

A SOCIOLOGICAL IMPLICATION OF ENVIRONMENT IN SOCIAL DEVELOPMENT*

DAI-YEUN JEONG
Cheju National University

The environment consists of, at least, three components - the natural, the human-made, and the social. They exist in a mutual causal relationship, and function as a determinant of human life. Thus, the environment should be researched in terms of such a causal mechanism among the components, in relation to human life. The importance of the environment lies in that its crisis is the crisis of human beings. Nevertheless, the natural environment and its problems produced by the human-made physical environment has been emphasized, even with disregard for its impact on or relationship to human life. The social environment and its problems should also be included in the research. Industrialization as a social development is the direct and main cause of the emerging natural and social environmental problem. This means that human beings are the beneficiaries and sacrificers of social development, and that a self-contradiction lies between industrialization and the preservation of the environment. One of the ways to solve the self-contradiction is to change the value of social development from quantitative growth to qualitative environmental amenity. For this, sociology should develop a new set of indicators of social development, measuring the degree of natural and social developmental amenity.

AIM OF THE STUDY

The contemporary society is defined as a risk society in terms of the environmental problem on a world-wide basis (Beck 1992). It is well known that the environmental problem has arisen as social development has advanced.

Social development has been advanced in various ways. These include the democratization of politics, the industrialization of economy, the urbanization of population, and a transition towards individualism. The four areas of social development have not been advanced independently, but rather in a interrelated sequential way. That is, political democratization, whose main concept is based on an increase in autonomy of each social component and an increase in the participation of the social components in decision-making on a national-wide basis, has promoted industrialization. The industrialization has brought about urbanization, as

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well as individualism of social consciousness.

Natural environmental problems have emerged directly from industrialization. Social environmental problems and the result of urbanization have also accompanied industrialization. Nonetheless, environmental problems have been examined mostly in terms of the natural environment only. In this context, at least two important issues arise. One is for whom the industrialization has been advanced, and the other is why the natural environment should not be polluted. Industrialization and unpolluted natural environments are important for human beings, especially for their quality of life. In other words, the environment is important because the crisis of the environment is the crisis of human life.

With such implications, the aim of this paper is to identify the sociological implication of the environment in social development. In order to do this, the paper will examine first the sociological meaning of environment in terms of its components and their internal mechanisms for both the natural and human-made environment. Next, the causes and their sequential mechanism of emerging natural and social environmental problems will be examined in relation to industrialization as the main social development producing environmental problems. Finally, based on these examinations, the paper will attempt to identify the comprehensive implications of the environment in social development.

THE COMPONENTS OF ENVIRONMENT AND THEIR INTERNAL MECHANISM

The environment is defined as all external forces and factors to which an organism or aggregate of organisms is actually or potentially responsive. The environment is important for human beings in that it determines the way human action is done, and as a result, functions as a determinant of the quality of human life. In sociology, such an environment has been issued from the 1920s, with the emergence of social ecology whose interest is focused on the relationship between environment and human life. In the 1920s and 1930s the principle of social ecology, outlined by Robert E. Park and his colleagues, was based on three aspects (Hannigan 1995: 15). First, humans are not so immediately dependent upon the natural environment, having been emancipated by the division of labor. Second, technology has allowed humans to remake their habitat and their world rather than to be constrained by it. Third, the structure of human communities is more than just the product of biologically determined factors; it is governed by cultural factors, notably an institutional structure rooted in custom and tradition. In

the 1950s social ecology maintained that environment comprises the raw materials of life and the conditions, both favorable and unfavorable, that affect the use of those materials (Hawley 1950: 13). In the early 1960s social ecology, which is based on a perspective as a system among population, organization, environment, and technology (Duncan 1961), has included both the natural and human-made social environment. In the later 1960s the physical and social environment in which people live was perceived as an important source of forces which influence the development of attitude, behavior and personality (Robson 1969: 199-200). Recently, Dunlap and Catton (1979) pinpointed the distinctive core of the field as a new social ecology which focuses on the interaction between the physical environment and social organization and behaviour. In addition to Dunlap and Catton's new social ecology, Buttel (1987) adds four more key sociological areas of environment study: (1) environmental attitudes, values, and behaviour; (2) the environmental movement; (3) technological risk and risk assessment; and (4) the political economy of the environment and environmental politics.

Until recently, however, the concept of environment has focused only on the natural environment, even in sociology. The concept of environment should be understood in terms of at least two sides, which are ultimately integrated into a framework. One is whether the environment is a visual one or not, and the other is by whom the environment was created. According to this framework, the components of environment can be diagrammed at a macro level as follows (Jeong 1994).

In Figure 1, 'physical or non-physical' is distinguished by whether it has a visual appearance or not. 'Natural environment' means one which is given

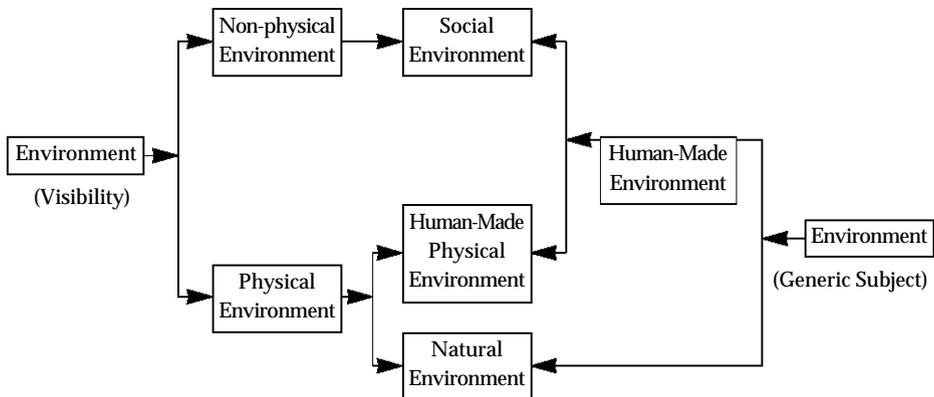


FIGURE 1. The Components of Environment

naturally with a visual appearance, while 'human-made environment' means one which is created by human beings to increase the convenience and efficiency of human life. 'Social environment' means living conditions of individuals, except for the those determined by the natural environment. Examples include technology and dominant culture such as institutions, values, and worldviews, prevailing in the society.

Of the components of the environment in Figure 1, the main components are human-made physical, natural and social environments. The three components do not exist independently, but rather exist in an organic relationship in terms of their mutual influence, which may be called an internal environmental system. Nevertheless, sociology fails to explore the interdependence among the components, in particular between the natural and the human-made environment. As discussed earlier, the environment is important because it influences human life. In other words, the condition and quality of human life is determined by all the three components through their internal organic relationship in terms of economic-demographic constraints and opportunities, direct impacts on human health, and aesthetic-moral implications, etc. It may be argued that the three components which surround the conditions and quality of human life are interrelated as follows (Jeong 1994).

Social environment such as social institution, level of technology, and wide ranges of objective social realities affects the way human-made physical environment is established, and the negative output of human-made physical environment is feedback to social environment in a way of environment management being re-institutionalization for controlling the negative output. The nature and pattern of the human-made environment have depended on the path of technological development. The natural environment affects the social environment in terms of its way of institutionalization, which, in turn, means the social environment being institutionalized in a way of adaptation to the given natural environment of the society. The examples include the change in population level, and the genetic composition and behavior of the human species (Goldblatt 1996: 26). On the other hand, the path of the social environment being institutionalized affects the path of natural environment being destroyed. The negative output, that is a result of the human-made physical environment, damages and pollutes the natural environment. Meanwhile, the natural environment determines the condition of the human-made physical environment being established. One example is the geographical distribution of plants (Goldblatt 1996: 26).

Such interrelationships among the three components of the environment

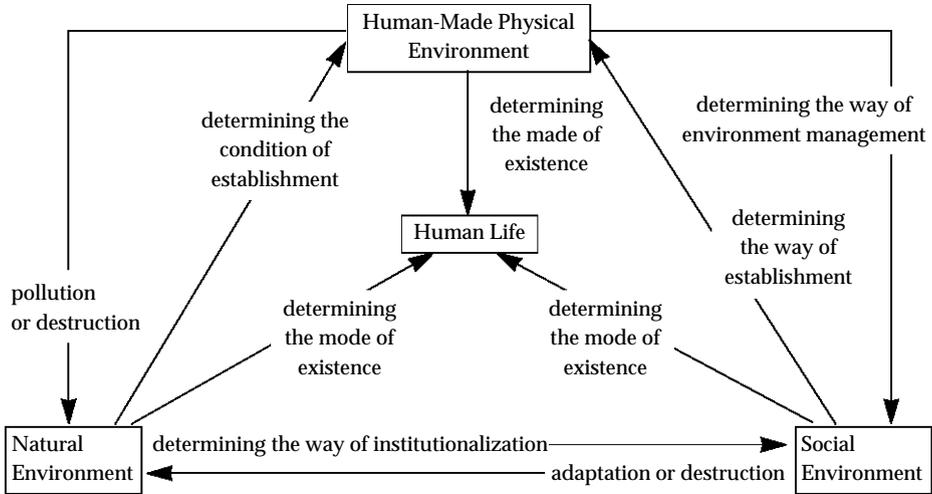


FIGURE 2. Environmental Internal System

in relation to human life discussed thus far may be diagrammed as Figure 2 at a macro-level.

The three components of the environment in Figure 2 consist of their own sub-components, which exist in an internal organic relationship. In particular, the internal organic relationship of the natural environment has been termed as an ecosystem, which is defined as a network of interconnected and interdependent parts (Harper 1996: 12). Biological ecology has said that the ecosystem of the natural environment is characterized by a self-regulating system through mutually causal change.

In the early 1960s, such a notion of ecosystem had been introduced in sociology by Duncan (1961) in a more expanded way: the so-called POET which was depicted as an ‘ecological complex’ in which: (1) each component is interrelated with the others, and (2) a change in one can therefore affect each of the others. The POET model was a trailblazer in providing insight into the complex nature of environmental problems. But the model failed to give sufficient weight to environmental constraints. For example, in a causal sequence suggested by Dunlap (1993), an increase in population (P) can create pressure for technological change (T) as well as increased urbanization (O), leading to the creation of more pollution (E). The model is also criticized because the notion of environment was variously used to mean many things such as the natural environment, the built or modified environment, and the social surroundings (Harper 1996: 55). Other critics of the model noted that it excluded culture, such as values,

attitudes, worldviews, and paradigms from consideration, and that it wrongly emphasized balance and equilibrium between the terms of the model, when imbalance and maladaptation were often empirically the case (Harper 1996: 15).

However, Figure 2 not only includes each concept of the POET model, but also supplements the above critics on the POET model. That is: (1) In Figure human life is regard to Population, social environment includes not only culture, but also the pattern of Organization, human-made physical environment is a result created by Technology, and natural environment is the unique one given independently of Population, Organization, and Technology. (2) Figure 2 specifies the environment into the natural, human-made physical, and social one.

Thus, Figure 2 may be a new useful notion of ecosystem in terms of the environment surrounding human life, even though it is not exhaustive. The system of Figure 2 may be termed the 'totality of ecosystem', which is a modified and expanded framework of the ecological complex on the basis of the POET model.

THE EMERGENCE OF THE ENVIRONMENTAL PROBLEM

Nowadays, many terms representing the environmental problem are used in the natural and social sciences. The examples include environmental risk, environmental crisis, environmental degradation, and environmental destruction. However, two common things are found from these terms. One is that they connote the original state of the environment being worse. The other is that their conceptual meanings are confined to the natural environment only in Figure 2. Thus, it may be maintained that until recently, the environmental problem has had a narrow conceptual meaning, excluding the social environment and its problems.

In explaining the causes of environmental problems at such a narrow level, two primary approaches have been offered. One is the ecological explanation, and the other is the political economy explanation. The two approaches have suggested wide ranges of negative impacts on human life as the causes of natural environmental problems. For example, the traditional examples include population growth (Ehrlich 1968), and the development of production technology such as unspoiled inorganic or synthetic material (Commoner 1971). Many factors besides population and technology have been suggested as the primary causes of environmental deterioration, including the West's anthropocentric and religious orientations and values (White 1967; Toynebee 1972), the socio-economic

forces encouraging both population growth and technological development (Schnaiberg 1980), production activity due to the increase in population over the optimum capacity (Borgstrom 1969), economic development and increase in wealth (Schumacher 1973), competing functions of the environment (Catton and Dunlap 1989), and social class issues in which the corporation and the state line up in opposition to ordinary citizens (Cable and Cable 1995: xi). In addition, in the narrowest sense, many environmental economists maintain that the market failure of environmental resources being used in capitalism is the main cause of environmental problems.

Three important common perspectives on the causes of environmental problems are found in the above explanations. First, the individual causes of environmental problems suggested are based on either the negative impacts of the natural environment on human life or on the negative impacts of the human-made physical environment on the natural environment in Figure 2. Second, they are confined to the natural environmental problem only. Third, they are based on monocausal approaches.

The causes of environmental problems suggested above are not independent, rather they are interrelated. Therefore, the causes of environmental problems should be based on a multicausal explanation, and environmental problems should include both natural and social ones. In this context, a complex set of factors are involved in the process of 'modernization' as the sources of environmental problems (e.g. Orr 1979), while numerous analysts have cited 'industrialization' involving technological progress, economic growth, urbanization and other social processes (e.g. Kassiola 1990; Foster 1994). Implicit in such explanations is the recognition not only that there are multiple sources of environmental problems, but that these sources are themselves interrelated in a socially and historically complex fashion, as social development has advanced.

Then, we may analyze the emergence of environmental problems with regards to modernization or industrialization. Industrialization is a sub-concept of modernization, because modernization represents the whole process of historical and societal development, including the democratization of politics, the industrialization of economy, the urbanization of population, and a transition towards individualism. Political development establishes an ideological way of industrialization being realized. Meanwhile, urbanization and individualism are both the by-products of industrialization. Therefore, there is no doubt that industrialization rooted in technological development has produced the human-made physical environment, and as a result, has been the direct and

main cause producing both the natural and social environmental problems, which, in turn, determines the mode of existence of human life, as is shown in Figure 2.

Some scholars have attempted to describe the dominant social paradigm of industrial society as the main cause of environmental problems being produced (e.g. Pirages 1977; Harman 1979; Cotgrove 1982; Dunlap 1983; Milbrath 1989; Olsen *et al.* 1992). Although the scholars differ about the details, they agree that industrialization, as the main social and historical paradigm in terms of its scale and scope, amplifies the second part of the inherent duality of human life: that humans are the unique creators of technological and sociocultural environments that have singular power to change, manipulate, and sometimes to transcend natural environmental limits.

Then, the whole process of environmental problems emerging through industrialization may be discussed as follows (Jeong 1994). Broadly, industrialization has brought about both positive and negative impacts on human life. The positive impacts include 'improvement in material quality of life' and 'bureaucratization of social organization'. The former has

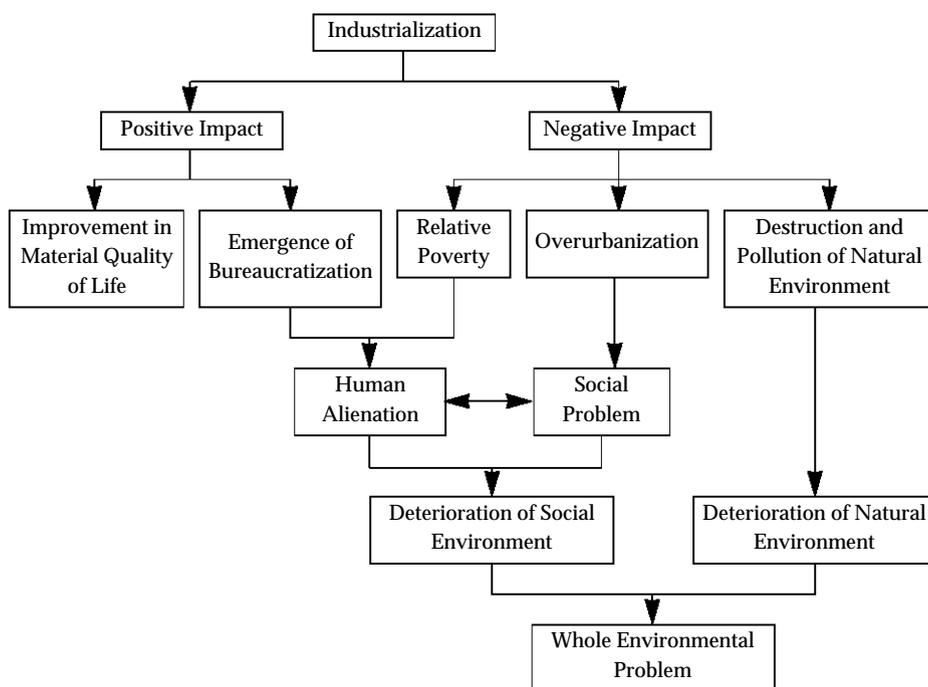


FIGURE 3. The Process of Emerging Environmental Problem

improved the convenience of human life with material affluence, while the latter has improved the efficiency of social production. Meanwhile the negative impacts include 'over-urbanization', 'relative poverty', and 'destruction and pollution of natural environment'. The 'bureaucratization of social organization' as a positive impact and 'relative poverty' as a negative impact have brought about 'human alienation', and 'over-urbanization' has accentuated the emergence of 'social problems'. 'Human alienation' and 'social problems', which influence mutually, have deteriorated the condition of the social environment, and 'destruction and pollution of the natural environment' has directly deteriorated the condition of the natural environment. The deterioration of both the natural and social environment consists of the whole environmental problem. The above discussion can be diagrammed as Figure 3.

CONCLUSION

Environmental concerns that have received increasing attention over recent years range from global issues, to more regional effects, to local matters. Nevertheless, environmental sociology has contributed surprisingly little to knowledge about what the environment is, and the causes of environmental problems. The discussion thus far in this paper may draw the following sociological implications of the environment.

The concept of the environment should be not be limited to the natural environment. The concept should be extended to the social environment as shown in Figure 1. This is because, as shown in Figure 2, the components of the environment are interrelated through their internal mechanisms. Nonetheless, in both science and practice only the natural environment has been emphasized without regard to the causal sequence among the components of the environment. Thus, as shown in Figure 2, it would be more sociological to frame the totality of the environment as an expanded model of the ecological complex suggested in the 1960s.

The concerns with environmental problems are rooted in the establishment of The Council for the Environment in England, and The Environmental Protection Agency in the U.S.A. in the 1960s and 1970s, respectively (Redclift 1984). Environmental problems are a problem because they impact the quality of human life. In other words, environmental problems are important because environmental crisis is the crisis of human life. In addition, as Figure 3 shows, environmental problems include both the natural and the social. Nonetheless, in both science and practice only natural environmental problems have been emphasized in terms of human

health and the preservation of the natural ecosystem, without explanation of their impacts on the whole ranges of the quality of human life. Human health is not the whole, but a part of the quality of human life. As a result, it may be argued that concern with the environment still is merely at the level of the environment itself, even in sociology.

Yet there is no consensus on the concept of quality-of-life. For instance, economists are concerned with the question of how society should best allocate resources (Megone 1992). Social ecologists are concerned with environmental conditions to meet the needs of human beings (Sontag *et al.* 1980). The psychological perspective stresses the allocation of resources and environmental conditions in terms of the subjective happiness or satisfaction of individuals (Campbell 1981; Sirgy 1986). This would mean that quality of life is a comprehensive concept including not only the objective economic, social, and environmental factors, but also subjective satisfaction with the objective factors. Thus, the environment, including both the natural and social, is meaningful when it is studied in relation to the quality of life. The impact of even the natural environment on humans is more than health, thus the impact of both the natural and social environment should be studied in terms of the whole areas of the quality of human life. Such an approach to the environment may be termed 'human survival environmentalism.'

Industrialization as a social and historical development has achieved remarkable quantitative growth, to the great convenience and material affluence of human life. However, as shown in Figure 3, industrialization with disregard for the relationship between the environment and quality of life has led to the deterioration of both natural and social environments. As a result, human beings lose the qualitative amenity in terms of both the natural and social environments as a living condition. This would mean that human beings are the beneficiaries and sacrificers of social development, and that a self-contradiction lies between social development and the preservation of the environment.

Therefore, the relationship between the environment and social development has been reconsidered since the 1970s in order to solve the self-contradiction. It is, as is known, the emergence of 'the limits to growth' (Meadowest *et al.* 1972) and 'the continued economic growth through technological optimism' (Kahn *et al.* 1979). These economic or technological approaches may be merely a partial solution, because their ideas are based on only the assumption of limited natural resources (Luten 1980) and/or natural environmental problems. Currently, it is recognized that the ability of ecosystems to fulfill any of the necessary functions can be exceeded

(Dunlap 1994). It is therefore more appropriate to think of 'the limit of ecological capacity' which includes both natural and social environments, rather than limited resources per se and natural environmental problems only.

We need a sociological and philosophical approach to the limit of ecological capacity in the following ways. First, we should re-establish the value of social development in terms of 'the development of qualitative amenity of environment with quantitative affluence of material'. In a phrase, this represents the so-called 'environmentally sound and sustainable development.' If forced to choose between the two, priority should be given to the qualitative amenity of the environment. Then, social development would be measured not by 'how much material growth has been achieved', but by 'how successfully adaptation to or harmonization with the environment has been done'.

In order for such a value of social development to be realized, we should have a conception that man is not independent of nature, but rather a part of nature (Marietta 1995). This conception would lead us to conclude that nature is not an object to be conquered for quantitative improvement in the material quality of life, but an object for human being to be harmonized or an object for human being to be adapted for qualitative improvement in the amenity of environment. This may be measured empirically when we develop indicators representing the degree of natural and social environmental amenity. Then, the indicators would be new ones, measuring the degree of social development in terms of quality.

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DAI-YEUN JEONG is professor of Sociology at Cheju National University. He received his Ph.D. in Environmental Sociology from the University of Queensland, Australia. His areas of interests are environmental sociology, sociological methodology, and social change and development. He has published some books of sociological methodology and many articles on theoretical, empirical, and methodological study of environment in terms of sociological perspective. His present research interests are the ecological footprint and the appropriated carrying capacity of the environment in relation to sustainable development.