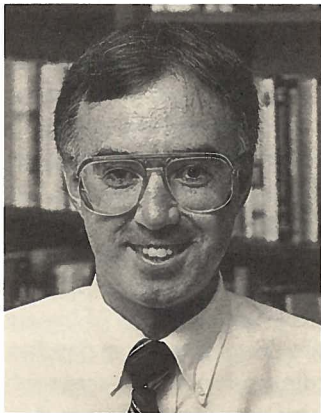


Whenever I tell someone that I teach environmental psychology, the response is usually a blank stare followed by the inevitable question: What is that? Few people, including most psychology majors, perceive much of a connection between psychology and environmen-

What is “Environmental Psychology”

and What Can it Offer to Students Concerned about Global Environmental Issues?

Frank T. McAndrew



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tal issues. Consequently, students who are interested in attacking the environmental problems that besiege our planet seldom think of psychology as an avenue for their educational and career goals. However, a research experience in this relatively new field has proven to be just the spark needed to ignite an interest in environmental issues in many of my students over the past decade. At its core, the environmental crisis is a crisis of maladaptive human behavior with deep social, political, and psychological roots. If you have ever wondered why some people go to great lengths to protect the environment while others seem unwilling to make even the smallest changes in lifestyle, or if you have ever wondered why people engage in vandalism or how the weather affects your moods, then you have pondered the same questions that interest environmental psychologists.

Environmental psychology is the discipline that is concerned with the interactions and relationships between people and their environments. Traditionally, the emphasis in environmental

psychology has been on how human behavior, feelings, and well-being are affected by the physical environment. The earliest research focused on how human-made environments such as buildings and cities affected behavior. In recent years, there has been an increased emphasis on how humans are affected by natural environments, their perceptions of and reactions to environmental hazards, and more research on the effects that humans have on the natural environment. By encompassing both natural and human-made environments, environmental psychology provides research opportunities for students interested in social as well as environmental issues. Although a typical undergraduate research project cannot be expected to solve problems that are global in scale (much to the surprise and dismay of some of the more idealistic students!), students can tackle local problems related to these global issues, make a real contribution, and become more sophisticated and knowledgeable about the global problems in the process. The old environmentalist slogan, “think globally, act locally,” applies in research as well as in politics.

Over the years, many of my students have engaged in research projects related to environmental psychology. Some of these have grown out of a class project in which the student is required to engage in one new “environmentally responsible” behavior for the duration of the term and provide a written cost-benefit analysis of the difference that can be made by just one person changing his or her behavior. For example, students have done everything from installing reduced-flow shower heads in dormitory bathrooms to issuing a college-wide memo requesting that college administrators and faculty use two-sided rather than one-sided copies for all memos and reports. A student organization that instituted the campus recycling program was a direct outgrowth of a class project in environmental psychology. Most research, however, consists of empirical studies done as part of senior research requirements or honors projects. Frequently, these projects spring directly from the individual student’s interests. One of the benefits

of environmental psychology research projects is that they are usually concerned with a "real world" problem that must be studied in a field setting. While this has certain disadvantages, I have found that they are more than offset by the enthusiasm and satisfaction students

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derive from feeling that they are doing something "real" and useful. As one can see from some of the examples that will follow, an additional benefit of field research is that it does not require laboratory space or expensive equipment, making it just as accessible to students at space-poor small colleges as to students at larger universities with more resources.

The student research that I have been involved with is as diverse as the interests of my students. Students have studied the effects of geographic location on the willingness to sign petitions, the best way to get students to pick up litter in the college mailroom, and the effectiveness of the design of an elementary school classroom.

One student, a double-major in biology and psychology, spent the summer of 1995 working as an intern at the Brookfield Zoo in Chicago. Her work there will be the basis of her senior honor's project. The interesting twist to her work, however, is that she has been studying the behavior of zoo visitors rather than zoo animals, in an attempt to help the zoo function more effectively as an educational institution. Although zoo visitors have higher than average

education levels and socioeconomic status, research shows that as a group they are not very sophisticated in their knowledge of animals. They have a sentimental, emotional interest in animals, rather than one based on factual understanding. Studies show that other groups -- bird watchers, hunters, and members of humane/environmental organizations -- score higher than zoo visitors on tests of their knowledge of animals. For most people, going to the zoo is a social event to be enjoyed with children and other relatives. Fully 70% of all zoo visitors are in groups of relatives, and 50% of all groups contain children. Aside from socializing, visitors report other benefits from their visit to the zoo: relaxation, informal learning, and aesthetic experiences.

Since the motivations and backgrounds of zoo visitors are quite diverse, designers must be careful not to make the educational component of the zoo too demanding. Most zoo visitors do not read signs, therefore signs must be short, eye-catching, and very relevant, if they are to be read at all. Experiential exhibits in which visitors become actively involved through touching, listening, and playing, are more effective than instructional signs for teaching new information about animals. For example, the Brookfield Zoo's "flying walk" exhibit forces visitors to move their upper bodies and arms in a way that simulates the figure-eight motion of a bird's wings in flight. A before-and-after study of adults and children who visited this exhibit showed impressive gains in knowledge about the mechanics of flight. Similarly, visitors who participated in the interactive African Rock Kopje exhibit at the San Diego Zoo learned significantly more about the rocky ecosystem found on the plains of Africa than did those who simply looked at the exhibit or read the signs.

My student's summer project involved her in helping to develop a series of interactive games that people can play after they exit from the Brookfield Zoo's "Tropic World" exhibit. The games are being designed to be fun to play while at the same time teaching basic information about the delicate

balance that exists in different ecosystems. After the games are in place and available to the public, other students will undoubtedly be involved in research that will evaluate their effectiveness. Interactive exhibits are more likely to attract people to them. They provide learning experiences at different cognitive levels and address a wide range of learning styles. The only drawback to interactive exhibits is that they can be expensive to develop and maintain.

Understanding visitor reactions to zoo exhibits is important for improving them. Poor exhibits may lead visitors to form incorrect impressions of animals and encourage feelings of human superiority and indifference; these attitudes ultimately can work against wildlife preservation. Thus in the future, the design of zoo environments will increasingly rely upon the study of visitor behavior. I would expect that research opportunities for undergraduate students interested in psychology and other social sciences will increase accordingly, especially in the larger urban zoos.

Also during the past year, another student took advantage of a year of study in Germany to become involved in a cross-cultural study of the basis of human landscape preferences which will result in a comparative ranking of the scenic value of 92 environmental features. Her data, in conjunction with data being collected by colleagues in other countries, will be an important component of our attempt to understand the qualities that people seek in outdoor recreational environments. This is an important study, because there have been relatively few cross-cultural studies of landscape preferences. Such data are vital for the evaluation of theories that are now being used to explain these preferences. For example, in recent years a perspective that sees environmental preferences as a by-product of human evolution has been growing in popularity. According to this view, human preferences have developed because they have been crucial to our survival as individuals and as a species. It may not have been sufficient for a species merely to recognize environments in which it could function well, but it would be highly adaptive for the species to de-

velop a strong preference that motivates individuals to actively seek out those environments. Put very simply, the evolutionary position states that individuals who preferred the "right" environments survived longer and reproduced more successfully than individuals who did not prefer them as strongly, and that the tendency to prefer these same environments has been passed on to us.

Therefore, the extent to which human beings express cross-cultural agreement regarding the attractiveness of features in the natural environment becomes an important theoretical question. Aside from its theoretical value, however, there is a practical side to research on landscape preferences. As in the zoo, managers of national parks and recreation areas are learning that understanding the expectations and behavior of visitors to these environments is crucial to the development of these areas in a more-crowded future, and to preserving and improving them for future use.

Another student has initiated a totally different, yet equally interesting project. The city where my college is located (Galesburg, Illinois) is a railroad hub, and literally hundreds of trains criss-cross the city each day. The blast of train whistles and the rumble of freight cars is a dominant part of the ambiance of the town. One of my students became interested in the effects of this incessant railroad activity when her parents had difficulty sleeping in a motel located close to the railroad tracks during a visit to Galesburg to drop her off at college. She is currently pursuing this interest in a study of the attitudes and perceptions of residents and business people toward the railroads as function of their location relative to railroad tracks.

In all of these studies, the agencies in the "real world" (zoos, railroads, chambers of commerce) are extremely interested in the work and have been very cooperative. The students benefit from the initiative required to contact and interact with off-campus people and end up with an impressive bit of experience to put on a resume; they make contacts that can be useful as employment references as well. In short,

the field studies provide a more exciting, confidence building research experience than is usually provided for the student who never leaves the laboratory and works only with his or her mentor.

Although I am obviously a strong advocate of getting students involved in field research, I acknowledge that for some problems and for some students field research may not be the best approach. Environmental psychologists employ a wide array of research approaches, each with its own strengths and advantages. Some of my students have conducted more traditional laboratory experiments as a way of answer-

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ing environmental questions. For example, in the course of his reading, one student learned that people respond to different features of the physical environment with varying degrees of physiological arousal, and that this can have implications for things like reaction time and strength. This student also happened to be a weight lifter, and became interested in the effects of color on strength. He conducted a lab experiment and found that in fact his experimental subjects displayed stronger grip strength in response to red visual stimulation than they did when exposed to

green. This study was published in a professional journal and a brief description of it even found its way into a bodybuilding magazine. Another student conducted a similar lab study that looked at the effects of odor on memory.

Environmental psychology also allows students to pursue research that is more archival in nature. A student who was an outstanding baseball player was curious about the folklore surrounding baseball stadiums. Do people steal more bases on artificial turf and hit more home runs in domed stadiums? Are there more errors in natural grass stadiums? A bit of checking revealed that there had been no actual test of these hypotheses, and that what passed for "common wisdom" was based on nothing more solid than opinion. A meticulous compilation of statistics from all major league stadiums over a ten year period was analyzed. He discovered that the common wisdom was in fact correct, although there were no real figures to back it up until this student's study was published in a refereed journal. Once again, a student became excited about a research question based upon the relationship between human behavior and the physical environment, and was able to achieve a satisfactory resolution of the problem through research, albeit research of a very different kind than other students were doing in the laboratory or the field.

The fact that many student projects have been of sufficient rigor to be published in refereed journals serves as an inspiration to students who follow. Copies of student publications are prominently displayed on a bulletin board in the psychology department. Students are told from the very beginning of the research process that they have the ability to produce professional quality work. Needless to say, the excitement of doing applied research is doubled when the students know that others before them have ended up with their names and their work in print.

In conclusion, I have found the discipline of environmental psychology to be an absorbing, fun, and easy way to get undergraduate students excited about doing research. It satisfies

the students' interest in solving real world problems, while at the same time respecting the space and equipment limitations of most college settings. Also, faculty need not be trained as psychologists to mentor students in this interdisciplinary field. Simply thinking about environmental issues from the standpoint of human behavior will open up many possibilities for research in the social sciences, as well as in the more "traditional" environmental fields such as biology and chemistry. Another long-term benefit of getting students involved in researching environmental problems may be that they will gain an appreciation of the impact that their own behavior and the physical environment have on each other. If this leads to a more environmentally responsible citizenry in even some small way, be it through recycling or volunteering through community organizations, it will have been time very well spent indeed.

For those unfamiliar with the discipline of environmental psychology, a few of the journals that specialize in or at least frequently publish articles related to environmental psychology include: *Environment and Behavior*, *The Journal of Environmental Psychology*, *The Journal of Applied Social Psychology*, and *The Journal of Architectural Research*. I have also listed the most current introductory level textbooks in the references at the end of this article.



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