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Environmental Psychology Goes Beyond the Laboratory

Dennis Gabor, the 1971 Nobel Prize winner in Physics, when interviewed on a radio program two years ago, urged scientists to address themselves to the problems facing our society. He said: "A scientist has a responsibility to the world at large." Harry Harlow, the noted psychologist, in an interview at about the same time, made the following statement: "Now part of the problem is that most experimental psychologists, I would guess 90 per cent, are indifferent to any real human problems and their research is not set up to deal with them. They aren't hostile to or actively disinterested in human problems — they don't have enough courage to be that extreme. They are just indifferent."

While I intend to advocate extending scientific research beyond the laboratory, I am still a strong supporter of the laboratory. It is only in the laboratory that we can get what all scientists, those interested in human problems and those disinterested, probably desire — controlled conditions. If we desert the lab, we are left with anecdote and uncontrolled observations, neither of which should be discounted; but it is only in the lab that we can attempt to test hypotheses. When we get cross-cultural studies, we have tested our hypotheses over place. Longitudinal studies test our hypotheses over time. I would defend, to the last breath, patient laboratory work. Why then have I chosen to promote going "beyond the laboratory"?

Because it is in the selection of the problem that the scientist reveals his or her values. I hold no contempt for any particular set of values, but I hold a strong brief for humanistic values in psy-

chology. I strongly believe that preference should be given to present human suffering — true, many of our greatest advances in science have come on the basis of true serendipity, but there is no reason to believe that serendipity can't occur equally when one addresses oneself to urgent human problems. Biology, medicine and physiology have long had this pragmatic approach. They work from an illness which is plaguing mankind in the direction of a cure. Edward Jenner, Jonas Salk and the many researchers who are trying to find a cure for cancer are examples of this approach.

In psychology it was for a while the social psychologist who looked at problems of individuals living in groups or in a society. Early studies in social psychology were directed to specific problems such as prejudice, attitude change, and mob behavior. Yet, today, many of the problems of the social psychologist have bogged down in minutiae. This has generated the birth of a new branch of psychology known as environmental psychology. Environmental psychologists are concerned with the effect on the individual of a particular environment in the here and now. They are not confined to the study of the white rat or the college student. Environmental psychologists prefer to study individuals in their everyday, intact settings, focusing on social problems such as housing, crime, pollution, poverty, transportation. Probably because I am a product of New York City and its schools, because I live in a rented apartment in New York City, because I am a parent who sends her children to public schools, because I travel in the subways and buses, because I walk in the streets of New York and breathe its air, I have made a conscious decision to address myself to the problems of urban living. Yet I have not lost sight of the scientific attitude. My plea is that people work in fields in which they feel an emotional commitment to solving human problems, that they work in areas they know something about.

In the field of energy conservation there is a definite need for the psychologist to emphasize the human factor. In this area the psychologist has the opportunity to test out principles of motivation and learning developed in the laboratory. So far economists, atomic scientists and public officials have dominated in seeking solutions to energy waste and depletion. There has been little if any attempt by psychologists to employ their knowledge of human needs and feelings in turning people into energy savers rather than permitting them to continue as energy wasters.

mass transit mess

Mass transit travel is the only viable alternative to the automobile. In New York City, with the largest mass transit system in the world, there has been a steady decline in subway and bus use at a time when citizens have been urged to opt for mass transit systems rather than the automobile, which has been associated with energy depletion and air pollution. Technical limitations and lack of adequate funding are not solely to blame for New York City's crippled mass transit system. Although New York City and State public officials have recognized the failure of New York City's mass transit system to attract riders, they have erroneously sought solutions from financial advisors, technicians, planners and designers, without paying much attention to the needs, feelings and desires of transit riders. In the design of trains, maps, subway stations and passenger facilities, the human factor has been largely ignored.

To illustrate: in considering the problem of how to handle the additional passengers that were going to use the subway stations near the newly-built World Trade Center, the Transit Authority simply counted up the number of available exits on each subway stop, and then calculated how many people could go through each exit when a train comes in, by allowing a certain amount of room for each passenger and a certain amount of time for passage through the space. A psychologist would have recognized the refusal of people to choose equally amongst a number of available exits. Similarly, passenger comfort was not taken into consideration in the design of the new New York City subway cars. Passengers complain of narrow contoured seats and little leg room. In the design of the present subway map, there was no attempt to determine whether or not people could read and interpret the symbols correctly.

In an effort to persuade New York City's Transit Authority to recognize human factors in future transit planning, the present author and her colleague decided to arm themselves with data to support their contention that the Transit Authority's failure to recognize people's needs and feelings has deterred transit use. It was then decided to undertake a study to evaluate the success of the present subway map and other informational aids.

The absence of a clear structural legibility within the New York City subway system makes its users dependent on other sources of information about its structure and operations while traveling, particularly in unfamiliar areas. Although most daily riders of the

subway system possess the necessary cognitive maps for traveling to their jobs and friends, the poor legibility of the system — as presented in its structural design and details — makes it difficult for people to develop a permanent map of unfamiliar parts of the system. Other topographic representations of the structure and operations of the subway system are required for the necessary orientation. The New York subway guide is thus an important tool for travel, and it was within this context that the study was undertaken.

After learning that the existing New York subway guide as well as the other graphics in the system were not understood by the group of new subway riders who served as subjects in our study (Bronzaft, Dobrow and O'Hanlon, 1976), the author and her colleague were able to persuade the Transit Authority to recognize human needs in the design of its "new subway guide". Working as part of a team involving members of the Transit Authority, the author has a commitment from the Authority that the "new" subway map they are designing will be tested out on New York subway riders before it is adopted.

New York subway riders have long complained about the noise in the subway system, as have the one-half million New Yorkers living close to the elevated train tracks. Despite repeated promises and announced programs to remedy the problem of noise, the Transit Authority has been especially slow in implementing its noise-abatement program. Recognizing that train noise is both psychologically and physiologically damaging, the present author and one of her former students (Bronzaft & McCarthy, 1975) decided to measure the effect of the noise generated by an elevated train on the reading skills of children in a nearby elementary school. A significant relationship between train noise and depressed reading scores was found, with second graders on the noisy side of the school trailing their peers on the quiet side of the building by four months in reading scores, fourth graders lagging behind by three months, and sixth graders behind their peers by as much as thirteen months.

The results of our research were then presented at a hearing the Transit Authority held on noise abatement, and played a role in reversing the Authority's previous plan to place higher priority on cushioning noise in stations rather than on stressing wheel-truing and rail-grinding, as the results of our study had recommended. It should be noted that the news media had reported the findings of our research prior to the hearing.

citizens in decision-making process

When the New York City Transit Authority requests funds for transit improvements, it is required to hold hearings for citizen input. Since plans for transit improvements are often too far along for drastic changes without major delays, or the public has too little information on proposed improvements to offer concrete suggestions, these hearings only serve the public by providing the opportunity to list their oft-made complaints in what has been described as nasty confrontations between Transit Authority members and consumers. The New York City Transit Authority has erred in not encouraging meaningful citizen input that could have resulted in citizens joining transit officials as partners in seeking solutions to New York's transit problems. As it now stands, a minority of New York's transit riders complain about conditions at transportation hearings, and a majority bemoan the dreadful conditions in private or occasionally accost a subway conductor or bus driver.

Citizen advocates have long urged citizen participation in the decision-making process, and the social psychological literature on commitment strongly supports this view. Kurt Lewin (1947) has shown that active participation produces greater commitment than passive listening. Dissonance researchers (Brehm & Cohen, 1962) have stressed the importance of free choice in arriving at a decision, and of responsibility once the decision has been made. If New York's citizens were afforded the opportunity to participate in active discussion in the decision-making process involving transit issues, rather than passively listening to intended plans, they would feel personally committed to promote these plans. At present, the author is attempting to set up a demonstration project that would test out this hypothesis. A recommendation has been made to the Transit Authority to meet with a group of concerned citizens to plan a schedule of station stops along a subway route that the community would deem most desirable and the Transit Authority would deem cost-effective. The citizens have committed themselves to publicize the new schedule, urging riders along the route to patronize that subway line. By offering a service to citizens they helped plan, it is hoped that more riders will be attracted to the system. It is further hoped that this project will encourage future undertakings of a similar sort.

If mass transit travel is to be the workable alternative to the automobile, then New York City must take the initiative in demonstrat-

ing that a mass transit system can be safe, reliable, cost-effective and environmentally sound. In attaining this goal, it will serve as a model of how responsiveness to human needs and values can promote cooperativeness between government agencies and the citizenry.

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