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Change and the Environment

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This article will deal with consciously imposed environmental change relative to particular areas of social science theory and methodology. It will deal with the role of the person who investigates and instigates change relative to the social and physical environment.

We will look briefly at several schools of thought that concern themselves with man's relationship to his environment. This will be followed by a cursory examination of an emerging school of thought that has the potential of being useful to the person involved with intervention in this relationship. Some comments on the education of this person will conclude the article.

Although we will be dealing primarily with the methods and ideology available to the student of environmental intervention for responding to social relationships, it is not our intention to omit or overlook other important aspects of the intervention agent's role. Not only does he have a relationship to the people directly affected by any potential change, but he also has a relationship to other specialists who may be involved in parallel deliberation relative to that change. He also has a third relationship to people who have the ultimate control over implementing any change which he may suggest. This division of relationships into users, co-workers, controllers is an over-simplification of the environmental interventionist's many concerns. It is used here only as a convenient method of distinguishing this paper's particular concern with the user relationship from some noteworthy concerns in other areas.

Interest in man's relationship to his environment has increased enormously in the last few years. A great deal of rhetoric based on Malthusian theory [1] has been promulgated by a number of the spokesmen on the environmental crisis. This is probably due to the fact that many of the primary spokesmen have emerged from the life sciences. At any rate, there has been a very definite emphasis on the biotic aspect of this issue.

The social sciences have been trying to get on the environmental bandwagon—and rightly so, since they have something to offer in their view of the issue from another perspective. They are looking at the human side of the issue. In other words, they go beyond the arithmetic of the problem. They attempt to examine the social behavior behind some of these physical environment problems. By understanding this, they hope to be able to find (within the limits of a democratic society) some means of altering the particular social behavior that causes certain environmental problems.[2]

Along with this concern for how a change in social behavior might affect the environment has become a reciprocal concern for how a change in environment might affect behavior. These two concerns have been dormant in the social sciences for quite some time; but the "environmental crisis" seems to have awakened them. This is not to say that there is environmental determinism. Quite the contrary—as we shall see later. It is only to say that there is renewed interest in the relation between environment and behavior.

Indications of this renewed interest come from several sources. Recent renewal in professional journals over the environment-behavior relationship in the famous Hawthorne experiment[3] is one such indicator. The emergence of a new magazine which addresses this issue is another such clue.[4] Even our own campus shows signs of this renewed interest. A course in human ecology was offered this spring. The Geography Department in the Maxwell School recently hosted a speaker who specializes in the relation between behavior and environment.[5] In this author's opinion the interest in the relationship between behavior and the environment is on the upswing in the social sciences.

Depending on the particular development of this renewed interest, it can be very important in affecting the analytical and implementational tools of the environmental interventionist. There are several schools of thought at both the micro and macro levels of analysis which are worth reviewing.

On the micro level of analysis, there are several schools of thought in social psychology. There is Freudian psychology which deals with the personality and psycho-analysis. Its basis is in verbal behavior and how sexual energies are identified in the personality. This has had no practical application for the environmental interventionist.

The behavior school of social psychology has been popular in recent years. The functionalists are concerned with the controlled experimental situation. Classic conditioning is the basis for their work. However, in recent years they have made attempts at integrating ideas about perception and motivation into their learning theory. Behavior engineering was popularized by the utopian book *Walden Two*.[6] However, it has little to offer in the way of being an applied science. It is this author's opinion that such reinforcement theory would be more useful for manipulating behavior than for understanding it and responding positively to it in an action of environmental change.

The theory of cognitive dissonance is another important theory in social psychology. This is the idea that a person has a certain rational view of the world. If something is not within his understanding of the world, "dissonance" occurs.

Most social psychology experiments can be explained in any one of these several ways depending on your particular theory bias.[7]

Symbolic interaction theory of behavior is another theory which can be used in micro-analysis. It is based on the writings of George Herbert Mead.[8] It is not possible to adequately present this theory in this short article. This description will, of necessity, be sketchy and incomplete.[9] The theory dispenses with the old philosophical subjective-objective argument. Mead says that categories are just convenient designations. They are things which have no intrinsic meaning. Meaning is in what you do with things or symbols. This approach is geared to interaction. If something works, you use it. The social process that goes on to generate a thing or symbol is Mead's concern. When a thing or symbol calls out the same response in the sender as in the receiver, in an interaction encounter, it is called a significant symbol. A person's interaction encounters make up his identity. Social meaning is derived via interaction flows which call out the same symbols in a group of people. The total number of significant symbols common to interaction flows of these people is their culture. We will come back to the relevance of symbolic interaction relative to the environmental interventionist later in this article.

On the macro level of analysis there are also major social science theories concerning man and the environment.

Early 19th century English political economist, Thomas Robert Malthus put forth a theory that is the basis of classical human ecology. He maintained that there is a natural law in which population grows geometrically while resources remain on an arithmetic progression. He controlled any other possible variables in his theory. This is the theory referred to earlier in the article as Malthusian theory. It is descriptive of some large-scale environment situations, particularly in some of the developing countries where organization and technology are not major factors in the man-environment equation.

Karl Marx postulated a counter theory of social dominance over the natural environment. He said that organization and technology were key elements which man should use to adapt to and control his environment. The Marx theory is most descriptive of the developed industrial countries of the world.

In the U.S. the Marx theory of social dominance has been in play since the early "city beautiful" movements in the 1920's.[10] Today it appears that we have come full circle back to Malthus. Technical adaptation (Marx) may have reached an inelastic limit. (Malthus) [11]

But is it that simple? Modern human ecology is concerned with the environment as both a limiting and a permissive phenomenon. Modern macro-analysis would concern the interaction of population, organization theory, environment, and technology (POET).[12] Some of these studies have been relevant to environmental interactionist students on the studies of urbanization.

Although modern human ecology has improved on the classical schools of thought, it is still concerned with structure rather than culture.

Thus far, we have pointed out the symbolic interactionist school on the micro level and the modern human ecology school on the macro level as having something to offer the environmental interventionist in the way of theory and methodology. It is a marriage of this micro and macro social analysis which has given social science difficulty over the years. There has always been a problem of jumping from aggregate kinds of descriptions of macro social phenomenon to the cultural meanings at the personal level of micro social phenomenon. No one has been able to effectively combine the two into some cohesive theory and methodology.

Anthropologists have been the most successful over the years in this area with their cross-cultural studies. More recently some of them have done some work with a methodology known as network analysis.[13] This involves starting with a particular individual and identifying his ties to other individuals. It can also be done with situations. In either case, the identification of ties is done by the anthropological method of participant observation in the given culture. These ties are built up into networks, some of which are relatively stable, and others, which are transitory. Each network has individual characteristics in terms of density of ties, per cent of connections among one cluster, per cent of connections to other clusters, overlap and intersection of connections, etc. Ties may be one-way, reciprocal, short, long, direct, indirect, etc. This gives a pretty good picture of the real social behavior. Some excellent studies of urbanization involving moves from one network to another have been done by anthropologists in some of the developing countries.[14]

In sociology, there is also a school of network analysis, which attempts to bridge the gap between micro- and macro-analysis. There was some work with this kind of thing in the 1930's and 1940's. There was a method of taking the network ties and looking at them with matrix analysis. This was called sociometry. It faded because it was cumbersome and time-consuming. The results could

not be quickly computed in keeping up to date with a continually changing network. It is now possible to utilize the computer to alleviate this time-lag problem of sociometry. A former professor of mine was involved in this kind of thing in the early 1960's [15] with specific reference to network interactions as they relate to physical and spacial needs. If the anthropology people could get together with some of the sociology people now involved in network analysis, they could develop a pretty strong theory and methodology.

The sociologists already have a base for the development of such a theory in symbolic interaction theory. Interaction theory looks at repeated individual encounters. These repeated encounters constitute what is referred to as a social milieu. Each person engages in many different milieus or mini cultures (family, office, clubs, friends, etc.), each of which has a different vocabulary in particular significant symbols. A larger network like that used in anthropology methodology holds the milieus together.

The collection of milieus that center on individuals constitute his identity. Depending on the "overlap" or "intersection" of milieus; a person is said to have high or low "segmentation status" [16] in his identity.

This gets us into the area of space, time, and social milieu. This has relevance to the environmental interventionist. In traditional societies which are usually investigated by anthropologists, there is much overlap of personal milieu in terms of time and space. Strauss, in light of Mead's theory base, would say that there is little identity problem in terms of "status passage" [17] in this situation. There is less overlap of milieu in industrial societies and more problem with "status passage." However, up to now, little has been done in the investigation of space, time, and milieu.[18]

Network analysis has a possible advantage over micro and macro social analysis in looking at the solution to problems. Generally speaking, when social scientists view a problem from the perspective of systems or macro organization theory, they tend to see the solutions to these problems in terms of getting deviant behavior to fit the larger context at which they are looking. Daniel Patrick Moynihan's now famous "benign neglect" is an example of such a so-called objective-view solution to a problem. Micro-analysis, on the other hand, tends to see the solution to problems in subjective terms of changing the total larger contextual situation to suit the needs of a small group. You will recall in the earlier discussion of G. H. Mead that symbolic interactionism dispenses with these subjective-objective extremes. Thus, network analysis, based on symbolic interaction theory, and being a middle ground between the micro and macro perspective, attempts to avoid falling into the subjective syndrome, or objective syndrome, in solving social problems.

The environmental interventionist is faced with this subjective-objective dilemma all the time. Do you take a systems approach or an intuitive approach to your task? Symbolic interaction takes the approach of trying to do what works for the people who constitute the network that will be affected by the change.

Some of the work done so far [19] in attempting to bridge the gap between micro and macro social analysis has been in the area of people's spacial experiences and spacial symbols. Although they vary from one culture to another, spacial symbols generated from symbolic interaction are evident in all cultures. We have alluded to two concerns that network analysis has with space. There is the spacial overlap of social milieu and there is symbolic space. Both of these two ideas are relevant concerns of the environmental interventionist. Environmental interventionists have long looked to the social sciences for answers.

There are no laws, rules, or answers. Absolutes are not available. However, this school of thought offers theory and methodology that can contribute to the solution of social/physical environmental problems.

This methodology has been used in some instances, but without a formalization and theory base. We have mentioned the field of anthropology. It can also be seen in economics.[20] It may also have been utilized by some architects, but is lost in the depths of that mystic process known as design.

In the opinion of this author, social science concepts such as network analysis, behavior mapping [21] (and perhaps others) have direct relevance to the environmental interventionist and the architect and planner in particular. There is the common debate over what structure the environmental-interventionist-to-social-scientist relation should take in making use of these concepts. This gets back to the environmental interventionist's co-worker relationship which I referred to earlier in the article. The symbolic interactionist would take a situational approach to this relationship and do what works best in the specific situation.

This same situational approach applies to the relations of the environmental intervention agent to those people who control power. The relationship of the environmental interventionist to the milieu of the users, to the milieu of his co-workers, and to the milieu of the controllers, each involves a specific situational approach. They also all involve interaction.

Thus, on the subject of education, a situational approach is inhibited by the virtues of the division of labor. Some sources are implying that the environmental interventionist should know more about environment and behavior than the specialists at either end.[22] The School of Architecture and Planning at UCLA has taken steps toward that end. However, this may be expecting too much. It may be asking too much to try to produce a modern Renaissance man from our modern educational institutions. Perhaps the most important thing that we can do in education is to try to produce individuals who are socially aware and capable of engaging in the dialogue and activity that is essential to interaction theory and practice. It might be noted that the most successful user of network analysis thus far has been the anthropologist—a professional who is traditionally known for his participant observation (interactionist) approach to social groups. If our emphasis is on this interaction dialogue, the need for spirited, stimulating and creative thinkers need not be overlooked in this age of specialization.

However, going this route does not excuse us from making students of environmental intervention aware of some specific social science areas (such as network analysis and interaction theory) which are relevant to their special interests. It is to both these areas (development of dialogue capacity and development of interdisciplinary thinking abilities) that educators of the environmental interventionist/interactionist must address themselves. Because of current emergence of man/environment concerns in the social sciences, the time for such educational reform is now.

Footnotes

1. Discussed later in this paper.
2. An interesting sidelight is "Environmental package containing a national land use policy is silent on urban growth," *City* (March-April, 1971)—an example of a recent government response to an environmental issue. It failed to take comprehensive view of the environment as a social as well as a physical problem.
3. Originally reported in F. J. Rocthlisberger and William J. Dickinson, *Management and the Worker*. Cambridge: Harvard University Press, 1939. The question is whether production went up because of a change in physical environment or because of greater attention being paid to the workers during the experiment.

4. See *Design and Environment* which emerged in Spring, 1970.
5. Sr. Mary Annette Buttiner, "The Nation of Social Space," lecture, March 18, 1971, Syracuse University, dealt with the social expectations of space which specific people bring with them when moving to a new housing development. Based on her work with Glasgow architects and planners.
6. B. F. Skinner, *Walden II*. Toronto: MacMillan Co., 1948.
7. For a better presentation of these theories, see Elliot McGinnis, *Social Behavior: A Functional Analysis*. Boston: Houghton Mifflin Co., 1970.
8. George Herbert Mead, *Mind, Self and Society*. 1939.
9. For a good summary presentation of symbolic interaction theory, see Arnold M. Rose, *Human Behavior and Social Processes*. Boston: Houghton Mifflin Co., 1962.
10. See *Principles and Practice of Urban Planning*, International City Manager's Association, 1968, for a history of this movement.
11. See Bertrand Russell, *A History of Western Philosophy*. New York: Simon and Schuster, 1945, for more information on these theories.
12. See George A. Theodorsen, *Studies in Human Ecology*. New York: Harper and Row, 1961, for complete view of classical and modern human ecology.
13. See Fredrik Barth, *Ethnic Groups and Boundaries*. Boston: Little, Brown and Co., 1969. He formalized network analysis in 1958.
14. See Hans Beuchler and J. M. Beuchler for studies they have done in LaPaz, Bolivia, as introductory case studies.
15. Stuart Rose, University of Nebraska, School of Architecture, 1965, is now involved in work with this at North Carolina State University.
16. See Angelon L. Strauss, *Mirrors and Masks: The Search for Identity*. The Sociology Press, 1969, for an explanation of these terms.
17. Refer again to Strauss for an explanation of these terms.
18. See (a) Irving Goffman, *Behavior in Public Places*. New York: The Free Press, 1963.
    (b) Edward T. Hall, *The Hidden Dimension*. Garden City: Doubleday and Co., 1969.
    (c) Robert Sommer, *Personal Space*. Englewood Cliffs: Prentice Hall, Inc., 1969.
19. See (a) Goffman
    (b) Hall
    (c) Sommer
20. See J. Jacobs, *The Economy of Cities*. New York: Random House, 1969. If read from a network analysis perspective, it reveals that economic activity necessary for city origin and growth depends on network ties available for economic utilization.
21. See *Design and Environment*, Spring, 1971, for an explanation of this term.
22. Constance Perin, *With Man in Mind—An Interdisciplinary Prospectus for Environmental Design*. Cambridge: MIT Press, 1970.