COMMUNICATION TECHNOLOGIES AND HUMAN SUBJECTIVITY:

THE POLITICS OF POSTMODERN INFORMATION SCIENCE[1]

by

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Making the World Safe for Taco Bell

On 11 April 1993, the *New York Times* enthusiastically announced Pepsico's plans, laudably undeterred by the rather quaint cultural scruples which might prevent Dunkin' Donuts from selling baguettes to Parisians or Benihana from opening hot-dog stands in the United States, to sell tacos to Mexicans:

> Pepsico, which owns the Taco bell chain, saw the fattening wallets of Mexico's younger generation, splashed some extra hot sauce onto its tacos and headed across the border.
> Call it Pepsi's Latin invasion. And it's not just tacos, and not just Mexico. Last month the company announced a $750 million, five-year assault in Mexico, including plans to buy interests in big bottlers, buy distribution routes and advertise heavily. The company is opening Pizza Hut, Taco bell and KFC franchises throughout Latin America, and selling Fritos, Ruffles and Dorito chips as far south as Tierra del Fuego. And it will soon announce that later this year it will spend tens of millions of dollars to sponsor Michael Jackson on an eight-city tour of Latin America. (Nash 1993)

Extolling the recent "fountain of stability south of the border", the article's nomination of benefactors eager to reward open markets, regulation reductions, and the surrender of regional, national, and local economic control calls the roll of familiar concentrations of multinational capital: Wal-Mart, Kmart, Sears, J.C. Penny, Price Club, Pepsico, Digital Equipment, NEC, NBC, Fox, Hilton, Hyatt, Royal Dutch Shell, Exxon, British Petroleum, Anheuser-Busch, Mitsubishi.

The many lessons this story teaches about the global triumph of American junk food apply also to the attendant triumphs of information and communication technologies, not only on the strength of analogies holding between large businesses generally, but also because highly concentrated multinational capital depends vitally, even to sell Doritos, upon advanced information infrastructures, as the most cursory reflection on the question of who suffers from the following "acute shortages" cited in the *New York Times* article shows:

> Throughout Latin America there is an acute shortage of banking services, computerization, telecommunications, shopping centres, supermarkets, hotels, insurance and a host of other services. Thus, many of the corporate players are in consumer products, technology and services. (p. 6)

When Taco Bell's processed foods replace the more nutritious staples of the Mexican diet such as corn and beans (the result, as Herbert Schiller points out, of the penetration of 130 transnationals into Mexico, 99 of them U.S.-based at the time of writing), perhaps the most important shifts are those most directly felt, since the price of food rises as its nutritional value drops.[2] But more is at stake than economic and dietary shifts, because in selling processed food, Taco Bell also obsolesces, transfers, and creates power over knowledge and information. The knowledge residing in the hands, bodies, and oral recipes of many generations of household cooks is obsolesced, perhaps survived only as "information" in the "native" recipe compendiums gracing the kitchen shelves of the more mobile, modern, wealthy, and international citizens targeted by Pepsico's strategies of market penetration. The substitution of Fritos for homemade corn tortillas also means that culinary knowledge becomes industrialized, embedded in management procedures and electronically controlled machinery. Household production and local distribution of culinary expertise is replaced by centralized market intelligence as the "expert cook" becomes the manager of a food processing factory.

The transfer of expertise from the hands and bodies of workers to managerial intelligence supported by information systems is a story familiar at least since the 1911 publication of Taylor's *Principles of Scientific Management*. The importance of the Taco Bell story is, for me, somewhat different, and is located in the tale it tells about the identity politics embedded in global technologies generally. Its first lesson, and the main focus of this paper, concerns the explicit relationship between Pepsico's technologies and human subjectivity. Marketing junk food, as Pepsico knows all too well, is not simply an innocent presentation of new products in the hope that the corporation has gambled well on Fritos as just the thing to meet pre-existing but hitherto dormant "needs", lying just beneath the surface of satisfaction. If this were so, there would be no need for Michael Jackson. Fritos, Ruffles and Doritos are not just food; they come loaded with social meanings attesting to the attractions of first-world status, thus entirely congruent with such associated signifiers as blue jeans and Benetton's, Pepsi and Coke, Marlboros and Budweiser, MacDonald's and Kentucky Fried Chicken, MTV and, of course, American popular music idols and icons.[3] The subject who dances to Michael Jackson is, if Pepsico has anything to do with it, also the subject who in less energetic moments snacks on Fritos, but, and this is the point I wish to stress, is a socially *constructed* subject, one whose construction could not be contemplated apart from the apparatus of modern communication and information technologies and its supporting economic, institutional and military infrastructures.

What kind of subject is this, equally at home in Los Angeles, Mexico City, Calcutta or Berlin, who enjoys, over a Coors Light, a local country and western band with a Bakersville sound in an Irish pub in Copenhagen, a welcome stopover on the return trip from the conference presentation in San Diego before returning to the rigours of doctoral dissertation research in Lund's faculty of theology? Inundated as we are with definitions, appreciations, analyses and criticisms of the *postmodern*, the resources available to answer this question present us with an

embarrassment of riches.[4] Since Pepsico's market penetration of food depends upon a parallel market penetration of culture, the same hyper-acceleration of the processes of creation, obsolescence, re-creation, assembly, disassembly, and reassembly configure both Pepsico's product development and the networks of its supporting cultural elements. In trying to grasp the kind of subjects whose identities are constructed from these constantly shifting elements, Baudrillard's "terminals of multiple networks" (Baudrillard 1988, 16) provides a useful and by-now familiar image of a subject who replaces, in Frederic Jameson's analysis, the "autonomous bourgeois monad or ego or individual", or the "formerly centered subject or psyche" (Jameson 1991, 15), and whose characteristics are perhaps most dramatically presented in Donna Haraway's academic cult classic, "A Cyborg Manifesto", as "contradictory, partial, and strategic", constructed "out of otherness, difference, and specificity" (Haraway 1991, 155).

What we learn, then, from the Latin American adventures of Taco Bell and Michael Jackson are lessons having at least as much to tell about communication and information technologies as about junk food marketed to a disco beat in unlikely places. The themes of the abstraction and decontextualization favoured by technology's global reach; of fundamental shifts in power and control over knowledge and information; of the private, corporate, and commercial economic interests dependent upon specific technological arrangements; of the globalization of the unlocalized self, the self that can be everywhere and nowhere, plastic, constructed for specific corporate purposes, temporary, shifting, assembled, disassembled, and reassembled at will, in short: *postmodern* — these are themes I want to explore in order to ask, what are the relations between the ways in which communication and information technologies construct human subjects and the possibilities of a democratic and egalitarian intellectual activism in information science (IS)? The need is pressing, especially since absent from the *New York Times* article, as from most other admiring narratives of corporate *chutzpah* recorded on the business pages of the newspaper of record, are the fountains of blood spilt to achieve this "fountain of stability". That the world has been made safe for Taco Bell only by the well-documented ruthless applications of U.S. military force in the service of corporate interests is also the point of Jameson's analysis of the cultural logic of a globalized postmodernism dependent upon electronic communication and information technologies:

> . . . this whole global, yet American, postmodern culture is the internal and super-structural expression of a whole new wave of American military and economic domination throughout the world: in this sense, as throughout class history, the underside of culture is blood, torture, death, and terror (Jameson 1991, 5).

Technology's Identity Politics

Taking the connections between subjectivity and technologies seriously means that they cannot be conceived simply as hardware. The theoretical focus has to shift, I would argue, to the conception of technologies as embodiments of social relations[5]. In Langdon Winner's terms, this view "begins with the recognition that as technologies are being built and put to use, significant alterations in patterns of human activity and human institutions are already taking place" (Winner 1986, 11). Because technologies "contain possibilities for many different ways

of ordering human activity" (Winner 1986, 28), he argues that they have inherently social, indeed political, qualities.[6] Winner's conclusions about the thoroughly social and political character of technology are those I want to insist on here:

> What we see . . . is an ongoing social process in which scientific knowledge, technological invention, and corporate profit reinforce each other in deeply entrenched patterns, patterns that bear the unmistakable stamp of political and economic power. (Winner 1986, 27)

> The important task becomes, therefore, not that of studying the "effects" and "impacts" of technical change, but one of evaluating the material and social infrastructure specific technologies create for our life's activity. (Winner 1986, 55)

The kind of communication and information technologies at issue in this paper are computer networks whose social organization configures what Abbe Mowshowitz (1993) calls the "information marketplace", and which *Time* has recently and with great fervor brought to the attention of a mass audience:

> . . . imagine a medium that combines the switching and routing capabilities of phones with the video and information offerings of the most advanced cable systems and data banks. Instead of settling for whatever happens to be on at a particular time, you could select any item from an encyclopedic menu of offerings and have it routed directly to your television set or computer screen. A movie? Airline listings? Tomorrow's newspaper or yesterday's episode of *Northern Exposure*? How about a new magazine or book? A stroll through the L.L. Bean catalogue? A teleconference with your boss? A video phone call with your lover? Just punch up what you want, and it appears just when you want it. (Elmer-Dewitt 1993)[7]

The first point which I would like to suggest is crucial to identifying the kind of politics embedded in interactive consumer information technologies and their supporting infrastructures, and which has been noted by several commentators (see, for example, Wilson 1988, Mosco 1989, Poster 1990, Gandy 1993, Mowshowitz 1993, Poster 1993), is their role in the construction of human subjectivity. And it is at precisely this point that investigations of the social relations configured by the new communication and information technologies connect with the work, some cited above, on postmodern culture, posing what I think are the most pressing problems for the possibilities of a democratic politics of information.

We can begin to see how the "major changes in the structure of social relationships" (Mowshowitz 1993) induced by these technologies result in what Mark Poster, applying Foucauldian discourse analyses to databases, has called "the constitution of the subject" (Poster 1993), or what will be termed here a technological practice of *identity politics*, by appreciating the ways in which personal identity becomes a negotiable item due to its economic value in an information marketplace. Companies such as TRW Target Marketing Services or Claritas Corporation combine individual consumer records with such non-consumer data as birth certificate, driver's license, voter registration, school records, legal and employment information (see Gandy 1993) to develop, by sophisticated cluster analyses, marketable identity profiles. By way of illustration, it would be difficult to improve upon Poster's remarks on Claritas Corporation:

Its masterpiece is a database called "Prizm" that is an identity construction system. Prizm divides up the entire population into "clusters" which can be as finely grained as six households. Each cluster is then fit into forty types such as "rank and file", "black enterprise", "single city blues", "furs and station wagons", and so forth. Each type is defined by income, per cent of the U.S. population, age, class, size of household, and "characteristics". In the case of the identity known as "bohemian mix", some 1.1% of the population, characteristics are for example "Buy: wine by the case, common stock; Drive: Alfa Romeos, Puegots; Read: *GQ, Harper's;* Eat: whole-wheat bread, frozen waffles; TV: *Nightline ...*" The company then provides a few sample zip codes where this species may be found (Poster 1993).

These identities are not only bought and sold in an *audience market*, a characteristic feature of the vastly increased power of late monopoly capital to define, regulate and rationalize consumer demand, as noted by those commentators who emphasize their use in direct mail advertising or telemarketing, but also provide a basis for the processes of differentiation, discrimination and classification required to manage the anticipated explosion of information products currently exciting the imaginations of the electronic information industries' stockholders. For the technologies whose convergence constitutes the "electronic superhighway" are primarily technologies of monitoring and control, as Kevin Wilson (1988) and Vincent Mosco (1989) have emphasized.[8] The feedback of consumer choice enabled by interactive household information technologies permits differential product development, organization, and presentation on the basis of programmed individual identity constructions. In other words, the "decision" discriminating among the information products available for consumption may originate in constructed identities existing, as Poster (1993) points out is a general feature of database-constructed identities, "outside the immediacy of consciousness". Furthermore, programmed identity construction can generate a rich field of identity research, in which hitherto unnoticed affinities between data records generate novel identity clusters on which further product development is based. As the capacity to integrate personal data into the common digital substrate of text, audio, and visual information is exercised through repeated iterations and feedback loops, it makes a mockery of personal "wants" or "needs", originating in individual consciousness, as the locus of consumer "choice". The construction of subjects as consumer data clusters approaches closure when the *product consumed* is itself a data cluster, as in the case of electronic information products delivered by what has been jokingly, but very likely quite presciently, referred to as the National Recreation and Entertainment Network (NREN).[9]

Automatic delivery of information products customized to individual profiles is, of course, hardly new to IS work in information retrieval (IR). The descendants of paper-based Selective Dissemination of Information (SDI) systems have for some time featured electronic processing of queries put to bibliographic databases, with provision for profile refinement through user feedback. Recent developments representing the object of analysis as the cognitive state, or mental picture, of the IR system user suggest connections between IR work and the information marketplace's "identity construction systems". The latter technologies are obviously political, not only because they are designed, built and deployed by multinational capital to rationalize consumption and to strengthen prevailing power inequities over the production, distribution, and organization of goods and services, but also because, as Poster points out, they

are also discursive formations whose power effects are "to position the subject in relation to structures of domination in such a way that those structures may *then* act upon him or her" (Poster 1993). But IR identity construction systems are no less political, and for precisely the same reasons: they are means whereby prevailing distributions of power over the production, organization, distribution and consumption of information products are maintained and strengthened (see Frohmann 1992c for a discussion). Indeed, I invite the reader to speculate whether the tightening grip of control afforded by the convergence of IR research into identity profile construction by the techniques of natural language analysis and corporate monopolies over a technology serving as a conduit not only for information products but also for human conversation, belong in the paranoid fictions of Philip K. Dick or in sober analyses of the world we now inhabit.

The second point which is, I suggest, crucial to understanding the identity politics of the new communication and information technologies is the *postmodern* character of the subjects constructed by them. The "subject" addressed by these technologies is not the familiar *modern* subject, centered, coherent, stable, rational, self-directed, on whose actions, initiated in individual consciousness, society is based. Instead, it is the unstable, multiple, fragmented subject familiar to us from Taco Bell's Latin invasion, the creature of the technology's panoptic characteristics, as noted by several commentators (see especially Gandy 1993, Poster 1993). Group membership is not based upon the familiar totalizing unities of reason, class, race, or gender, but instead upon an ever-changing set of *affinities* which produces, in Mowshowitz's terms, *virtual individuality*:

> Consumers in the network marketplace will be members of many different affinity groups, which will persist for varying periods of time. Moreover, the consumer may very well switch from one group to another. To the extent that personal identity is bound up with ever changing affinity groups, individuality becomes transformed into virtual individuality. At any given moment, a person's identity can be inferred from the intersection of the affinity groups to which he belongs at the same time (Mowshowitz 1993).

This comment echoes Baudrillard's "terminals of multiple networks" and similar understandings of postmodern identity which are commonplace today.

The relationships between postmodern subjectivity and post-Fordist economic configurations sufficiently novel to generate intense post-marxist debate about the meaning and significance of "new times" (see Hall, Jacques 1989) are still far from settled. But Stuart Hall's insistence "that shifts of this order in economic life must be taken seriously in any analysis of our present circumstances" (Hall 1989, 119) allows me to introduce the third point about political activism that I want to press in this paper. The problem he addresses might be approached by considering the incongruities between *modern* subjects and the control of consumption in this postmodern era, one marked by, to enumerate just some of Hall's inventory of post-Fordism's characteristics, a shift to information technologies and to "a more flexible and decentralized form of labour process and work organization", a "leading role for consumption, reflected in such things as greater emphasis on product differentiation, on marketing, packaging and design, on 'targeting' of consumers by lifestyle, taste and culture rather than by . . . social class", an "economy dominated by the multinationals", "the 'globalization' of the new financial markets",

and "greater social fragmentation and pluralism, the weakening of older collective solidarities and block identities and the emergence of new identities as well as the maximization of individual choices through personal consumption" (Hall 1989, 118-119). If the subject is constructed, as Poster (1993) explains, through the interpellations, or *types of address*, available in specific discursive formations, then Hall's problem might be posed as one about the relationships between the dominance of specific sets of possible, and indeed actual interpellations, and the dominance of specific sets of economic arrangements. After all, not all possible interpellations constitute real, material options for identity construction. Specific social practices must count as *appropriate responses* to specific types of address. For the subject to be constituted as fluid, contradictory, capable of assembly, disassembly, and reassembly, rather than as fixed, centered, and rational, then there would seem to be presupposed specific social practices which count as the responses *of a postmodern subject*. But social practices depend upon the reality of specific, material — and in the postmodern instance, arguably *post-Fordist* — sets of social, political, cultural and economic arrangements. As always, the political question is, how is control of such arrangements achieved and maintained? Since globalized patterns of consumer behaviour are the salient practices counting as responses to postmodern forms of address, the most obvious answer is that control is concentrated in the hands of multinational capital. The displacement of the modern by the postmodern subject raises questions, therefore, about its relationship to the displacement of an economic order in which capital benefits from "older collective solidarities and block identities", to use Hall's phrase, or the "autonomous bourgeois monad or ego or individual", to recall Jameson's terms, by the post-Fordist economic arrangements described by Hall and others in the *New Times* compendium (Hall, Jacques 1989). Whether the dominance of corresponding arrangements which positioned the *modern* subject as the discursive achievement of a bygone articulatory practice represents a regime granting more or less individual freedom, more or less power over the discursive resources required to initiate possibilities of address as well as control over the field of related practices in which identity is exercised, may be a matter of some debate, but it seems clear that the *modern* subject is at least *incompatible* with post-Fordist economic arrangements.

The issues raised for political action by the debate on the relations between identity construction and real, material, social and economic conditions are those to which I now want to turn in considering the possibilities of intellectual activism in information science.

The Politics of Postmodern Information Science

If, as Andrew Ross claims, "a code of intellectual activism which is not grounded in the vernacular of information technology and the discourses and images of popular, commercial culture will have as much leverage over the new nomination of modern social movements as the spells of medieval witches or consultations of the *I Ching*" (Ross 1989, 212-213), then the question of what intellectual activism in information science would look like cannot avoid confronting postmodernist debates about the relationship between the new communication and information technologies and human subjectivity. I would like at this point to simplify this debate even further than I've already done, to draw out two polarized positions which I hope will prove useful for situating political work in IS.

At one extreme lies the view that postmodernism is a social, cultural, economic, or, in its own terms, discursive *achievement*, that is, it has arrived, it is *here*, and *we are it*. It must in this case be understood as "a new kind of absolute rupture with the past, the beginning of a new global epoch altogether" (Hall 1986, 46). Political activism consists, therefore, in exploiting the possibilities of resistance within the networks constituting postmodern subjects, and must abandon assumptions about class, race, or gender as constituting intrinsically liberatory and revolutionary subjects. This position receives its theoretical elaboration in Laclau and Mouffe (1985), and informs the work of Ross (1989, 1991), Haraway (1991), and Poster (1993). Haraway, for example, rejects *any* "natural matrix of unity" or theory of identity as a basis for political action, opting instead for a politics based upon shifting affinities, a process which involves "dissolving Western selves in the interests of survival (157)."

At the other extreme lies the view that postmodernism is but the most recent ideological weapon of multinational and globalized capital, that it represents, to appropriate Jameson's well-known phrase, "the cultural logic of late capitalism". In this case, its hegemony must be seen as a project rather than an achievement. Resistance in the familiar form of class struggle is then a real possibility, on the grounds that contests waged in a cultural sphere whose various configurations are each quite compatible with the dominance of capital offer little hope for effective resistance.

Since in the present intellectual climate each position presents a live option, I would like to suggest six ways in which intellectual political activism in IS can learn from both.

First, whether its politics be based upon the familiar identities of class, race, and gender, or the "virtual" identities of temporary affinity networks, a democratic and libertarian politics of information technologies, information users, and information practices must, I would argue, take into account the social construction of human subjectivity. If IS work accepts "found" identities as natural or prior to prevailing forms of social organization, it fatally compromises avenues of criticism and the development of alternatives. Whether the identities of information users be taken as natural by, as is most often the case, merely ignoring the problem of their construction, or by fetishizing empirical methodologies (whether qualitative or quantitative) designed to elicit the "real" characteristics of the "subjects" under scrutiny, work of this kind places the most important relations between information technologies and historically contingent structures of domination beyond criticism.

A second, and closely related point, is that IS work can enlarge the range of intellectual activism by drawing on both of the alternatives mentioned above. For example, given that the sets of social relations embedded in information technologies are configured by the interests of capital, IS research must continue to address questions of how the distribution of "information goods" is skewed by race, class, and gender. But at the same time, IS work on the "affinity politics" suggested by postmodernism can seek those connections between subjects positioned in contemporary discourses of information and its technologies which harbour possibilities of resistance to forces of closure and stasis.[10] As Haraway has pointed out in another context, these politics sometimes make for strange bedfellows. In the information science context, affinities based upon struggles to use information to gain some power and control over everyday life should not be expected only within the familiar territory of customary identities. For example, recent work on the liberatory possibilities of romance writing and porn videos suggest

unexpected affinities between pulp fiction readers, sex workers, feminists, and other activists working on the front of sexuality.[11] Other examples might be found by investigations of scientific information which are guided by a search for the instabilities in the discursive oppositions between popular vs. academic/professional, expert vs. amateur, or science vs. pseudoscience, rather than by assumptions that they represent states of nature. Work of this kind might reveal important affinities between subjects relegated to separate spheres by traditional IS work, while at the same time enlarging the terrain of uses of scientific literature beyond those configured by prevailing systems of domination over its production, organization, and distribution.

Third, intellectual activists in IS can learn to read their own literature as engaged in the project of manufacturing consent for the social relations embedded in new communication and information technologies. Once again, work can usefully proceed on both the front of discourse analysis, disclosing the novel forms of both dominance and resistance opened up by technological restructurings of human subjectivity, and on the front of ideology analysis, showing how IS theory constructs meanings of information technologies which support corporate dominance over information and its uses. These approaches would also show the limitations of an IS activism which continues to frame political debate by questions of democratizing *access* to information, but without disturbing existing regimes of production and distribution.[12]

Fourth, existing IS literature can also be read to reveal hidden and implicit activist potentialities and possibilities. A brief indication of just one example will have to suffice here. Charles McClure's "The information rich employee and information for decision making: review and comments" (McClure 1978) quite explicitly restricts the concept of "information richness" to "knowledge workers" in the interests of improving the productivity of the parent organization. While his paper may be criticized for its accommodation to capitalist organizational forms and their supporting political and economic environments, or its failure to acknowledge the strict conditions of corporate rationality under which the information behaviour of an organizational "leader" or "star" could count as "an effective cognitive process to identify . . . information of greater 'value'" (p. 381; no employee of Union Carbide, for example, who identified sufficient dangers to the citizens of Bhopal to shut down the plant would have been credited with employing "an effective cognitive process"), or its rhetoric of developing "the full potential of the workers" while at the same time promoting Taylorization of "knowledge work", it nonetheless presents interesting possibilities when its main concepts are transposed to other contexts. For example, IS work directed to identifying and developing systems centered on the "information richness" of persons denied the benefits of prevailing regimes of power over information might offer a real alternative to current preoccupations with the organization of and access to "information" whose production is in the firm grip of corporate hands.

Fifth, and following rather directly from these four points, I would like to suggest that IS work be enormously suspicious of "needs and uses" studies. The first reason is perhaps already apparent; either the identities of the "subjects" populating IS literature (children, young adults, women, scientists, engineers, CEOs, humanities scholars, graduate students, undergraduates, social scientists, and many more) are simply not theorized at all, or it is at best assumed that prevailing disciplinary, professional, and educational categories form "natural" subjects about

whose "information needs" something interesting and important might be revealed. "Information needs" are most often taken as givens; they are there, like natural objects, and the job of IS research is to discover them. Little attention is paid to the social or discursive construction of those "needs", nor to the ideological character of the "identities" studied. The consequence is a mountain of "needs and uses" studies which tell us no more about how subjects are differentially positioned in networks of control over information than market research tells us about capital's control of consumption. The political consequences of the deficiencies cited here have perhaps no better illustration than the privilege extended by the discourse of "information users" which allows the Senior Vice President of the American Express Company, who, while allowing that the company spent between $300 and $400 million annually to develop, operate and maintain information processing systems and communications networks to support its businesses, nonetheless was able to argue as a "user" against "discriminatory" trans-border data flow restrictions contemplated by pesky and increasingly irrelevant national governments with the audacity to resist American corporate domination of their information resources (see Freeman 1984).

Sixth, and in conclusion, I suggest that concepts of "information needs", "information users" and "information uses" have little value for activist IS work, and that they be displaced by the concept of *information power*. Information power, whether understood as domination of one group over another by virtue of inequities in control over information resources, or in the Foucauldian sense of discursive formations, is prior to any of these concepts because of its role in their *constitution*. Attention to the constitutive role of information power would allow IS to better theorize the construction of information users, information needs and information uses. It would allow IS theory to abandon its preoccupation, now well over one hundred years old, with the image of professional information work as the delivery of goods, without disturbing their monopolized and corporate system of production. Perhaps most importantly, it would allow IS theory to begin to address the information and knowledge possessed by subjects — whether "modern" or "postmodern" — who have no platforms to speak, none of the productive resources enjoyed by the "information rich", and no places of assembly where information can be exchanged to permit articulation and consciousness of real needs. "Information systems" is an expression that can be used to refer not just to the mobilization of technologies in the interests of prevailing inequities of power over information, but also to those connections between people directed to constructing alternative centres of information production, organization, and distribution.

ENDNOTES

[1] I would like to thank Frank Pearce and Tom Carmichael whose expertise and patience in conversation have helped me clarify some issues of this paper.

[2] Schiller reports, for example, that "between 1970 and 1975 . . . consumption of popcorn, potato chips, and other processed foods increased by almost 27 percent. Yet researchers point out that a package of corn chips costs twenty times more than a kilo of more nutritious corn tortillas (Schiller 1984, 55).

[3] In an article entitled "They Want Their MTV . . . even in the Mountains of India", the *Globe and Mail* of 18 May 1993 reports: "In the big cities like New Delhi and Bombay, youth fashion already has adopted the decidedly MTV look of ripped blue jeans and baggy silk shirts. And almost no one dares to start a party before 9:30 p.m., when the most popular soaps, *The Bold and the Beautiful* and *Santa Barbara*, finish playing back-to-back" (Stackhouse 1993, C3).

[4] For a recent inventory of postmodern subjects, see Gergen 1991.

[5] Arguments for this view cannot be given in this short space, but they are readily available elsewhere. See, for example, Bijker, Hughes, Pinch 1987, Noble 1977, Noble 1984, Nye 1990, Williams 1975, Winner 1977, Winner 1986.

[6] Two of Winner's examples of technologies which position people differentially with respect to power and privilege are the Long Island parkways designed by Robert Moses, and the pneumatic molding machines introduced in Cyrus McCormick's reaper manufacturing plant in Chicago in the 1880s. The first excluded buses, the only method of transit available to racial minorities and low-income groups, due to the parkways' low-hanging over-passes. The second had the effect, at the price of producing inferior castings at higher cost, of decapitating the Chicago union local of the National Union of Iron Molders by eliminating its organizers, the skilled workers (Winner 1986, 22-24).

[7] Invitations to liberate our imaginations when contemplating trips on the "electronic highway" are coupled, especially on the business papers of national newspapers, with exhortations to liberate the information industries from regulation and public oversight. Commenting on opposition to Bell Canada's proposal to raise local phone rates by as much as 40 per cent, Terence Corcoran, for example, worries in the *Globe and Mail* of 19 May 1993, that Canada might become a country bumpkin in the new electronic metropolis, destined merely to gawk at "a range of interactive services as yet undreamed of by mere mortals". "Canadians run the risk", he explains, "of being left behind by a rapidly moving technological revolution if . . . basic issues remain too long mired in antiquated CRTC proceedings and prolonged public reviews of every move of every industry player" (Corcoran 1993).

[8] The relation between new technologies and social control was the theme of a conference held at Queen's University, Kingston, Ontario, 14-16 May 1993. Several of the papers cited here were presented at that conference.

[9] My thanks to Rob Kling for this appropriate reading of the acronym.

[10] Putting the political project in these terms draws from Andrew Ross's notions of intellectual activism in the cultural realm; see, for example, "New Age — a Kinder, Gentler Science?" in his *Strange Weather* (1991).

[11] The liberatory possibilities of romance writing are noted by Carol Thurston: "Reading and writing these novels was, and continues to be, a way for women to rebel against their domestic imprisonment" (1987, 35). For a discussion of pornography, see Linda Williams (1989) and "The Popularity of Pornography" in Andrew Ross (1989).

[12] See Frohmann 1992a, 1992b, 1992c for attempts to read some IS literature in the ways suggested here.

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