

INTRODUCTION TO ECOSEMIOTICS

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The application of a semiotic approach in biology or ecology is fundamentally different from applying mathematical or physical methods in life science. Semiotic biology, as well as semiotic ecology, means that we step over the limits of natural science, and what we get is thus an extended biology, (biosemiotics), and an extended ecology, (ecosemiotics), as well. The present paper begins by defining the term “ecosemiotics” (also known as “ecological semiotics” or “semiotic ecology”), as the study of the semiotic interrelations between organisms and their environment. The center of interest of ecosemiotics is not just a homo semioticus, but more generally, an organismus semioticus. Fundamental is the question concerning the relationship (always of a semiotic nature) between the organism and its environment. Ecosemioticians are interested in the study of sign processes, which are not restricted only to arbitrary and artificial signs. Ecosemiotics is also and perhaps primarily concerned with natural signs mediating between the organism and its environment. It is an approach to semiosis (defined as any form of activity, conduct or process that involves signs, including the production of meaning), based on the assumption of a very low “semiotic threshold” between signs and “non-signs”, if it does not reject such a threshold altogether. Semiosis in this case is by no means restricted only to processes in higher organisms, to culture and social convention. Any primitive biological organism already interacts semiotically with its environment when it selects or avoids energetic or material objects in its environment for the purpose of its own survival. Ecosemiotics can also be defined as the semiotics of the relationship between nature and culture. This includes research on the semiotic aspects of the place and role of nature for humans, what is and what has been the meaning of nature for us, humans, how and in what extent we communicate with nature.

Key words: *ecosemiotics, biosemiotics, semiosis, sign processes, meaning*

Ecological knowledge (as a natural scientific knowledge) is in principle not sufficient to solve many ecological problems, it is incapable of meeting the environmental issues of contemporary culture, despite the fact that we apparently know why, the number of living species in the world is decreasing, the human population is growing, the mountains of waste reach from the backyards and oceanic abyss to the upper layers of the atmosphere. The solution of these problems also requires, in addition to the knowledge of ecological processes, an understanding of human behaviour, because the semiotic aspects of human-nature relationships are of great importance everywhere, and these, particularly, are still not sufficiently taken into consideration or understood.

In the present paper the author attempts to demarcate the specifics of ecosemiotics, or semiotic ecology to describe and to classify some of its main problems, and to introduce several concepts using its specific perspective.

MATERIAL AND METHOD

Not all theories of semiotics are able or willing to recognize the semiotic aspects in organism-environment interactions. For example, F. De Saussure's (1857-1913) anthroposemiotics is a semiotics without any ecosemiotic perspective. According to Saussure, „nothing” in the cognitive environment of humans is “distinct before the appearance of language” (1916:111-12), and even human thought, without the shaping form of language, is an „indistinct mass”, and „a vague uncharted nebula”, in which nothing is defined by necessity. Such a linguocentric program of semiosis is bound to impede any process of semiosis interaction of the organism and its environment.

A theoretical semiotics of far-reaching ecological implications, by contrast, is the one of Charles S. Peirce (1839-1914). His interpretation of the interactions between organisms and their environment seems often to be a pansemiotic one. As it results from his *Collected Papers* (1931-1958), Peirce distinguishes among the relations between the objects and the organisms in the environment of humans, between those which are only dyadic and those which are of a triadic nature, specifying that only triadic relations between organisms and their environment can be of a semiotic kind.

A merely dyadic and thus nonsemiotic organism-environment interaction occurs when the organism is confronted with something which presents itself as a „brute fact”, or in an effect of mere chance. The environment in such a dyadic relation is experienced as „eminently hard and tangible”. Only when such a dyadic interaction becomes triadic relations is the organism-environment relation transformed into a semiotic one.

In a semiotic interaction, the organism experiences its environment no longer in its immediacy as a brute fact, but interprets it with reference to a third, a „meaning”, purpose, goal, or law which transcends the immediate environmental situation (see also Winfried Noth, 1994). Such triadic relationships of semiosis are characteristic of cognitive processes, goal-directed behaviour, and more generally, any mental activity.

Ecosemiotics describes the appearance of nature as dependent on the various contexts and situations. It includes nature's structure as it appears, its classification (syntactics); it describes what it means for people, what there is in nature (semantics); and it finds out the personal or social relation to the components in nature (pragmatics). In all this, it includes the role of memory and the relationships between different types of memory in culture. Due to considering the evolutionary aspect, ecosemiotics also extends to non-human systems.

Ecology, despite the great variety and resulting diffuseness of its meaning, and despite the existence of areas like ecological psychology or ecological linguistics, is nevertheless traditionally considered in its true meaning as a natural science. Human society belongs in ecological systems not via its mental abilities, but through metabolism and energy consumption, through the mutual relationship with other species.

The ecological aspects in all the eco-branches of the humanities mean either an emphasis on the environment or environmental factors, or just the application of natural scientific methodology. Ecosemiotics is not just an application of ecology – in the sense of its methods or environmental factors – in semiotics. This might be more like an application of semiotics in ecology, however, this does not happen to be the precise

formulation either, since semiotics is a more standpoint than a set of methods or ideology.

RESULTS AND DISCUSSIONS

Originally a branch of biology, ecology has had an enormous transdisciplinary influence on other fields of study since scholars have become aware of the worldwide ecological crisis. Thus, we are now confronted with a philosophical ecology (Sachsse 1984, Schonherr 1985 and Attfield 1994), an anthropological human ecology (Eisenbart 1979, Hutterer et. al.1985), an ecology of the mind (Bateson 1972), a natural philosophy of ecological thought (Trepl 1987 and Mayer-Tash 1991), ecological literary studies (Kroeber 1995), an ecological ethology (Krebs and Davies 1978), an ecological history (Herrmann 1986), an ecological aesthetics (Sturm 1979, Schonherr 1985, Bohme 1992, Krampen 1993), an ecopsychology (Mogel 1984) or environmental psychology (Mehrabian 1976), ecolinguistics (Noth 1996).

Despite first allusions, the concept of ecosemiotics has not yet been explicitly mentioned in the context of these interdisciplinary ecological studies. However, there have been several directions of studies in sign processes which can be considered as ecological since they have investigated various kinds of semiotic relationships between organisms and their environment.

The term „eco-semiotics” (also „ecological semiotics”, „semiotic ecology”) still does not appear in the textbooks and reviews of, for instance, T.A. Sebeok or J. Deely (1990). Although, the term was already used in the 6th International Congress of Semiotics in Guadalajara (Mexico) in 1997 and in a recent meeting in Tartu. Also, it appears in the first volume of „A Handbook on the Sign-Theoretic Foundations of Nature and Culture” (Tembrock 1997) as „Okosemiose” in German and „environmental semiosis” in English. It was also used by J. Hoffmeyer (1997) in the form „eco-semiotic”.

The paper by W. Noth (1996) was apparently the first to coin this term and to define it. This work by Noth was discussed in several papers of the same volume of the „Zeitschrift fur Semiotik”. However, these were not the first works in which semiotic ecology was introduced. Already 15 years earlier, attempts to build semiotic ecology were made in the Moscow group of theoretical biology (Levich 1983), and these ideas were discussed in joint meetings with colleagues from St. Petersburg and Tartu. Also, there have been several publications in which some semiotic aspects of human ecology have been considered. (e.g., Hornborg 1996, Teherani-Kronner 1996, Hauser, 1996), and many more, in which the semiotics of human-nature relationships are developed without the direct application of semiotic terminology.

W.Noth includes under the name of ecosemiotics the semiotic aspects of all organism-environment interactions, both human and non-human, among them those which have been viewed by endosemiotics, i.e. considering that the environment can be also intraorganismic. In this sense, Noth’s term covers the area

of biosemiotics which has been established in the last decade of development in this field, and ecosemiotics would thus be just a synonym for biosemiotics.

The obvious need for ecological semiotics can also be seen from the point made by J. Deely in his work *Basics of Semiotics* (1990. p.7): „As autonomous, the sphere of human culture is but relatively autonomous, as transcending, but only by incorporating and resting upon, a physical environment shared with all forms of biological life in a larger network –biosemiosis -- of mutual dependence. The understanding of that larger whole precisely in terms of semiosis defines the complete task of which cultural semiotics forms a part”.

Ecosemiotics can be defined as the semiotics of relationships between nature and culture .It deals with the semiosis going on between a human and its ecosystem, or a human in one's ecosystem. In this, it can be related to ethnology and sociology of man-nature relationships, to environmental psychology and the anthropology of environment, which, although quite close to ecosemiotics, deal more with the comparative than the semiotic aspects of the problem.

Ecosemiotics is generally considered to be a border discipline, not only because, by being a relatively new field of study, it is situated on the outskirts of the paradigm of semiotics. Ecosemiotics is a border discipline also in the intrinsic sense that it has emerged in the boundary between fields that study culture and those dealing with natural phenomena.Both of these historical realms of science have had difficulties in solving questions about the relations between culture and nature, and, at least to some extent, they have neglected the existence of those relations at all.

For general semiotics, the emergence of biosemiotics leads to debates about the semiotic threshold and the borders of cultural semiotic systems. For cultural semiotics, the views of the founder of the Tartu school, Juri Lotman, seem to be significant. By comprehending human culture as a sphere of sign processes –the semiosphere—and by emphasizing the importance of translation processes both on the internal and external borders of that semiosphere, the focus will inevitably move to the semiotic relations between culture and other culture, nature or whatever lies behind the border.

Thus, culture is not a system closed into its semiotic totality, but an open and dialogical entity that communicates, influences, and is influenced by the surrounding semiotic and non-semiotic realms. It is not possible to understand culture fully without paying attention to the physical and natural environment into which the culture is rooted by the age –old processes of meaning-making and by all temporal and spatial conceptions.

For natural sciences, increasing interest toward cultural processes also seems to be quite unavoidable. In the present day, it is quite difficult to find or construct any natural settings for biological studies, in which direct or indirect human impact does not have a significant role. Biology and other natural sciences must take human activities into consideration now, and even more in the future, and for many problematic areas, it is necessary to understand the cultural and symbolic nature of these activities. In nature protection, where difficulties mostly originate from

cultural systems, taking account of human understanding, beliefs, habits, and use of language and media is often crucial for achieving an efficient solution.

Summarizing the importance of the semiotic perspective in environmental protection, Kalevi Kull in his work *Semiotic ecology: Different natures in the semiosphere*, published in 1998, has written: "However, ecological knowledge (as a natural scientific knowledge) is in principle not sufficient to solve many ecological problems. My guess is that it is so, because the semiotic aspects of human-nature relationships are of great importance everywhere, and these are still not sufficiently taken into consideration or understood. To start participating in this dialogue with natural sciences as an equal counterpart and thus to exceed the limits of a pure theoretical discipline, ecosemiotics, inevitably needs suitable objects for study.

CONCLUSIONS

The main message of this article is that ecological knowledge is not sufficient to understand or solve the ecological problems which humans face, since these are consequences of certain deeply semiotic and cultural processes, intertwined with ecological and biological ones.

Our knowledge of nature, at its best, is not nature itself, and not only in the sense that all the given is just the given in our personal Umwelt, but much more – semiotic processes have been and are continuously creating a second nature – through the changing of nature itself. As a result, nature has changed so much that the nature we know is already entirely the second or third one. It is a fundamental feature of semiosis processes –to change, to manipulate, to take under control to make a difference, to build the other.

There exist different types of cultures, among them some which have been able to create balanced relationships, with nature, and many others which automatically create environmental problems for themselves. Thus, the understanding and possible solution of ecological conflicts assumes knowledge of both cultural and biological parts, which means that cultural semiosis and ecology can constructively interact in this field. Consequently, ecosemiotics seems to be a possibility for facing these most important, and most difficult challenges of the contemporary world.

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