In today’s universities, knowledge is increasingly becoming reduced to the manipulation of data and “attention management”. This article compares two concepts of knowledge in order to stress the importance of a second-order communication, “reflexiveness”, which has little to do with information as physical transmission of data.

Until recently the university was an unlikely setting for a battleground over the organization of work. There have been few cases since the nineteenth century in which the university has been directed to serve the interests of national economic development or technological progress. Business entrepreneurial activity was the exclusive agency for economic growth and, on the whole, the university lay at arms length from the agencies of national economic development. Hence it was not directly involved in organization of “work”.

All this has changed with the increasing use of information technology throughout society and the rapid expansion of knowledge in its commodity form. The French sociologist Alain Touraine predicted in the mid-1970s, that the movement toward an information driven ‘post-industrial’ economy would transform the role of universities—and he has been proven correct. A large gap has arisen between the traditional role of universities as that of reproducers of cultural heritage, and the emergence of a new role as “agency” for the “production” of knowledge in society. As the university becomes a technostructure, conflicts within it reflect divisions between cultural aims.
and "work" that is, research aimed at accumulation of national and corporate wealth (Touraine, 1977: 263ff.).

Colleagues at my own university have argued that there are already sufficient linkages between universities and private corporations to indicate the overall pattern of university integration into the processes of production in Canada (Newson & Buchbinder, 1988). As both government and industry take a hand in defining the kind of service which the university ought to provide, the university is rapidly losing control of its own agenda.

The President of the Ontario Confederation of University Faculty Associations has also argued in a similar vein. The universities' experience is that on the one hand they find themselves increasingly important as more and more people seek access to them but on the other hand they are becoming increasingly powerless because they are losing their public voice. He associates this with a change in public understanding of "knowledge" as knowledge becomes associated with the marketing of information:

The university is caught in a web of ambiguities.... This conflict is obscured by deceptive (perhaps self-deceptive) ambiguous words. "Knowledge," "accessibility," and "excellence" are such words. "Knowledge" suggests a desire to learn what is true about the world, including what is or may be good for human beings. It also may suggest freedom and the power of self-discovery. But in the institutional code imposed by the new economically driven pieties, it means (i.e. is reduced to) data, the production and manipulation of data, and powerlessness in relation to those who decide what data are to be produced and manipulated, and why. (Graham, 1989: 4–5).

My concern in this paper is to examine aspects of this loss of public voice and relate this loss to the organizational loss of reflectiveness and "second order communication". I explain these concepts in more detail below, here I wish only to support the view that commodification of knowledge by redefining academic work as "production" circularly affects the ability of universities and their members to communicate knowledge through a social process of self-discovery.

Currently the clash between the alternate purposes of a university—cultural and productive—is to be found in the month-to-month administration of the university where the intrusion of technology within the university brings its own justifications and rationalizations. For example faculties of business administration present a conception of "information" and "knowledge" which is strongly correlated with their understanding of the efficiencies of production. Information is "out there"; data has to be captured by networked input-output devices and rendered coherent through subtle use of software. By contrast, the social sciences and humanities retain a strong conception of knowledge as a qualitative form, organised through social processes of learning and communication. For the social sciences, learning is a process distinct from the concept of "brain as information processor" predominant in faculties of business administration.
The gap between the two visions of learning and knowledge increases with each implementation of technical systems within the university setting. Network information systems are the latest technical component of the “production of knowledge”. The design of network systems of information gathering and disseminating are far closer to natural processes of communication than information processed through ‘stand alone’ electronic computers. The installation of network communication systems seems to represent a synthesis between increased efficiencies in output of academic work as “work” and a technical facility for enhancing traditional patterns of learning as self-discovery.

Since Colin Cherry’s early study of communication, there has been a hope for a synthesis matching information theory with theories of social interaction. He argued that the synthesis of technical and social forms would broaden our whole understanding of communication and learning (Cherry, 1966: 15–30). I shall propose that this synthesis is based on false premises.

It is my contention that wherever network information systems are used to manipulate data in commoditized form they always reduce information and knowledge to a type of “attention management” (Simon, 1975: 293–296). The fundamental distinction between attention management and learning is the same as a fundamental distinction between knowledge as “production” and knowledge as “self-discovery”. The form of the distinction between production and self-discovery relies upon the presence or absence of reflexiveness. Reflexiveness is not, as often suggested, a process of communication confined to the inside of a person’s head. It is a socially constructed process of learning requiring a perceptible feedback relation of public voice and private sentiment. Reflexiveness is vital to all decision making and there is a strong relation between this reflexive learning and the continued existence of social organizations who, like the university in our society, are commonly said to “produce” knowledge.

**Ecosystemic Communication and Social Advocacy**

According to Simon, attention management is predicated on the strict equation of ‘knowledge’ with physical transmission of data and the evaluation of data by market criteria. By contrast all forms of reflexive learning and social communication require two other conditions in conjunction with physical transmission of messages. One condition is recognition of a *distinction* between physical signal and sign or idea. The other is a *contextual relation* between signal production and signal reception. This interdependency requires that an understanding of “subject” in relation to other “subjects” is included in the analysis.

Let us call physical transmission **TYPE A** conditions; the signification interdependency I will call **TYPE B** conditions; and the relational interdependency—condition of relationships arising between production and reception in communication or between author and audience, **TYPE C**. These are also the minimal terms required to discuss any communicative form and any “social effect” of a change in forms of
communication. Of course, since all three conditions are interdependencies, they include conjunctive feedbacks. The interdependencies of these three conditions are not considered in commodity forms of communication, and by definition tend to be replaced in network information systems or “knowledge networks” by market valuation.

In order to show the importance of reflexivity, I have been examining social movements and the process of public interest advocacy. Social movements are today increasing in importance in absolute numbers globally and in relative proportions within industrial states. Typically, social movements organize against encroachment of state power, the mobilization of its members occurring outside the boundaries of political parties. Social movements often champion the national and cultural aspirations of indigenous peoples but their social significance lies in the way they link local concerns with global issues.

In a forthcoming publication, I link the new social movements to public interest advocacy groups in Canada, those groups who usually act on a much smaller scale than social movements, but whose activities may overflow their local boundaries and link up with the global concerns of social movements (Harries-Jones, in press). I note the essentially middle-class composition of advocacy groups and social movements in the industrial West, and the difference between these and the social movements in the Third World. The middle-class composition accounts for the cultural concern for self-empowerment and the emphasis on changed cultural values and “life-style” which the respective movements advocate.

In the past the aims of a social movement were usually to liberate, overthrow, or radically alter existing structures of power. More recently the aims and composition of social movements have undergone a marked shift. The “new” social movements are seeking changes in the dominant system of cultural values rather than a sudden political transformation of political power. Their strategies are directed towards autonomy in the sphere of cultural values.¹

By concentrating on cultural reforms, social movements and public interest advocacy groups exploit the gap which has arisen in the West between legitimacy accorded elites to manage a country around political consensus and the alternative i.e., state control of social conflict and confrontation. In Canada this gap between political consensus and state control has been considerably widened by recent constitutional reform and legislation entrenching human rights. Human rights legislation has given legitimacy to dissent, and enabled advocacy groups to enlarge the forums through which they can take on the cultural policies of national governments.

Organization of “classical” social movements rested heavily on the oratory of class, ideology, and defining their own political interest against a clearly understood opponent—the capitalist class. The new social movements are more concerned with autonomy or, alternatively, with organizational reforms which would modify the existing cultural preferences of dominant elites, i.e., those cultural preferences which would be expected of upper middle-class white males from a relatively similar cultural
background (apart from language). The new social movements style of organization is nearly always participatory and modeled upon grass-roots networks and the forms of communication which they generate for public display—"street theatre", sit-ins, picketing, briefs at public commissions of enquiry, press releases, house journals, and filling the public benches at court hearings. These all require a sophisticated understanding of modern communication techniques, and need to match their organizational aims to mass media and a type of continuing quasi-campaign. In short their organization embodies a variety of forms of publicity and communication.

The new social movements and advocacy groups are far more ambiguous in ideological rhetoric than their nineteenth-century counterparts. One reason for a lack of clear-cut ideology is the absence of a clear-cut "class" opposed to them. Those who might oppose their programmes of cultural transformation can be found throughout society at many levels of social organization. Who are the "polluters" which the ecology movement opposes? School Boards and municipal councils may be as much a target of opposition as corporate capitalists.

How should they target their audience? Should the women's movement call for change in patriarchal values of males in society be addressed solely to males in political and corporate control, or should "ordinary women" also have their consciousness raised in order to change themselves? Political scapegoating is one possible strategy but how effective is this strategy in the long term? An alternative strategy would be to enhance female understanding of the importance of their subordinated position in society, especially among middle-class women for they are potential leaders or opinion makers. This strategy requires increased perceptual awareness of the position of women vis-à-vis men, which, in turn requires a strategy aimed at self-empowerment.

The networking surrounding self-empowerment, learning and perceptual understanding is as significant as that surrounding mobilization for political action. New social movements, therefore, direct a great deal of their activity towards reflexive concerns—TYPE B and TYPE C conditions of communication and their systemic interdependency than "attention management" in the strict sense of Simon's usage.

TYPE C conditions, relational interdependency, are especially important when advocacy groups are considered as decision systems. The case studies in my own publication show a complex decision-making situation in Canada. Government may wish to use an advocacy group for its own ends by letting them 'kite-fly' government initiatives. Sometimes governments will put the group 'on the payroll' co-opting groups by giving financial support. In fact, the hostile reaction of advocacy groups who had their support slashed in the recent Federal Government budget showed that this type of co-optation had become a budgetary expectation and that they had a right to be financed in this manner. Public reaction generally supported this position.

In other cases, government may request advocacy group involvement in a piece of new legislation. Thus, the "real opposition" against which a group is advocating shifts around. Sometimes government may be sympathetic to the aims of the advocacy
but is being lobbied at the same time by corporate lobbyists or even by counter-
movements. In these cases government is not in a position to actively support advocacy
groups. Other times government will threaten withdrawal of financial support rather
than co-optation if the advocacy group opts for militant action against government
policy.

**Advocacy Campaigns and “Communication Effects”**

The major difference between a political campaign and advocacy campaign is that
while the former works within a narrow consensus of values, enabling a political party
to show how it is the standard bearer of consensus, an advocacy campaign raises new
values or new issues which run against consensus politics. Political campaigns end at
a definite moment. More usually, advocacy groups foresee no happy ending of this
sort. They must continue to seek ways and means of promoting alternatives to
consensus and challenge the dominant values of elites for an indefinite period of time.

Nevertheless, successful advocacy requires organization similar to that of a
political campaign. These organizational requirements are grouped around the four-
fold aspects of informing, interpreting, giving voice, and mobilizing the public
(McQuail, 1984: 190–211)

1. informing about the aims and activities of given organizations.
2. interpreting and monitoring public events in order to enhance appropriate
   images of the advocacy group.
3. giving voice to beliefs, values, ideology and principles through interviews
   and publications.
4. developing consciousness of belonging to a advocacy group or social
   movement through contact building or networking.
5. mobilizing the activities of followers, for public demonstration, “street
   theatre”, or more militant action.
6. fund-raising.

Campaign requirements, like political campaigns, include a mix of “communication effects”. Some effects are clearly related to “air time”—news, newness,
alteration of the moment—and this sort of communication requires advocacy groups
to forge as many links as possible with broadcasters and newspapers. Elements of these
“communication effects” appear in all of the actions listed above, except the fourth one.
Obviously, a widely reported success in advocacy reinforces links to their own
membership and aids mobilization.

Other aspects of the campaign, especially developing consciousness through
contact building or networking, is of a different order of communication. Networking
as a form of consciousness-raising or self-assessment is a second-order communica-
tion completely different from the attention management implicit in publicity and
mobilization. Case studies show that advocacy groups have some difficulty in
reporting upon (4); moreover, problems of self-assessment increase in cases where advocacy directed towards long-term transformation of cultural values, or a "change of heart".  

Recently, Sari Thomas (Thomas, 1980: 437) argued that if the "newness", the immediate alteration of existing circumstances, is taken to be the criterion of "effect", many other aspects of the exchange of information go unnoticed or ignored. Perhaps it is to be expected that advocacy groups, like any organization in our society, would spend little time engaging in organizational self-assessment and engage in this activity only on an *ad hoc*, trial and error basis. At the same time I would contend that organizational focus on immediate "communication effect" derives from the dominance which attention management receives in the literature of business administration and institutional organization.

As Thomas says, the mechanical reduction of communication to the characteristics of a single channel between senders and receivers ignores all the multiple levels of meaning evident in communication. Concentration on "communication effects" reduces the study of communication to something done to somebody in measurable moments of change. Yet the sort of learning which is the outcome of self-empowerment, or organizational self-assessment, cannot be measured in terms of moments of change.

Second-order communication is a process of "learning about" derived from comparing experience of messages and feedback of messages to another set of events, that I have called TYPE C—the author-audience relation. Second-order learning is temporal in that all learning occurs in time. It can even be monitored. Yet knowledge-derived results from comparison of the level of "communicative effect" (TYPE A transmission) plus the feedback (TYPE C) plus feedback of feedback in communicative relations. The latter is considered reflexively. Reflexiveness cannot be said to be an outcome of any single individual’s comparison of levels; that is to say, it is not a managerial evaluation of the success of attention management. Rather, it involves knowledge about experience of undertaking comparison, a process of judgement about feedback which itself emerges through a social process of comparison and evaluation. In this sense self-assessment is intimately tied to the advocacy groups' public voice.

**Reflexiveness and Ecosystemic Models**

I stated at the outset that good theories of communication require at least three interdependent conditions, signal, sign, and sign production. These should be the minimal terms which enter into any study of semiosis and/or communication. They are, for example, the minimal terms employed by Umberto Eco and Gregory Bateson (Eco, 1979; Bateson, 1972). There is some difference in their respective interpretations but both agree that without inclusion of all three terms it is impossible to discuss the reflexive aspects of communication, to communicate "about communication" (Bateson) or define the "semiotic subject of semiosis" (Eco).

Of the two theorists Bateson was most interested in showing how order in the
universe is primarily informational. The other side of his reasoning is that models of human communication should be understood as analogues of natural systems, holistic, and concerned with the complex circularities of communication. This analogy with natural systems led him to call communication systems "ecosystemic".

Of particular importance in Bateson's discussion of ecosystemic models of communication is the way in which communication "effects" cannot be directly related to antecedent causes. In short, there is little chance of evaluating the effectiveness of communication through quantitative analysis of "effects". First, all systemic effects are circular in form since all communication "effects" initiate feedback. Second, through any system there is a diffusion of cause and effect and, where any system links with larger systems the large system’s characteristics at higher levels are qualitatively different from system characteristics at lower levels.

Third, the mutual causal nature of ecosystems results in "effects" becoming noticeable only at the boundaries between two sub-systems. The condition of "in betweeness" of cause and effect relations shows that analysis based on strict comparison or similarities of formal elements in a single system can prove to be misleading. For example, linear extrapolation of statistical correlations within a single system, which is found in conventional techniques of statistical analysis, are often fallacious because their quantitative comparisons of similarity in segmented statistical cells miss the "in betweeness" of boundary levels. There can be no understanding of "effects" unless comparison on both sides of any communication boundary or level are taken into account.

A whole new methodology needs to be constructed which requires rigorous attention to the sort of comparisons which can be undertaken—"double description" as Bateson terms it. As to where boundaries lie in communication systems, this question is problematic. Different observers, or different living systems, will mark boundaries from different perspectives. One conclusion from this could be that all communication systems are personal constructs. This is not Bateson’s conclusion. Rather the process to be explained is how boundaries become culturally defined in communication systems despite multiple individual perspectives.

Bateson considers the drawing of boundaries as analogous to a process of drawing a map. But the very act of mapping contains assumptions and presuppositions of how maps are to be drawn. In Bateson’s sense, mapping is epistemology, a matter of where the lines are drawn. The reflexive aspects of mapping are embedded in patterns of communicative interaction. So important are the interactional patterns of communication that often the only way to understand mapping rules is by observing these interactions with great care. All social groups create patterns of behaviour in which the pattern of interaction is given meaning. Repitition of pattern (TYPE C) serves as a guide for subsequent meanings of messages (TYPE B) embodied in the interactional pattern. Social groups will attempt to maintain stability in these interactive patterns because these patterns, which are also patterns of feedback, have special significance for them. They define order in the "map".
Sorting out boundaries in an ecosystemic model of communication is a matter of sorting out circularities in patterns of interaction. Often social groups are unaware of the interactional processes underlying the conceptual maps they have of system boundaries or of the communication systems of which they are a part. Mapping the boundaries is a complex task—but certainly not impossible for it is carried out from day to day by thousands of family therapists. Bateson's ecosystemic model of communication is fundamental to many, if not most, of these therapeutic practitioners.

**Summary and Conclusion**

I have analyzed advocacy groups and social movements in order to show how reflexive communication, accurate self-assessment, “consciousness of belonging”, emerges from the TYPE B and TYPE C conditions of communication. Commodity forms of information rely exclusively on analysis of “communication effects” that can be derived from modification of channel characteristics. While these are important, there is a limit to the relevance of this TYPE A communication.

Ecosystemic models include second-order communication. In terms of TYPE B and TYPE C communication, a significant part of the meaning of a sign (TYPE B) derives from the pattern of relationship in which the meaning of the sign was constructed (TYPE C). The conditions of this interrelation assume importance in self-assessment and through self-assessment affect the ability to make decisions. Like other social groups, social movements have difficulties in recognizing the links between second-order communication, self-assessment and decision taking, but the intimate relation between their public voice and their continued existence as viable organizations forces them to construct this link.

Social movements provide an interesting contrast to the university. In the immediate past, the university was a relatively autonomous institution—not directly tied to economic management of the state. Second order communication was built into its organization, and academic “work” was mirrored in the various ways in which the university contributed to reproduction of cultural heritage. This gave strength to the university’s public voice. As the university increases the amount of “work”, that is research and instruction aimed at increasing national and corporate wealth, second-order communication begins to decline.

“The university must regain its public voice, or it will suffer the consequences” (Graham, 1989: 4). A first step might be to understand the ecosystemic structure of communication, and a second to realize that the university’s contribution to the “production” of knowledge is intimately related to the continuation of reflexive communication. Meanwhile the conflict over the organization of “work” in the university continues.
ENDNOTES

1. Many social movements have reciprocal relations with political parties, but if a social movement considers merging with a party this almost always produces a split within the ranks. The outstanding example is the split in the Green Party in West Germany between fundamentalists and political pragmatists. The existence of the social movement is usually bound to a defined “life-style” which no political party can perpetuate. The activities of belongingness in a “new” social movement require a progressive self-understanding or consciousness of issues, the result of which is a process of empowerment and greater sense of autonomy in life (Touraine, 1981). No political party can guarantee these “life-style” results for a social movement has a moral requirement for members to practice the values which the movement sponsors. Political parties which operate within a representative system of government restrict “life-style” requirements to key representatives of the party. There is no general obligation among its supporters or voters to practice what they vote for.

2. In my earlier study of social networks and political mobilization of the independence years in Zambia, I completely neglected this point. In fact studies of social networking continue to use mapping or statistical techniques which only permit links from self to other, and disregard, or do not permit loops from self to self via others. Hence study of reflexiveness is methodologically eliminated from the analysis of social networks (Harries-Jones, 1975).

3. In one of the case studies in my book, that of an advocacy group concerned with race relations, my own request to them to write a history of their advocacy provided a forum for organizational self-assessment, which previously had not occurred.

4. In market estimation “speed-up” is one of the most important values, hence the argument that microchip technology contributes to improved quality of life. The quantitative measurement of speed-up, in turn, defines improvements in “communication effect”.

5. The attribution here to Bateson is my own. I am in the process of completing a manuscript based on the Bateson archives in California which I have entitled A Recursive Vision: Ecology, Science and Gregory Bateson.

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