

Ecosemiotics

Elena Fratto

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My aim is to offer an account of how scholars of semiotics have been mapping human-environment relations and “nature writing” with their toolbox of concepts and definitions. Specifically, I will briefly introduce the fields of ecosemiotics and biosemiotics and I will then pose questions for reflection and discussion.

I find it interesting how in conceiving the semiosphere (1984, *Sign System Studies*) Lotman drew on Vernadsky’s biogeochemical, planetary model of the biosphere and, in return, with the rise of ecocriticism, semioticians have attempted to claim their stakes by providing environmental approaches to texts and culture with a strong theoretical apparatus. It is not by chance that the major contributions to ecosemiotics have come out of the Tartu school. In short: environmental studies provided imagery and categories to develop the concept of the semiosphere (centers, membranes, metabolic exchanges of semiosis) and now it is semiotics’s turn to offer an approach to our understanding of the enmeshment of organisms in their environment and their mutual relations.

Briefly: what is ecosemiotics and where does it come from? I will now proceed to identifying points of origin, genealogies, theoretical and methodological strands that have led to it. I hope it will not be too brutal a summary!

The Tartu-Moscow School is of course a major root, if not *the* major root of ecosemiotics, providing concepts, definitions, and all the theoretical artillery—especially the semiosphere, with which we are all familiar, and modeling systems (Lotman, “The Place of Art Among Other Modeling Systems,” SSS 1967). Primary modeling system refers to natural language, and secondary modeling systems build upon the primary (they include art, religion, myth, etc). In the 1990s, as the environment gets more into the picture and less anthropocentric models are imagined and theorized, the Moscow-Tartu body of theory gets hybridized with the recuperation of other models from biology, zoology, and linguistics.

Jakob von Uexküll’s **Umwelt**, a concept from the mid-1940s, is one of them. Von Uexküll had promoted a gradual expansion of the field of semiotics from a human-centered field of inquiry out into biology. Umwelt is defined as “the specific way in which organisms of a particular species perceive and experience the world, shaped by the capabilities of their sensory organs and perceptual systems” (1946). In other words, there is a set of sign relations that an organism has in an ecosystem and this is comparable to a semiosphere, we would now say. Here is an example: in the Umwelt of a flower child, flowers are ornaments; in the Umwelt of a bee that is foraging, flowers are ideal access to food. Von Uexküll is the founder of biosemiotics, a field that has roots in Peircean semiotics as well as in the sciences. Organisms can remodel their Umwelt when they communicate with the outside. When at least two Umwelten communicate, in fact, they exist in the semiosphere.

The concept of Umwelt lies at the root of the concept of **zoosemiotics**, coined by (Hungarian-) American semiotician Thomas Sebeok (in 1965), who conducted studies in psycholinguistics and

animal communication. If Lotman claimed that language is a primary modeling system and culture is a secondary modeling system, Sebeok, instead, postulated 3 kinds of modeling: zoosemiotics, linguistic, and artistic. He regarded an organism's perception system as the primary modeling, linguistic modeling as the secondary modeling, and artistic modeling as the tertiary modeling. For the Tartu-Moscow school, the variety of sign systems used by humans are described as modeling systems. Thomas Sebeok, in contrast, has linked modeling to the concept of Umwelt. He sees the capacity to model structures or phenomena as a quality shared by all animals and distinguishes, in the case of humans, between the levels of zoosemiotic and linguistic modeling! This means that in addition to using the tools of language, humans also model the environment as biological beings, using their perceptual apparatus and physical faculties.

Semiotic threshold

Umberto Eco came up with this term (*Trattato di semiotica generale*, 1975) to define the boundary between the semiotic and non-semiotic world. As we know, the semiosphere can only communicate with the external non-sign space through the boundary. For anything in the non-semiotic world to become the semiosphere, it will have to pass through that boundary/filter which is language. According to Eco, the semiotic threshold is located on the boundary of culture. The semiotic threshold is permeable, like a membrane that selectively exchanges substances with the outside world, absorbing some of them and converting them into internal specific structures. As the founder of zoosemiotics, Thomas Sebeok disagreed with Eco and claimed instead that sign processes inform all life starting from the most primitive levels, therefore, the semiotic threshold is situated at the boundary of life

Cognizant of and conversing with these fields of semiotics centered on the biological and zoological realm (biosemiotics began developing fast only in the 1990s), and at a time when ecocriticism in literary studies was taking off, in 1998 Kalevi Kull and Winfried Nöth published their position articles on ecosemiotics in the same issue of *SSS*. Kull and his colleague semiotician from Tartu Timo Maran have been working in that direction ever since. I am drawing on two decades of articles here—from 1998 through 2016.

They consider ecocriticism too thematic and, as such, it could benefit from the conceptual tools that semiotics provides. In a 2014 article, Maran urges ecocriticism to expand its theoretical foundations and vocabulary in order to be able to analyze the environment in dialogue with literary theory as well as environmental crises and environmental research. Nature was not in the focus of investigation of the Tartu-Moscow school as in independent topic, he concedes. Yet, Tartu-Moscow school's concept of text can be applied to pattern originating from the natural environment. So, Kull and Maran highlight a gap there and update and extend the theory to address contemporary questions.

Kull and Maran suggested an expansion of concept of text as used in the Tartu-Moscow school, which they claim can be applied to patterns originating from the natural environment. All living beings and forces of nature possess agency, which has an impact on the creation of texts and manifests in the texts themselves. As we have seen, thanks to the work of von Uexküll / Sebeok, biosemiotics has expanded the scope of semiotics beyond the sign systems used by humans to include signifying processes in other animal species, in ecological relationships and in the

physiology of living organisms. Any analysis of the relations between literature and the environment rests on an understanding of the “structuredness” and semiotic nature of the physical environment, because for literature and the environment to stand in meaning relations, the environment itself must be meaningful or be conducive to the emergence of meaning.

Maran points out that the environment abounds with semiotic activity of many species-- footprints, sounds, smells, color signals, meaningful actions (the ground is understood as support by living organisms, a hollow in a tree acquires meaning as a hideout, etc). The environment exhibits patterns which support meaningful references and also displays an ability to actively influence the semiotic processes of human culture. And by the way, Lotman (Текст в тексте, T3C 1981) claimed: “literary works and other secondary modelling systems represent spaces for interaction between different codes and languages, which makes the text rich and playful and turns it into a semiotic space with great opportunities for meaning.”

So, what happens when Winfried Nöth, Kalevi Kull, and Timo Maran set classical, Tartu-Moscow semiotics in dialogue with other strands of semiotics that come from the sciences (or, merely, from other parts of the world!)? How do they make semiotics relevant to the study of the environment and human-environmental relations?

They have extended the domain of the semiosphere to incorporate all forms of communication: sounds, colors, shapes, electrical fields, thermal radiation, touch, and so on. Kull et al. seem to suggest that the diversity of the semiosphere probably goes beyond humans and incorporates both the semiotic activities of other species as well as semiotic potentials of inanimate nature. As

we know, there is no communication or language outside the semiosphere. The relation between internal and external space of the semiosphere is unstable, it is a dynamic process, with constant movement occurring through the semiotic threshold. The semiosphere is a set of all related Umwelten, as biosemiotics would put it.

Kalevi Kull's **different natures** (1998 article just mentioned).

Höth's definition of ecosemiotics emphasized humans, focusing on nature's significance to humans, communication between human and nature. Kalevi Kull proposed instead a view of different natures based on human influence. Zero nature refers to nature itself (i.e., absolute wilderness), untouched and unknown to humans, impossible to describe via scientific language. First nature is the nature as we see, identify, describe and interpret it. Second nature is the nature which we have already materially interpreted, a material nature, a changed nature, or a produced nature (gardens, for instance). Third nature is a virtual nature, as it exists in art and science. There is a logical relationship among four kinds of nature, and through combination, a creative process between nature and image emerges. Zero nature is from nature to nature, first nature is from nature to image, second nature is from image to nature (top down, that is), and third nature is from image to image.

Kull/Maran posit that the relationship between literary text and the environment can be described as modelling: literary works are models of the environment (or of the relationship between humans and the environment). As a model of human-nature relationships, the literary work preserves its comprehensive character by constructing a poetic whole through the means of expression provided by the entirety of codes and languages. But being at the same time a model

of the human-nature relationship, the literary work preserves its representational relationship with its object.

Kull and Maran contend that it may be counterproductive to approach the relationship between the text and the environment separately from the internal structure of the text, or to choose one and exclude the other. We should rather espouse a view that takes into account the semiotic potential of the writing under examination as well as of the environment itself. We also have to catch, police ourselves! The cycle of perception, interpretation and action which relates human culture to the environment has a tendency to shape the natural environment in the human image. To defuse this risk, it is important to include the level of artistic modeling, which encompasses the subject as one who reflects on and attributes value to the environment, expresses attitudes and judgements, and thereby constructs the relationship between humans and the environment.

Finally, I wanted to mention an interventionist call, an urgency to action that I found expressed in two books:

Sudan Petrilli and Augusto Ponzio, *Semiotics Unbounded: Interpretive Routes Through the Open Network of Signs* (U of Toronto Press, 2005)

Sign Crossroads in Global Perspective: Semioethics and Responsibility, edited by Susan Petrilli (2010).

Global communication has made the earth a biosemiotics sphere in which we humans, as the only semiotic animals that is able to reflect on sign activities, are ultimately responsible for other species and the entire ecological community. Without nature the sign has no place; without culture, the analysis of the sign is impossible, and human cognition will be confined in zero

nature and first nature, making it difficult to cross over to second nature and third nature. An invitation to step into a world of **ethical semiotics**.

A couple of **questions** that have been on my mind as I conduct my own work in ecocriticism and environmental studies.

Is classical semiotics amenable to expansions and revisions that allow to map sign processes and communication in the environment and the relations between humans with their cultural products and the environment of which they are part? Does it sustain this shift without falling apart?

Classical semiotics is inevitably anthropocentric and environmental studies, as well as ecocriticism, aim to acknowledge and possibly go beyond anthropocentrism. Are these new models going in that direction? Synergy with zoo- and bio-semiotics seems to me convincing.

How do we take into account of inanimate things' semiosis (Thing Theory, Object-Oriented Ontology)? Finally, as literary scholars today we have other approaches at our disposal when we study the enmeshment of human life and human activity in the environment—the extractive approach, the energetic approach, narrative theory—which work by way of metaphors or structure. Is ecosemiotics a good companion to these approaches? What is the place of ecosemiotics in this methodological landscape?