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## Lowenthal, Environmental Perception and Behavior

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## BOOK REVIEWS

### *Environmental Perception and Behavior*

Edited By

DAVID LOWENTHAL

Chicago: Department of Geography, University of Chicago.

Research Paper No. 109. 1967

Pp. vi, 88.

Growth of the behavioral approach in the social sciences has converged with a renewed interest in planning the "optimal environment with man as the measure" to produce an expanding body of literature on environmental behavior.<sup>1</sup> Of the 270 authors listed in a new directory of behavior and environmental design,<sup>2</sup> psychologists number 79, designers 72, planners 29, sociologists 19, and geographers 18. By contrast only one economist and three engineers are listed. This emphasis reflects the interests of the compilers, but also suggests that a new wave of social scientists is starting to take an interest in problems that have hitherto been regarded primarily as scientific-technical in nature. Perhaps in hindsight it will be seen that economists represented the forward edge of the movement of the social and behavioral sciences into the planning, design, and management fields. The work of economists has dramatically altered the approach to natural resources (consider the transformation occurring in the water supply industry).

What will the effects be of behaviorists telling us how to manage natural resources? A confident answer cannot yet be given to the question. It seems that the decision-making process will become more complex. Much more effort may be made to predict the behavior and choices that people will make after the implementation of a plan or project, and quite possibly, better decisions will be made. The evidence of the book under review, however, is that in most cases, operational procedures have not yet been worked out that will be acceptable to resource managers.

The book contains five papers: three by geographers, one by a psychologist, and one by a three-man group of planners and designers. The editor himself is a geographer, primarily interested in the philosophical background of perception and attitudes toward

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1. See for example, Kates and Wohlwill (eds.), *Man's Response to the Physical Environment*, 22 J. of Social Issues, No. 4 (1966).

2. Research and Design Institute, 1967 *Directory of Behavior and Environmental Design* (1967).

environment. The first paper by Yi-Fu Tuan adopts a philosophical and literary approach to the symbolic significance of special landscapes, such as deserts and tropical islands. In a delightful essay, effortless in its display of literary skill, Tuan describes three common attitudes to deserts: 1) a denial of their existence or real extent, 2) a transformation of them for human use, and 3) a search for God or transcendence in them. The account places current efforts towards reclamation through nuclear power and desalinization in a broader perspective, but it leads to philosophical musing rather than to criticism or plans for action or decision. Tuan concludes that "man's world is a fabric of ideas and dreams," and that "for the privilege of having fantasies . . . [man] pays with the risk of disaster and the certainty of ultimate impermanence in all his efforts." Such achievements as we have, we owe to "the ingenuity and stubbornness of our more practical dreamers."

In a cautious paper, Robert Beck argues that individuals structure their space-perceptions in different ways. Each of us develops a distinct "spatial style" as an attribute of personality. The differences are demonstrated by a spatial symbols test in which subjects express preference for one or another of a pair of symbols. The test contains 35 pairs. Five dichotomous variables are examined. These are diffuse space vs. dense space, delineated vs. open space, vertically vs. horizontality, right vs. left in the horizontal plane, and up vs. down in the vertical plane. Responses from 611 subjects are factor analyzed and the results confirm that different "spatial styles" are found. Differences are also distinguished by professional group. For example, it appears that geographers have very strong preferences for abstract configurations that are diffuse over dense, delineated over open, and right over left, but show no firm preference as a group for up vs. down or horizontal vs. vertical. Such findings are provocative, but Beck is careful not to offer hypothetical explanations.

In a paper entitled *Environmental Perception and Adaptation Level in the Arctic*, Joseph Sonnenfeld describes his research into the stressful effects of the Alaskan environment on native Eskimos and non-native Americans. The major part of the paper discusses the results of a slide test. Pairs of slides are shown and, in a forced choice, viewers are asked to indicate their preferences for one or the other as a place to live. As in the case of Beck's symbols, each pair of slides represents a dichotomous variable, or in Sonnenfeld's

terms, a basic dimension. One of the pair has greater relief, richer vegetation, more water or warmer temperatures than the other. The test has been taken by three groups of Eskimo children, three groups of Eskimo adults, three groups of American adults in Alaska, and by college and high school students in Delaware.

Sonnenfeld reports how each group fared differently on the test and is bolder than Beck in offering some tentative explanations of the differences. The meaning of the test scores is not at all times clear, however, and the significance of the results tends to be lost in sentences that are difficult to interpret, *e.g.*, "Interestingly, non-native males and females ranked even higher on the topography dimension than the Anaktuvuk groups, and lower than the Barrow males and females on temperatures, suggesting, oddly enough, a greater preference of the non-native group for cold environments."

For the reader who takes the trouble to decipher such sentences, the results are again provocative and establish that different groups respond to the test in significantly different ways. The meaning of such responses is not clear, however, and interpretation is difficult. For example, Sonnenfeld reports that American males who have been in the Arctic for less than two years prefer the slides showing greater relief, more water, richer vegetation, and cooler temperatures than those who have been there longer. Why should this be so? The pattern is reversed among females, however, where those with short experience have a preference for less relief, less water, poorer vegetation and warmer temperatures. It is concluded that "one cannot easily distinguish between what may be in the one case an effect of environmental adaptation over time, and in the other case, an indication of the kind of individual who remains for long periods of time." A more positive interpretation, that "preferences for landscapes with the more rugged topography and the richer vegetation would appear to indicate a low level of adaptation to the Arctic, which in northern Alaska is a monotony of low relief and tundra vegetation," seems rather forced.

The paper by Robert W. Kates reports on interviews about how users and residents of coastal areas on the eastern seaboard perceive the storm hazard. This paper has relevance to management decisions and public policy. It is found that although ninety per cent of the 368 respondents had experienced storms, only two-thirds of them expect future storms. Although half the respondents had suffered some damage in the past, only a third expect a future storm to

entail damage for themselves. The explanation offered of the gap between actual experience and future expectation is that people perceive storm hazard in distinctive ways. They reject the high degree of uncertainty associated with a random or capricious phenomenon in the conventional technical and scientific view, and impose regularity or certainty on nature. Thus "the 1962 storm was a freak," or "we might have a couple of hurricanes, but not a storm," or "we get storms once in ninety years; we're not due for another."

Kates recommends against large-scale government action to protect beach-front property because 1) although respondents have a high level of experience, they tend to deny the hazard and even object to protection measures (by opposing the construction of seawalls), and 2) they knowingly increase hazard (by levelling dunes in order to improve the view or the accessibility to the beach).

The final paper by Appleyard, Lynch, and Myer is extracted from their book, *The View From The Road*. It reports on research into the esthetics of urban highways. Heavy emphasis is placed on findings and recommendations without describing research methods or providing supporting evidence. The book has been widely and appreciatively reviewed elsewhere, and in the present context, the paper stands out as a good example of what research in environmental perception and behavior might contribute to design.

The volume that David Lowenthal has edited provides an interesting *mélange* of contributions. The connections between islands and deserts as symbolic landscapes, spatial symbols, stress in the Arctic, the perception of coastal storms and the esthetics of highway design remain implicit and the authors make no acknowledgment of each other's contributions. Nevertheless, a logical sequence is developed: Tuan—philosophical and literary; Beck—abstract and theoretical; Sonnenfeld—theoretical with some tentative interpretations; Kates—a public policy orientation with some overt recognition of theoretical relationships; and Appleyard, *et al.*—a forceful blend of the practical with continual theoretical implications.

These papers suggest that a new field is emerging. It seems to be more fraught with pitfalls for the unwary than most, but promises to broaden our perspective on natural resource decisions and, at a minimum, to offer some useful hints on how to manage the environment to the greater satisfaction of men.

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