

## Human Ecology

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The modern scientific American geography that has recently emerged began with the splendid work of Davis, Gilbert, and a few others in physics or physical geography. It is a singular fact, which may be recalled in passing, that geography, though it is the mother of geology, has, in the recent period which has witnessed its revival in America, as a subject of higher study, been encouraged by geology. In one university after another work in geography has been offered first in the Department of Geology. As this work increased, in some cases the official title of the department was changed to "Department-Geology and Geography". Hardly a physical geography was established, an insistent demand arose for what is called "human geography". But as already stated human geography is different from human ecology. Geography treats men and their activities in their visible aspects and so far as they may be regarded as distributed phenomena. It does not concern, except incidentally, the interrelations among men. Human ecology, which is also interested in the relations of man to his geographic environment, fastens its attention upon the human interdependences that develop in the action and reaction of a population to its habitat. In other words, while geography views the adjustment of man from the standpoint of modifications of the earth's surface, human ecology makes a detailed analysis of the process and organization of relations involved in adjustment to environment. This brings us to a second point of distinction between the two disciplines.

Geography involves a description of things as they are at a point in time; its interest is in distribution rather than development. Ecology, on the other hand, is evolutionary. It undertakes to describe the developmental process as well as the form of man's adjustment to his habitat (Hawley, 1950). An ecological conception of geography had appeared much earlier, of course, but it failed to attract many enthusiasts at any point in the development of geography as a discipline. *"Ratzel, taking his clue from the biological use of the term 'ecology,' once suggested that anthropogeography is, in effect, human ecology. From his point of view, as from that of biology, human ecology would be defined as the study of the interaction of man and environment; i.e., it would be that phase of animal ecology which is particularly concerned with the human species"*(Nelson, 1936). The doctrine was further strengthened by Barrows in 1922 when in his presidential address before the American Association of Geographers he emphasized

that in geography human ecology is the guiding concept. In the words of Barrows (1923) – “*Thus defined, geography is the science of human ecology. The implications of the term "human ecology" make evident at once what I believe will be in the future the objective of geographic inquiry. Geography will aim to make clear the relationships existing between natural environments and the distribution and activities of man. Geographers will, I think, be wise to view this problem in general from the standpoint of man's adjustment to environment, rather than from that of environmental influence. The former approach is more likely to result in the recognition and proper valuation of all the factors involved, and especially to minimize the danger of assigning to the environmental factors a determinative influence which they do not exert.*” Further while defining geography as human ecology he stated “*geography is the science of human ecology. . . . Geography will aim to make clear the relationships existing between the natural environment and the distribution and activities of man.*”

### **The Nature of Human Ecology:**

Human ecology is a relatively current development; the first use of the term in the literature was in 1921. The first book with title as ecology appeared in 1935 and interestingly was the work of a botanist. In this brief span of time, the discipline of ecology has evolved quite rapidly as the *application of ecological concepts to the study of the relationship between people and their physical and social environment*. When concerned with human ecology one can relate to Mackenzie’s (1931) definition which states that *Human ecology deals with the spatial aspects of the symbiotic relations of human beings and human institutions*.

Human ecology, in so far as it is concerned with a social order that is based on competition rather than consensus, is identical, in principle at least, with plant and animal ecology. Society, as ecologists have conceived it, is a population settled and limited to its habitat. The ties that unite its individual units are those of a free and natural economy, based on a natural division of labour. Such a society is territorially organized and the ties which hold it together are physical and vital rather than customary and moral, Human ecology has, however, to reckon with the fact that in human society competition is limited by custom and culture. The cultural superstructure imposes itself as an instrument of direction and control upon the biotic substructure. Reduced to its elements the human community, so conceived, may be said to consist of a population and a culture, including in the term culture (i) a body of customs and beliefs and (2) a corresponding body of artifacts and technological devices. To these three

elements or factors-(i) population, (2) artifact (technological culture), (3) custom and beliefs (non-material culture) -into which the social complex resolves itself, one should, perhaps, add a fourth, namely, the natural resources of the habitat. It is the interaction of these four factors-(i) population, (2) artifacts (technological culture), (3) custom and beliefs (non-material culture), and (4) the natural resources that maintain at once the biotic balance and the social equilibrium, when and where they exist. The changes in which ecology is interested are the movements of population and of artifacts (commodities) and changes in location and occupation-any sort of change, in fact, which affects an existing division of labor or the relation of the population to the soil. Human ecology is, fundamentally, an attempt to investigate the processes by which the biotic balance and the social equilibrium (i) are maintained once they are achieved and (2) the processes by which, when the biotic balance and the social equilibrium are disturbed, the transition is made from one relatively stable order to another.

A number of human geographers accept the definition of human ecology as the study of mutual relations between men and environment, but in practice they have limited its application to a specialized field of geographic study. Some geographers-for example, Barrows, Renner, and White make human ecology synonymous with human geography. Barrows, the first geographer to publish this point of view, has written as follows: . . . *the center of gravity within the geographic field has shifted steadily from the extreme physical side toward the human side until geographers in increasing numbers define their subject as dealing solely with the mutual relations between man and his environment.* . . . White and Renner, whose volume is entitled ***Geography, an Introduction to Human Ecology***, limit this field to a study of the direct relations between men or groups and their environments. This specialized field of study investigates problems of man's relation to his environment, both individually and in groups, such as (i) the effects of climate upon human health and energy; (z) the influences of resources and topography upon human occupations, homes, institutions, and inventions; (3) influences of natural routes and barriers upon social isolation and contact; and (4) possible effects of natural surroundings upon customs, attitudes, and beliefs. Thus these human geographers, who define human ecology as a specialized field of science, obviously disagree with Bews who regards it as an inclusive synthesis. Human ecology, like other specialized sciences may be defined and delimited in terms of the basic abstractions it makes. In particular, human ecology abstracts (i) a distinctive type of ecological inter- action and (ii) a distinctive aspect of community or regional structure that arises out of this interaction. To sum up human ecology may now be defined tentatively as a

specialized field of analysis which investigates (i) those impersonal sub-social aspects of communal structure- both spatial and functional-which arise and change as the result of interaction between men through the medium of limited supplies of the environment, and (ii) the nature and forms of the processes by which this sub-social structure arises and changes. The value of human ecology depends upon the validity and significance of its own specialized abstractions and not upon its service in supplying indexes of social life.

### **Conclusions:**

The old geography, although it has lost many specialties, still tries to cover too much ground and it will obviously benefit from physics, climate science, plant ecology and animal ecology as these organized sciences when combined with geography will make it more specialized. Relationships between man and earth, which are the result of their efforts to survive, are generally the most direct and intimate; most of the other relationships are established through these. Human ecology provides space to study spatial organization rather than areal differentiation which became a dominant doctrine within the discipline of geography. This is a positive outcome as but at the same time has its short comings. According to Chorley (1973) the traditional ecological model is inadequate in answering the raised questions especially as it does not give man it's due place rather casts it in the role of a subordinate. The Hagerstrand's time space geography gave recognition to this approach when he talks of "*web-model of space time interaction*" where he suggests that this approach incorporates certain essential biotic and ecological predicates within human geography and seeks to bridge the gap between human and biological ecology. Geography as human ecology has confined the scope of geography as it totally ignores the social and cultural environment as well as man's relation with this environment. It only centers on the components of physical environment and man's relation with it. Kirk (1963) that if this approach encompasses both ecological and social sciences than may be it would initiate a discussion which can be relevant in understanding man and environment relationship from their point of view.