise out of the very chains that imprisoned it. As early as his first book, Leiss deanthropomorphizes the dialectic of history. Indeed it would seem to be no coincidence that both Leiss and Foucault arrive at such a stance of deanthropocentralization via the path of a critical examination of the tenets of the discourse of classical science and liberalism.

“Man” as such is an abstraction which when employed in this manner only conceals the fact that in actual violent struggles among men technological instruments have a part to play. The universality that is implied in the concept of man — the idea of the human race as a whole, united within the framework of a peaceful social order and finally determining its existence under the conditions of freedom — remains unrealized.¹⁷

Like Foucault, Leiss can see no ground, be it historical or epistemological, for continuing to postulate the historical subject’s consciousness as the emancipatory force of history. Indeed, both suggest that perhaps the very opposite is the case. For Leiss, subject-driven emancipation simply did not occur. There is no reason to suppose it will in the future. Rather, says Leiss, what is occurring is “the ever more thorough fragmentation of the networks of social relations among individuals and groups.”¹⁸

Still, if Leiss rejects emancipatory consciousness does this imply that he also negates emancipation and emancipated subjects? I think not. Whereas Foucault would state that emancipation is impossible, that all discourse will always be qualified by constraints, and only the type of constraints may change, Leiss does not give up hope. While Leiss, just as

EMANCIPATORY TECHNOLOGY?

Foucault¹⁹, seeks an alternative to the Hegelian telos, he is still searching for some other way of positing emancipation apart from the acceptance of an old social order (bourgeois society) as generating the very subject of its own transcendence.

Where then does Leiss look for such an alternative theory of emancipation? At first I suspected that Leiss' work on commodities, consumerism and advertising might be his attempt at an alternative scenario for how emancipation might arise. This just indicates that Leiss's book, *The Limits to Satisfaction*, on the consumer society, as well as his current research with Stephen Kline and Sut Jhally on advertising, are entirely gratuitous to the long-standing project that Leiss' work seems to have set itself, that of finding a future alternative to some of the tenets of critical theory²⁰. Certainly Leiss's condemnation of the puritanical disapproval of consumerism by the Frankfurt School and their proselytes on the grounds of reification theory reveals that he does not think consumerism to be all that bad²¹. In his essay, "Nature as Commodity," he suggests that consumerism might be the site of some of the discussion of "goals/values" that he earlier stated must win back territory from the exclusivity of rationality's discussion of means only. In this same text, he states that what is required is not to do away with consumerism as an alternative but do develop a "value-basis for the degraded quality of many of the revealed preferences that emerge in this process."²²

Equally, in "Critical Theory and Its Future," he optimistically sees in consumerism a concrete dimension of inter-subjectivity which is not "all repressive."

The expanding realm of commodity production creates both conditions simultaneously (increasing interdependence and increasing isolation). The traditional ties mentioned above represented a concrete dimension of intersubjectivity — which had as well many repressive features, of course — wherein individual work and needs were articulated with reference to "regions" of consciousness that maintained a degree of relative autonomy vis-à-vis the economy. In consumption, for example, older values are subtly employed to allay guilt which might otherwise arise from spontaneous and reckless indulgence.²³

Nevertheless, although Leiss himself may have at one point looked for some form of alternative to the Frankfurt School theory of instrumental rationality in his studies of commodities, he certainly became increasingly skeptical about any such possibility.

This returns us then to the task of finding some alternative to the paradoxes of liberalist theory. Where we do not renounce the humanist emancipatory ideal, but rather simply cannot see how it can come about in a system of non-autonomous constraint, the problem is still one of overcoming this paradox, and not of finding another ideal. This search for an exit from the paradox is more recently the task which the French

theorists of autonomy and ‘autogestion’ have set for themselves.²⁴ How could an autonomous being/order be founded without grounding it in something which transcends it, hence making it no longer autonomous?

Leiss argues that such an autonomous order may indeed come into existence in a way not driven by some transcendental order or subject, such as the theoretical subject. Leiss is suggesting nothing short of an alternative genealogy of emancipation when he states: ‘it is beyond the power of theory to chart a sure course toward liberation.’²⁵ Nor does Leiss make such a statement only once in passing. He suggests that the philosophical subject may not be the motor force of alternative social praxis:

The issue is not one that is likely to be resolved by philosophical analysis alone. There is at least the possibility that the radical perspective articulated in these recent contributions may influence the course of personal and institutional development – and thus the course of social change in general – during the coming years. Philosophical reflection on the question of humanity’s relationship to the rest of nature must continually demand clarification of both the process and the goals.²⁶

These remarks resemble those of Peirce, Foucault and the work of the *CREA*. Moving away from a subject-driven view of history, we find the postulation of transformations of society (discourse and knowledge/power relationships) occurring regardless of a theoretical consciousness. There may be no philosophical ground to an alternative to domination apart from an appeal to some form of chance. Theory may not be the spearhead of alternative praxis. Alternative praxis may first simply arise – ‘*surgir*’ – as a transformation. Perhaps all that theory can do is attempt to identify it. Foucault answers precisely this to his Marxist critics, who attack him for not positing the historical subject. For Peirce, various social habits change due to two forces: Synechism – the tendency of all things to interact (with connotations of love – Agapism – involved here) and Tychism – the tendency of things to emerge through chance.²⁷

However, as Foucault would insist, such an alternative genealogy is not fatalistic, but a way of seeking out the regularities by which transformations occur, of identifying such transformations and of exposing them in such a way as to reinforce them. Without resorting to a naive theory of the voluntarist subject, the intellectual must also recognize chance as a locus of change.

To transpose these reflections to the domain of technology and society, the task of the theoretician of technology would be to identify alternative practices of knowledge and discourse of knowledge which would not necessarily be domination – and hegemonically-oriented, and to insist

EMANCIPATORY TECHNOLOGY?

upon these transformations as ones which might be reinforced as the basis of an alternative dominant episteme. For example, were participational practices of new communications technology or community resistance to practices of social control to be perceived as emerging, then the theoretician might both explain and advocate such practices, rather than pretending to have invented them. Indeed, in the case of certain resistances to new communications technology, at least one form did occur stochastically. In several experiments with electronic polling, (yet another practice of social control), it often turned out that children were simply playing with the key boards, pushing keys at random. This yielded stochastic results which disturbed the practice of social control intended by the operations of polling. In the vein of science fiction writer, P.K. Dick, one might first perceive such a stochastic response to technology in society and then encourage it. Citizens could be encouraged to dephase practices of social control by feeding completely aleatory information into the information gathering, compiling and cross-referencing technological systems. Its effect would be emancipatory in the area of marketing control, one of the social practices where computer-communications technology is currently most employed. Such a response is not fully random but rather a well-calculated one that has a bit of random content which it capitalizes on. Chance is a concept useful for breaking the back of determinists because they deny the idea of a radical invention – intervention; yet except for Peirce's cosmology, *tyche* can also bring forth monsters. To say that philosophers and theorists alone cannot magically bring about social change is not necessarily to say that we weight all in favour of chance at the exclusion of conscious volition, choice, and desire. Perhaps, changes appear through chance but are identified and fought for by volitional subjects.

Such an appeal to the stochastic emergence of change would debunk the technological fix theory of society as well as the belief that we can bring about a new order of social discourse simply by consciously thinking it. The potential for such a scepticism would be vast indeed for those who advocate a degree of social (and now epistemological) modesty as regards ecological concerns.

To adopt such an alternative theory of history is simultaneously to recognize an alternative episteme, one which would reject the domination of *techne*. Science would no longer be posited and practiced as that which dominates other theories and as that with which discourse invents or commands alternative social orders. Theory/science would merely integrate itself into or choose from what occurs or arises through chance. Finally, to accept such an alternative episteme would be tantamount to recognizing the end of instrumental reason as the dominant episteme. The epistemology of an alternative discourse on new technology and

society is simultaneously an alternative science, an alternative technology. Both sides of such a change are implicit in the following quotation from Leiss.

Now is the time to begin making the necessary discrimination. Now is the time to begin detaching our scientific culture from the popular expectations associated with the conquest of nature and the technological fix, to divorce the actual endeavors of science from the misguided belief (...) that humanity can and should strive to achieve "domination" over nature.²⁸

This quotation becomes meaningful when we see it as applicable to social practices of technology as well as social practices of theoretical and epistemological discourse about technology. However, such a shift, whether at the level of the practice of technology or at the level of the practice of an epistemological discourse on technology, also means the renunciation of a driving force in the form of a subject of emancipation. Such a transformation would simply have to occur — *surgir* — and then be identified or chosen by the theorist. This would make change a mixture of rational and random, of order and disorder. The reason for my appeal to the simple recognition of a transformation rather than to some thaumaturgical subject to bring it about goes back a long way in the history of thought about changing epistemological frameworks. It was Kant and later Wittgenstein who impressed upon us the difficulties of thinking another logical space from within the old one. They showed us how we could criticize a logical space from within that space but not posit a transcendent one therefrom. Leiss himself makes much the same point when he states that transcendence "could only be embodied in and effectuated by an individual or group that stood outside the contentious process of social reproduction."²⁹ Needless to say, I would also like to believe that we do perceive some transformations in practices of both epistemological and technological discourses which might point to the existence of such a change. However, it is far from having become a dominant episteme in the same sense as instrumental reasoning may be characterized as a dominant discourse of knowledge in today's society.

Conclusions

Treating technology and society not as abstractions or essences, but as nothing more than specific but regularizable social practices, does seem to explain better how certain technological practices may be ideological in the sense of contributing toward an increase in social control. It also avoids many of the "naturalized" myths or clichés common in today's talk about technology by showing them to be historically relative to a discursive order rather than universally necessary and inevitable. Also,

EMANCIPATORY TECHNOLOGY?

where technology is but a social practice (as opposed to some universal essence) this leaves open the possibility of questioning the social role or function of that practice as well as for the possibility – *potentia/dunamis* – of a transformation of such practices of a very different social nature.

I have seen that Leiss himself came very close to showing up all of the myths of discourse on technology and of practices of technology itself. Had he gone a step further than Husserl, toward some of the insights about technology made by contemporary French discursive analysis then the last remnant of idealized abstraction would have disappeared along with Leiss' most welcome abolishment of abstraction from society.

Treating technology as a social practice made it possible to posit alternative technological practices regardless of any essence of technology. I suggested that the procedures of the socio-epistemological context in general —the episteme — would have to be turned away from their subservience and reduction to instrumental reason. I also suggest that the procedures of technological practice themselves might move away from a manipulative and subject-driven set of procedures and toward ones which would acknowledge "tyche". This suggestion implies the possibility of a change in both episteme and techne, something which is unthinkable if either is essentialized. I also suggested that Leiss himself seemed to be hinting at such a change when he agrees with the deauthorization of the subject as motor force of history and when he insisted that change in history, i.e., alternative social orders, may not be borne out of the head of theoretical consciousness. Science and theory have been reduced to a non-dominant position whereby they cannot "engineer" nature or history or social organization. They can only perceive and attempt to reinforce certain transformations of the instrumentalist-oriented discourse of knowledge. Such a change in epistemology would also be a change for the discourse of technology itself – one not domination-oriented. The mere conception of transformation in terms of epistemological and technological modesty, however, is still insufficient. Beyond the appeal to transformation through chance and to modesty, what else replaces the unilateral manipulation of nature and human nature, as manifest in most practices of technology to date?

It is Jürgen Habermas who reminds us that for Marx, in *The German Ideology*, two kinds of human activity were described, work and interaction. Work, of course, is but instrumental rationality, manipulation of the environment in man's own self-interest. On the other hand, Habermas accuses many Marxists of having ignored the interactional dimension of human activity, whence the discursive turn in political theory. If social practices are not to be dominated by instrumental rationality, then the alternative would be interaction, as Habermas argues in *Toward a Rational Society*, *Crises of Legitimation*, and *Knowledge*

*and Human Interests.*³⁰

While Habermas does not renounce the humanist subject as a motor force of emancipation, he does suggest that an alternative, emancipatory order would not be subject-dominated nature or science, but rather one where an alternative form of communication would be based on the knowledge interest of interaction as opposed to domination. Furthermore, Habermas does specify in rather concrete terms what such an alternative would be. He is not guilty of the vagueness and lack of description of an alternative for which Leiss accuses the Frankfurt School. Rather, Habermas has recourse to some of the work of the American pragmatists, namely Peirce and Dewey, for some suggestions as to what an alternative to instrumentality might be. He defines this alternative in communicational terms. It would be non-distorted communication — the “ideal speech situation.” This is posed as a utopian ideal which is referred to only counter-factually, i.e., as a standard which has no ontological status but which is posited as something toward which to strive and on the basis of which to measure distortion. Such a standard is what Habermas describes as a “quasi-universal”. Leiss himself, especially early in his career, does not totally reject the alternative of interaction. In *The Domination of Nature*, Leiss insinuates that what society requires as a response to instrumentalism is a set of decision-making institutions where interactional discourse takes place and legitimates decision-making:

But whether it is known by this or any other name, the effort to frame institutions capable of subjecting the global social dynamic to the collective control of free individuals now represents an insurmountable necessity for the human race as a whole.³¹

Also, in 1970, Leiss was following Benjamin's line for an alternative technology which would be the mastery of the relationship between nature and humanity.³² In 1974, Leiss again insists on interaction as the ground for social-discussion of goals and the legitimation of decision-making:

Finally we should strive to understand how a genuinely autonomous consciousness in individuals may be substantively grounded in forms of social interaction and collective decision-making that are appropriate to advanced industrial societies. In this manner, the objectives of classical liberalism, which have been thwarted by the society which produced them, but which possess enduring value, may be preserved in a new synthesis.³³

Such a scenario of interaction would be the only way to answer affirmatively the question posed concerning new communications technology as a democratizing or constraining social practice, that Leiss poses here below, as late as 1979:

Will citizens be in a position to evaluate the construction of such exercises — the rules for coding information, the programming models, the selection of variables, the possible hidden

EMANCIPATORY TECHNOLOGY?

externalities?³⁴

In this same text he seems to recommend collective, interactional decision-making as a way of being emancipated from technocratic constraints. He holds out hope for such institutions as public inquiries as a form of interactive, consensus-oriented participatory, decision-making. The procedures of discourse operative in such an institution would be interactionist as opposed to unilateral and control-oriented.

However, the question remains: would such an interactional practice of the discourse of knowledge and power be qualitatively different from what we have defined technology to be throughout this study? For Leiss, technology is always self-interest control; that is the essence of technology for him. However, its function may be emancipatory, depending on the socio-politico-economic context. Thus, interaction, for Leiss, is still such domination-oriented scientific knowledge in that he sees it to serve the self-interest of man:

Is not the reorientation of human thought and action suggested therein essentially a recognition of enlightened human self-interest? And if so, does it really signify a qualitative change in the relationship of man and nature?³⁵

There is a slippage here, however. Simply serving man's interest is not tantamount to instrumental reason which had as its primary tenet domination and as its corollary the service of man's interests. Furthermore, if we do not essentialize any one definition of technology, then alternative practices of technology are possible. Interactional technology as a social practice would also be possible. One would first have to cease the search for a rational ground and begin to conceive of interactional discursive procedures as workable practices. It would seem that this is what people have in mind when they talk about alternative technologies for participatory interaction rather than for social control. However, this would imply entirely alternative technological practices and designs. Interactional technological practices are possible, just as are interactional epistemic procedures.

The most important problem with interactional normative standards for technology is once again of an ontologico-epistemological nature. For example, what would be the ground for the Ideal Speech Situation above and beyond a return to Kantianism or some rather feeble examples from historical anthropology? How would the postulation of the "quasi-transcendental" status of the Ideal Speech Situation avoid falling back into positing Kantian essences? Habermas has tried to ground the ideal speech situation or the rationality of unconstrained interaction in historical anthropology, in Piagetian empirical analyses of child develop-

ment, and in a reconstruction of historical materialism.³⁶ None of these attempts avoids the need to posit the emancipatory interest as a sort of categorical imperative, as a standard by which all communications or technological phenomena would be evaluated as rational or irrational. The task, then, is that of finding a ground for an interactional definition of reason to replace an instrumentalist one.

Finally, there may just be such an epistemological ground for an interactional episteme and *techne* in several transformations of scientific discourse that may be perceived to date, for example, Heisenberg's quantum mechanics experiments and his interpretations of them. Heisenberg suggests that scientific truth is the interactional co-production of three entities: 1) the object, 2) the trace produced by the interaction of the object and the experimental apparatus, and 3) the cognitive filters of the scientist.³⁷ This is consistent with Peirce's triadic semiotic epistemology where knowledge is nothing more than a triadic production of three terms in interaction: Interpretant, Representamen, and Object. For Peirce, triadic interaction is constitutive of reality and associated with "agapism," hence closely related to the tendency of all things to interact harmoniously.

In the end, the problem of a ground can also be turned against both Peirce and Habermas in whose works I have tried to find alternative solutions to the consideration of technology. Indeed, Habermas has been criticized for basing his theories of communication and their ethics on a universal or "quasi-universal" of emancipatory interaction as the condition of possibility for actual change in discourse and in the social. The problem of the ground, for a critique of technology then, returns to haunt us even at the level of communicational praxis. One may be criticized for putting forth no alternative to constraint and for avoiding doing so for want of a ground for such an alternative. This does not mean though that we can dismiss the problem of grounding an alternative social and discursive order. Some have said that we should leave off looking for a ground and simply *fight* for emancipatory and interactive interests that we deem valid. But the problem remains: how do we legitimate any choice of practicable interests to ourselves and to others without a ground or without a reign of terror?

Communications
McGill University

Notes

1. Michel Foucault, *Surveiller et Punir* (Paris: Gallimard, 1975); and *Histoire de la folie* (Paris: Union Générale d'Éditions, 1961).
2. "Parade of Business Machines," *Business Week*, (October, 1935).

EMANCIPATORY TECHNOLOGY?

3. "Information", *Business Week*, (July 30, 1955).
4. *Life*, Vol. 31, no. 2, (1951).
5. *Popular Mechanics*, (April 1927), p. 604.
6. Francis Fox, "Annual Report", (Ottawa: Department of Communications/ Government of Canada, 1979 - 80), p. 14.
7. Theodor Lowi, "The Political Impact of Information Technology," in ed. T. Forrester, *The Microelectronics Revolution* (Cambridge, Mass.: M.I.T. Press, 1981), pp. 453 - 472.
8. Joseph Weizenbaum, *Computer Power and Human Reason: From Judgment to Calculation* (San Francisco: W.H. Freeman and Co., 1976), pp. 271 - 2.
9. Foucault, *L'Histoire de la folie* (cf. sections on Sade).
10. "Technology and Instrumental Rationality," p. 136.
11. "Nature as a Commodity," ms., p. 23.
12. "Ideology and Science," p. 198.
13. Leiss, "Critical Theory and Its Future," *Political Theory*, Vol. II, no. 3 (August 1974), pp. 338 & 346.
14. "Critical Theory and Its Future," p. 342.
15. *Ibid.*, p. 336.
16. *Domination*, p. 122.
17. "Critical Theory," p. 343.
18. Michel Foucault, *L'Ordre du discours* (Paris: Gallimard. 1971).
19. Leiss (in collaboration with Stephen Kline), "Les icônes du marché," *Communication/Information*, special thematic issue on theory, ed. Finlay-Pelinski, "Il était une fois la théorie," Vol. V, no. 2/3 (hiver/été 1983), pp. 133 - 156.
20. "Les icônes du marché," pp. 133 - 134.
21. "Nature as a Commodity," ms., p. 23.
22. "Critical Theory," p. 344.
23. Cf. publications by members of the Centre de Recherche sur l'Épistémologie et l'Autonomie (CREA) at the Polytechnique in Paris: Dupuy Scubla, and Aglieta. All of these thinkers are trying to come to grips with the paradox of autonomy and transcendence in their various disciplines.
24. "Critical Theory", p. 346.
25. Leiss, "The Problem of Man and Nature in the Work of the Frankfurt School," *Philosophy of the Social Sciences*, Vol. II, no. 3 (1975), p. 171.
26. I discuss the possibility of an epistemology based on interaction in "Semiotics or History," op. cit.
27. Leiss, "Domination of Nature and Respect for Nature," in ed. Vittorio Mathieu and Paolo Rossi, *Scientific Culture in the Contemporary World* (Milan: Scientia, 1979), p. 390.

MARIKE FINLAY

28. "Critical Theory," p. 340.
29. Jürgen Habermas, *Toward a Rational Society*, trans. J. Shapiro (Boston: Beacon Press, 1970); *Legitimation Crisis*, trans. Th. McCarthy (Boston: Beacon Press, 1975); *Knowledge and Human Interests*, trans. J. Shapiro (Boston: Beacon Press, 1971).
30. *Domination*, p. 160.
31. "Utopia and Technology," p. 588.
32. "Critical Theory," p. 346.
33. "The Social Function of Knowledge," p. 190.
34. Leiss, "The Problem of Man and Nature," p. 171.
35. Thomas McCarthy, *The Critical Theory of Jürgen Habermas* (Cambridge, Mass.: M.I.T. Press, 1981).
36. I discuss at length the possibility of a new "epistem" one based on procedures of interaction and a triadic constitution of the ontological status of the object of knowledge, in Finlay-Pelinski, "The Potential of Irony: From a Semiotics of Irony Toward an Epistemology of Communicational Praxis. A Study of Schlegel and Musil," Ph.D. Diss., Université de Montréal, 1981. This episeme might be called one of "interactive pragmatic dialogism" which attempts to avoid the pitfalls of empiricism while not abstractions from the traces of concrete social practices.