

On the biological concept of subjective significance: A link between the semiotics of nature and the semiotics of culture

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Abstract. A logical-philosophical approach to the meaning-carriers or meaning-processes is juxtaposed with the anthropological-biological concepts of subjective significance uniting both for the semiotics of culture and the semiotics of nature. It is assumed that certain objects, which are identifiable in the universe of man and in the world surrounding all living organisms as significant from the perspective of meaning-receivers, meaning-creators and meaning-utilizers, can be determined as signs when they represent other objects, perform certain tasks or satisfy certain needs of subjects. Hence, the meaning of signifying objects may be found in the relation between the expression of a signifier and (1) a signified content, or (2) a signified function, or (3) a signified value of the cultural and natural objects subsumed by the interpreting subjects under the semiotic ones.

For Thomas A. Sebeok

Within the framework of this paper, a logical-philosophical approach to the subject matter of linguistic semiotics is juxtaposed with an anthropocentric view of interpersonal communication.¹ My special atten-

¹ The concept of subjective significance was developed earlier in few publications (Wąsik 1987, 1997) — with special reference to language and culture. Theoretically popularized from the perspective of a meaning-utilizer in the outline of semiotic lectures (Wąsik 1998), it took into account mainly the contributions of J. von Uexküll (1982 [1940]) and T. von Uexküll (1982a, 1982b, 1981, 1984). This paper constitutes an elaborated version of a lecture presented to Honor Professor Thomas A. Sebeok, on 80 years — “From Fennougrian Studies to Biosemiotics” within the framework of the

tion goes, on the one hand, to instrumental functions of meaning-carriers and, on the other, to the utilitarian values of discourse practices of meaning-creators and meaning-utilizers in social interactions. Being engaged in subject-oriented investigations of axiological vs. praxeological semiotics conducted on the bordering zones between cultural sciences and linguistics, I have noticed that their roots should be traced in the essentialist and organicist functionalism originating in the epistemology of culture, sociology and biology (cf. Wąsik 1997: 347). Among the indirect influences on my study are Talcott Parsons' functionalistic theory of human action in a society (1949, 1951, cf. Parsons and Shils 1967[1951]) and Umberto Eco's (1979: 22–28) approach to culture as a collection of semiotic systems that fulfill communicative functions. However, the primary influences on the main topic — subject-related needs and the object-related values that mediate between the semiotics of culture and the semiotics of nature — are the Uexküllian (Jakob von Uexküll, 1864–1944) concept of “Umwelt” and his biological theory of “functional circles”.

However, the information base compiled for the tasks of my first studies on the semiotic paradigm of linguistics had to be extended against the background of recent trends that appeared in the non-linguistic sciences of sign and meaning. In the meantime, a new neuroscientific turn had emerged unifying the frameworks of scholars in the domain of biology, psychology and anthropology, philosophy and even arts around the philosophy of mind and consciousness (cf. Andrade 1999; Brier 1999, 2000; Emmeche 1999; Stjernfeld 1999). Getting rid of a dualistic distinction between body and mind, biologically inclined scientists started to speak in favor of a monistic notion of the “embodied mind” (cf. the works of Popper 1994; Emmeche 1992; Emmeche & Hoffmeyer 1991; Hoffmeyer & Emmeche 1991; Hoffmeyer 1996).²

Nordic-Baltic Summer Institute for Semiotic and Structural Studies in Imatra, Finland, June 12–21, 2000 (Wąsik 2000).

² It is important to notice the topic of the conference at Bennington College in Vermont in early November 1999, which focussed on the embodied mind and the Baldwin effect. Philosophers of biology, semioticians, brain/mind specialists, and communication theoreticians convened there to evaluate the relevance of the suggestion of James Mark Baldwin (cf. Baldwin 1896), concerning the idea of adaptive evolution according to which “the ability of individuals to learn can guide the evolutionary process” (Kull 2000: 46). See a detailed account of David Depew (2000: 7): “The general idea of the Baldwin effect is that learned behaviors can affect both the direction and the speed of evolutionary change. If an organism chances during its lifetime to acquire habits or exhibit behaviors which permit more effective interaction with its environment, [...] it will probably leave more offspring. If, moreover, by means of

Besides, exploring bridges between biological and cultural sciences within the framework of semiotics, researchers started to pay more attention to comparative studies of habits and behavior of humans and animals (Biltz 1981; Ingold 1989; Chebanov 1994; Kull 2000). Still other subjects have evoked the interest of the practitioners of semiotic sciences within the span of the last two decades: social behavior in animals, animal and human ecology, cross-cultural studies, agricultural ecology, environmental policy (e.g., Ingold 1992, 1999; Teherani-Krönner 1996; Kull 1998b; Nöth 1996, 1998; Coletta 1999), etc.

This investigative attitude, which prevails mostly in semiotic conferences today, is based on a conviction of contemporary philosophers (cf., e.g., Searle 1983, 1992) that human beings and higher animals, similarly as all other organisms, constitute parts of biological order of nature. Between human beings and the remaining constituents of the living world obtains certain continuity (cf. also Kull 2000). From that point of view such peculiar properties of these animals as the possession of a highly developed system of consciousness, intelligence and the faculty of an intentional use of language, the capability of performing enormously subtle perceptual distinctions, the aptitude of rational thinking, etc., are seen as biological phenomena. Besides, all these properties are considered as phenotypic features of an organism resulting from the interaction of the genotype and the environment (cf. Dawkins 1982). They are products of biological evolution in the same measure, as all other phenotypic features. Shortly speaking, the self-consciousness is regarded as a biological property of human brains and the brains of some higher developed species of animals. Biological processes cause the emergence of consciousness, which form a part of natural biological order similarly as the other biological phenomena are, such as photosynthesis, metabolism or mitosis, and the like (cf. Edelman 1987, 1989, 1992).

directed habituation, imitation, and other forms of learning it can pass that innovation along to offspring, relatives, and other organisms with which it is socially interactive, then descendants of such individuals or groups will on the whole do better reproductively in a given environment than individuals and groups not possessing the forms of habituation and learning in question. If protracted over transgenerational time, [...] this process will shift the phenotypic trait distribution in the population toward a preferred, but from the perspective of inherited factors, only permissible plasticity of behavior in the face of environmental change”.

Epistemological controversies over the object of semiotic studies

To begin, it is assumed that semiotics studies both the objects of culture and the objects of nature. As such, it has to be seen either as an interdisciplinary theory or a multidisciplinary science, composed of sub-disciplines in the form of those academically recognized disciplines that employ the concept of sign (and/or meaning) or of sign-processes as one of descriptive categories of their subject matter.

Arguments concerning the essence of semiotic objects belong to the epistemological sphere. From the perspective of their ontological modes of existence, they are specified either as a monolateral entity or a plurilateral unit comprised of interrelated constituents, or relations between those constituents. Further questions about the same refer to their material or spiritual (corporeal or intelligible, physical or mental), concrete or abstract, real or ideal forms of being, being examined subjectively or objectively in their extraorganismic or intraorganismic manifestations. In gnoseological domains, semiotic objects are approached either extra- or introspectively; as implicative, intentional, semantic, or conventional (arbitrary) phenomena; through individual tokens or general types, in the realm of man only; in the realm of all living systems, or in the universe of creatures, including the extraterrestrial and the divine.

An overview of semiotic thought reveals that concepts of the sign are expressed either in terms of (a) the unilateral sign in which sign-vehicle and referent are treated as separate entities, or (b) the bilateral sign, whose signifier and signified constitute a twofold psychical unity. Some linguists adhere to (c) the concept of the semantic triangle in which sign-vehicle, meaning (thought or notion), and referent form separate parts. Philosophers prefer to speak about the (d) trilateral sign where sign-vehicle, meaning (the *interpretant* generating one or more signs), and object of reference constitute a threefold unity. Separately noted are also the concepts of (e) the sign as a dyadic and (f) as a triadic relation. In all conceptions of signs and their objects of reference there exist four common elements, which constitute a semantic quadrangle: (I) an externalized *repraesentans*, (II) an internalized reflection of the *repraesentans*, (III) an externalized *repraesentatum*, and (IV) an internalized reflection of the *repraesentatum*.

It would be desirable for all conceptions of meaning to correspond proportionally to the particular understandings of sign. However,

some of definitions of sign result from a non-semiotic usage of the term “meaning”. In the domain of signification, one may sum up the choice of answers to the questions regarding the modes of sign existence and cognition. Practitioners of semiotics usually decide whether the meaning is (a) a process or a product, a token or a type. They ask eventually whether the meaning is (b) ideal or real, abstract or concrete, concluded or intentional, objective or subjective; whether it constitutes (c) a part or a whole, forming inherent or relational properties of the sign or its object of reference. Furthermore, semioticians draw semantic inferences from (d) observations of the effects that meaning has upon the feelings or reactions of its users. Another proposal deserves mentioning in this context, namely, that meaning is to be sought in (e) the interrelationships among signs, signs and their objects of reference, signs and their users, signs and their contexts of use, or among the users of the signs, etc.

One must remark, however, that the concepts of sign and meaning developed on the grounds of language-related sciences are not necessarily parallel to the concepts of sign and meaning elaborated in semiotics concerning cultural anthropology or the philosophy of biology. Linguistically oriented semioticians of culture usually place the signs in the plane of expression as types of texts standing for types of referents in the plane of content. The latter, being called an extra-textual or extra-semiotic reality, are often identified with meanings. Regarding the signs that stand for other things, one may point out to the occurrence of meta-designation, where one type of sign refers to other types of signs. Hence, it is possible to speak in a certain language about one language in particular as well as about other languages and other semiotic systems in general.

Thus, practitioners of semiotic sciences have to be aware of the fact that, apart from the logico-philosophical and linguistic conceptions, some theories of sign and meaning originate from the theory of culture or from the semiotic approach to nature. In this context, one should mention proposals in which the sign is regarded as a type of cultural object, where the meaning tends to be specified as a relational property attached to this object by a cultural subject (cf. Eco 1979: 22–29, 177; Pietraszko 1980; 1982: 139). In such conceptions, the emphasis is on the interpretative activity of man, who apprehends the cultural objects as significant (cf. Wąsik 1987: 124–131). First, when they fulfil certain functions with respect to his aims, goals or pur-

poses, or second, because they possess certain values for satisfying his needs, desires and/or expectations.

Culture as a system of signification and communication

In the introduction to his theory of semiotics, Umberto Eco (1979) takes for granted that culture, as a whole, should be investigated as a communicational phenomenon basing on systems of signification. Eco explains how meanings and their systems develop in human culture, in terms of the creation of tools and the exchange of commodities.

Eco departs from the assumption that there was no culture during the times of the first man, even when an *Australopithecus* transformed a stone into a tool for splitting the skull of a baboon. In his opinion (Eco 1979: 22), culture was born only when a human being: (I) determined the function of the stone, (II) started to call it “a stone that serves for something”, and (III) recognized it as “the stone that corresponds to the function F and that has the name Y ”. These three conditions result from a semiotic process, which may be illustrated as in Figure 1 (adapted from Eco 1979: 23).

One can assume, following Eco’s reasoning, that our *Australopithecus* after having encountered a certain stone *S-token 1* and having used it as a means for performing a certain function F , comes some days later upon a second stone *S-token 2*, which he recognizes as a representation of the same type. The ability of subsuming *S-token 2* along with *S-token 1* into an abstract model *S-type* standing for the same function F is a semiotic activity of ascribing meanings to encountered functional forms, i.e., *sign-vehicles*. In Eco’s depiction, a new semiotic dimension is added to this process of cultural meaning-creation when the possibility exists of giving a *Name* to that general type of object, i.e., the stone as a tool. The name denotes the stone-type as its meaning and connotes that function F which is performed by particular stone-tokens as signifiers. Communication can only occur in dyads, when there are at least two persons. Nevertheless, in the case of an individual, thanks to the exchangeability of sender-and-receiver roles, the cultural object may also become the content of potential intra-personal communication. Whoever uses the object called *S-token 1* for the first time must consider how to transfer the new acquired meaning, a new type of information that it stands for F , to the next day. Thus, a name given to it seems to be an appropriately elaborated mnemonic device, which mediates between

cultural objects and their possible functions. The transmission of knowledge from an individual of today to the same individual of tomorrow and to other individuals of the same human kind contributes to the fact that, within a society, every function of an object becomes transformed into the sign of its virtual use.

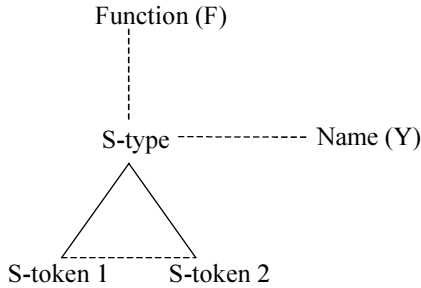


Figure 1. The stone as a tool which has a function and a name in the semiotics of culture

In a similar way, Eco (1979: 24–26) applies semiotic concepts to the analysis of the economic relationships that rule the exchange of commodities, on the assumption that the utility value of goods becomes transformed into their market value. As he assumes, the same cultural objects, which are discussed as functional types in Figure 1, may be considered as commodities *C-token 1* and *C-token 2* in accordance with their exchange value *EV* (a process shown in Figure 2, adapted from Eco 1979: 25).

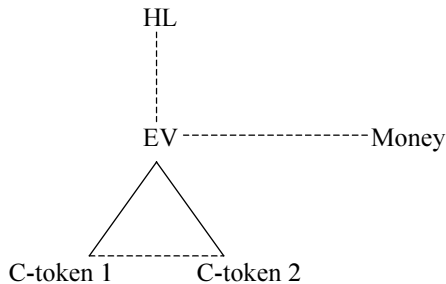


Figure 2. The signifying relationship between human labor, money and the exchange value of commodities

The economic relationship between two commodities (belonging at the same time to two different types) becomes significant in nature when their value is expressed within the same exchange parameter elaborated in a particular culture. Basing on the distinction made by Karl Marx in *Das Kapital* this parameter may refer back to human labor *HL* as being indispensable to for the production of both *C-token 1* and *C-token 2*. All commodities can be correlated by the more sophisticated cultural device of *Money*, another type of commodity, which functions as a universal sign of *EV* expressed in quantities. As Eco (1979: 25–26) states, “the only difference between a coin (as sign-vehicle) and a word is that the word can be produced without economic effort, while a coin is an irreproducible item (which shares some of the characters of its commodity object)”.

The objects, stones and commodities, illustrated schematically in Figures 1 and 2 (following Eco’s reasoning) were analyzed only with respect to their singular function. In fact, within the global systems of culture, i.e., the representation of culture in its totality, one should take into account every possible function of a given object, its every possible semantic content, its every meaning, thus registering every kind of functional synonymy and homonymy. According to Eco, every cultural aspect should be considered as a separate semantic entity. Thus, one could conclude that the systems of cultural signification should be analyzed in the same way as linguistic entities, units and constructions, i.e., in terms of organized structures, semantic fields. Underlying both are rules that are established for the structures of sign-vehicles in their multidimensional semantic analysis.

Eco (1979: 26–28) illustrates multidimensionality of semantic analyses of cultural objects with the example of “automobile”. It is, as he points out, not only as a semantic entity, which can be examined as connected with the sign-vehicle, e.g., /automobile/ in English. “Automobile” becomes a full semantic unit having many aspects when it is placed on the axis of oppositions and relations with other units. It can be opposed to “carriage” or “bicycle” or “feet”, when one distinguishes between different kinds of transportation, e.g., “by car” vs. “on foot”, etc. “Automobile”, as such, can be analyzed from different perspectives or considered on differed levels, physical, mechanical, economic, social or linguistic-semantic, etc. Semiotics is interested in such levels, on which the car is treated as a sign-vehicle of certain values, e.g., exchange value, utility value, symbolic value when they designate the social status, the prestige of its owner, when they co-determine the comfort, speed of ride, etc. Similarly, as in verbal com-

munication where the sign-vehicle of the type /automobile/ can become the meaning of another sign-vehicle of the type /car/, the exchange value of one cultural good can become the meaning of other goods that are also in the code of cultural semiotics.

Towards the idea of an axiosemiotic sphere of culture

In addition to the depiction of culture as a class of rules generating the sphere of so-called cultural texts with their significative and communicative functions, one can also mention distinctions that expose the importance of two orders in the system of culture, the semiotic and the axiotic. To this kind of study belongs Stanisław Pietraszko's (1982: 139) interpretation of culture as a system of axiosemiotic regularities obtaining between the values and meanings that condition and determine the modes of human life, and that become realized (materialized) in the sphere of products and the behaviours of people.

Pietraszko regards the axiosemiotic activity of man as a simultaneous ascription of new values and meanings to objects hitherto known as cultural or natural. In his view, the ascription of new values to objects by the subjects of culture is connected with the creation of new things in the epistemological sense and transferring them to another class of reality. Accordingly, in the case of an acquisition of new meanings, a new value-related situation takes place in their relation to cultural subjects. However, this "axiosemiotic nomination" of things, which results in the transfer of things, as products and behaviors of people, to the realm of cultural objects, is not necessarily connected with their usefulness. An object can possess, apart from its functionality, an axiological significance that is given to it through the ascription of a certain value. The evaluative aspect of an object can even replace its functionality, as in the case of an old wooden spoon, which formerly served village peasants as a utensil, but now hangs in a folklore museum. The same refers, e.g., to the conceptualized exposition of a simple chair in the museum of history. In both cases, the ascription of new values is accompanied by a change of meaning. That is, an axiotic act is at the same time accompanied by a semiotic act, in which a cultural object enters into a new relation with the subject of culture (cf. Wąsik 1987: 130–131).

Viewing semiotic approaches to culture from functional and axiological perspectives, one can see the necessity of finding a superior

frame of reference. It appears that the ascription of meaning to objects having certain functions or values is not only a procedure that might be regarded as characteristic of human subjects. The semiotics of culture may be also discussed using the same type of distinctions as the semiotics of nature, in accordance with the proposals of biosemioticians who turn their attention to the so-called *Umwelt-Forschung*³ to find the biological “a priori of man” (cf. Pobjewska 1993, 1995, 1996).

Biosemiotism as an investigative perspective

Biosemiotism is an investigative attitude of those semioticians who base on the biological concept of meaning elaborated by Jakob von Uexküll (1982 [1940]; cf. Wąsik 1987: 131). This concept has been made popular by Thomas A. Sebeok (1974; cf. also 1989 [1979]), and developed by Thure von Uexküll (cf. 1970, 1979a, 1979b, 1982a 1982b, 1984, 1987, 1990, 1992, 1993). To its further extensions has contributed also Martin Krampen (1981, 1992; cf. Anderson *et al.*

³ Jakob von Uexküll investigated how living organisms perceive their environment and how this perception determines their behaviour. He called his investigative method *Umwelt-Forschung*. In 1926, he founded the *Institut für Umweltforschung* at the University in Hamburg. The term “Umwelt”, in the sense of the subjective world of an organism, was coined in his book of 1909, *Umwelt and Innenwelt der Tiere*, and the idea of functional circles (Germ. *Funktionskreise*, which lately used to be translated into English as “functional cycles”) Uexküll added in the 2nd edition of it in 1921. As Kull points out (1999: 390), “in his article of 1907 he still uses the term *Milieu*, as different from *Außenwelt*”. Worthy of mentioning is here the term *die Eigenwelt des Menschen* proposed by Hans Petersen (1937). Interesting is the comparison of *Umwelten* to “soap bubbles” (T. v. Uexküll 1982: 3) in the context of “environmental pipes” (*Umweltröhren*) introduced by J. v. Uexküll (cf. 1928: 70, 108). The first one refers to the environment of a living organism at a given moment as a circle (*Funktionskreis*), and the latter is meant to illustrate the sequence of all environmental circles that the individual has to pass throughout his whole life understood as a determined journey. (Research into this topic may be found in Barry Smith, “Social Objects” and Patrick Horvath, “Jakob von Uexküll: Von Mückensonnen und Umweltröhren”, under the address of the Jakob von Uexküll Centre, Estonia: www.zbi.ee/~uexkull.) The investigative method of pursuing and reconstructing this journey through invisible worlds is illustrated in Uexküll & Kriszat 1970 (translation in Uexküll 1992) and Uexküll 1936. A separate source of discussions is the notion of “semiotic niche” vs. “ecological niche” in the context of the distinction between the scopes of biosemiotics and ecosemiotics (cf. Hoffmeyer 1986: 59; Kull 1998b: 350; 1998b; Brier 2000: 70). As for the notion of “ecological niche” in the works of Popper (1994) see also Mirka (2000: 100).

1984; Danesi 2000). The foundations of biosemiotics may be described as follows (for details on the roots of the whole field of study and related terms see Kull 1998a, 1999; Kawade 1991; Hoffmeyer 1997). All living systems take part in the process of creating and utilizing meanings; even the simplest forms of life, the unicellular systems, have the ability to respond to external impulses through species-specific reactions characteristic of each individual being. All living organisms, from this point of view, are to be treated as autonomous, while non-living entities, including our products, commodities and machines, must remain heteronomous (cf. T. v. Uexküll 1982b: 7).

Plants and animals share the capacity to sort stimuli, encoding them as signs. Self-regulating processes, called homeostasis, play an important role in their individual development, which ends in death. Living systems tend to maintain their internal stability through interactions with the environment, owing to the coordinated response of their parts to any situation or stimulus that might disturb their normal condition or function. Thus, from a biological perspective: “A sign is something that signifies to the activity of a living system something that has significance for the maintenance of the structure, the homeostasis of this system (its system needs)” (T. v. Uexküll 1984: 188).⁴

The structure of semiotic processes looks different in the realm of plants, described by phytosemiotics, from the way it looks in the realm of animals, which belongs to the descriptive domain of zoosemiotics. In comparison to animals, plants do not have a nervous system for processing the signifiers and they have no specialized effectors for acting on something that is signified. Hence, the structure of phytosemiotic processes should be described, as T. von Uexküll (1984: 188f.) points out, in terms of cybernetic relations. In accordance with those relations, a change in the homeostasis of the system, caused by its environment or its own metabolism, which deviates from the reference value, means for the system a need for activity to restore the substances necessary to maintain its homeostasis. In the realm of zoosemiotics, living systems have specialized receptors for receiving signs, a nervous system, that processes them, and specialized effec-

⁴ Cf. also the respective explanation of T. von Uexküll (1984: 188): “In order to realize my purpose of translating Peirce’s formula into a concept of biological relationship, I shall have to consider two factors: (1) When a living system is the ‘somebody’, the subject, for whom signs and their significates have a meaning, it is materially an open system [...]. It retains its structure, its homeostasis, in open exchange with its environment. (2) Living systems are active system. They maintain their homeostasis by their own activity”.

tors, which exert an influence upon something that is signified. Hence, within the functional circle of animals, “a perceptual sign (e.g., a smell of food)” can be defined as “something that signifies to the living system the need for an activity — its behavior — that has significance for its hunger-needs (e.g., obtaining a food object)” (T. v. Uexküll 1984: 189).

According to T. von Uexküll (1984), the organisms of animals possess such a level of complexity that simple phytosemiotic sign-processes are included in the zoosemiotic ones. This means that when a food object appears within subjective universes of animals, it only creates the conditions for phytosemiotic processes within their bodies. The grasping and eating of a food object create in the gastrointestinal tract the conditions for the activation of the phytosemiotic processes that signify to the intestinal cells that they must absorb the needed substances. The object “food” contains carbohydrates, fats, and proteins — the signified “something” for these phytosemiotic signs.

In discussing the biosemiotic conception of meaning in its relation to the anthroposemiotic theory of culture, we restrict our interest to the so-called *Umwelttheorie* of J. von Uexküll, in the light of which certain objects can be said to possess an “ego quality” (*Ich-Ton*). In this subject-oriented theory (being studied also by philosophers of medicine in the context of vitalism, cf., e.g., Szewczyk 1963), the understanding of what the meaning is, the role of a meaning-receiver and/or meaning-utilizer, receives primary attention. Accordingly, the sign is described as something that has a meaning for someone because of something. Certain objects in the environment of subjects become carriers of meaning when they contribute to the satisfaction of the subjects’ needs, claims T. von Uexküll (1984: 188) in his analysis of *Bedeutungslehre* by J. von Uexküll. They can be meaning-carriers for the fulfillment of subject-related needs because they possess the qualities which are significant for the subjects, as, e.g., “drinking-quality” (*Trink-Ton*), “eating-quality” (*Fress-Ton*), “sitting-quality” (*Sitz-Ton*), “obstacle-quality” (*Hindernis-Ton*), “climbing quality” (*Kletter-Ton*), etc. (cf. J. v. Uexküll 1982: 28 ff.).

In order to draw together the biosemiotic concepts of sign and meaning it is worthwhile to consider some examples provided by J. von Uexküll. As the first one, consider the use of a stone in the following situation: “Let us suppose that an angry dog barks at me on a country road. In order to drive it off, I pick up a stone and frighten it off with an adept throw. Nobody who observes this process and after-

wards picks up the stone would doubt that it was the same object 'stone', which first lay on the road and then was thrown at the dog."

As J. von Uexküll (1982: 27) points out, analyzing this situation, the physical and chemical properties of the stone have remained the same but the object itself has been transformed into another kind of object, because it has changed its meaning. As long as it was part of the country road, the stone served as support for the walker's feet. Its meaning was connected with what might be called a "path-quality" (*Weg-Ton*). When the stone was picked up by someone attempting to throw it at the dog, a new meaning was imprinted upon it, namely a "throw-quality" (*Wurf-Ton*). This change of meaning became possible as soon as the stone, formerly a neutral object, entered into a relationship with a subject. Thus, the neutral object becomes transformed into a meaning-carrier when a subject imprints a meaning upon it.

J. von Uexküll (1982: 28–29) clarifies in two further examples the influence that the transformation of meaning exercises on the properties of objects appearing in the *Umwelt* of subjects. He notices that what happens to be neutral objects in the subjective universe of dogs can possess certain meanings for people, thanks to the properties which can be utilized as meaningful qualities under certain circumstances. For example, for the dog, as a house-occupant, many things in the kitchen have only a sitting-quality, a climbing quality, or perhaps only an obstacle-quality — especially chairs and cupboards, which may contain books or washing. All the small household effects, such as spoons, forks, matches, and the like, do not exist in the world of a dog because they are not meaning-carriers. However, a great number of things will exist for the dog as far as they have an eating-quality or a drinking quality (J. v. Uexküll 1982: 29).

Another example used by J. von Uexküll (1940) to explain his understanding of meaning is the blooming meadow (cf. J. v. Uexküll 1982: 29ff.). In his interpretation, even for different subjects who are in it, the meadow is not the same. One can take, for example, the role of the stem in a blooming meadow-flower, which functions as the meaning-carrier in four kinds of subjective universes:

- (1) In the *Umwelt* of a girl picking flowers, who gathers herself a bunch of colorful flowers that she uses to adorn her bodice;
- (2) In the *Umwelt* of an ant, which uses the regular design of the stem surface as the ideal path in order to reach its food-area in the flower petals;

- (3) In the Umwelt of a cicada-larva, which bores into the sap-path of the stem and uses it to extract the sap in order to construct the liquid walls of its airy house;
- (4) In the Umwelt of a cow, which grasps the stems and the flowers in order to push them into its wide mouth and utilizes them as fodder. (J. v. Uexküll 1982)

Each Umwelt, in J. von Uexküll's (1982: 30) interpretation, forms a closed unit in itself, which is governed by the meaning it has for a particular subject separately. Although the meaning-carriers remain identical in their structures, their contents are different for different subjects. For example:

The color of the blossom serves as an optical perceptual cue in the girl's Umwelt, the ridged surface of the stem as a feeling perceptual cue in the Umwelt of the ant. The extraction point presumably makes itself known to the cicada as a smell perceptual cue. The effector cues are mostly imprinted upon other properties of the meaning-carrier by the subject. The thinnest point of the stem is torn apart by the girl as she picks the flower. The unevenness of the stem's surface serves the ant both as a touch perceptual cue for its feelers and as an effector cue-carrier for its feet. The suitable extraction-point that is made known by its smell is pierced by the cicada, and the sap that flows out serves as building material for its house of air. The taste perceptual cue of the stem causes the grazing cow to take more and more stems into its chewing mouth. (J. v. Uexküll 1982: 31)

To sum up, one could state that every action that consists of perception and operation imprints its meaning on the meaningless object and thereby makes it into a subject-related meaning-carrier in the respective subjective universe. That is, following Uexküll's reasoning, "the picking of the flower transforms it into an ornamental object in the girl's world. Walking along the stem changes the stem into a path in the ant's world, and when the cicada-larva pierces the stem, it is transformed into a source for building material. By grazing, the cow transforms the flower stem into wholesome fodder" (J. v. Uexküll 1982: 31).

In the analyzed Umwelten, the flower stem, acting as a meaning-carrier, was in each instance confronted with a new meaning-receiver that could also be described as a meaning-utilizer. The four meaning-utilizers — the girl, the ant, the cicada larva, and the cow — used the flower stem as decoration, as path, as supplier of material for the building of a house, and as food, respectively (cf. J. v. Uexküll 1982: 59).

To the selected subjects, for which the stem is the carrier of meaning, one should add the whole plant. The stem is part of the plant.

Thus, the whole plant should be treated as its subject. However, the whole plant cannot be considered as a meaning-utilizer when forced to receive the meaning of other subjects, which is not in its own interest. The meaning of the flower stem within the plant is its place in the homeostasis of the organism as system, but the plant as a subject finds itself in relation to other utilizers of its stem in a position of “tolerance of meaning” (*Bedeutungsverduldung*). This position can be inconvenient for the plant in different measures, e.g., when it is picked, torn to pieces, perforated or chewed by another subject. In nature, we encounter many situations of that kind, when subjects and their parts become meaningful objects for other subjects, when they find themselves within “functional circles” (*Funktionskreise*) of medium, food, enemy and sex (cf. J. v. Uexküll 1982: 59f., especially 71; see also T. v. Uexküll 1982: 83–87, Glossary).

Function-and-purpose vs. value-and-need approaches to culture

Considered against the background of anthropological and biological conceptions of meaning, the problems of function or value of significant objects, on one hand, and the problems of needs or purposes of living subjects, on the other, appear to constitute a link between the semiotics of culture and nature. In the realm of man, however, there is no contradiction between a praxeological, i.e., function-and-purpose-oriented approach to language and culture and an axiological, value-and-need-oriented approach to the same. They represent complementary perspectives on the same objects of culture treated either as instruments or as goods in relation to functions or values (modified after Wąsik 1997: 348, and 1998: 58).

As illustrated in Figure 3, specific terms have been defined as follows: *O* = object of culture, a perceivable thing or event in a ‘praxeosemiotik’ or an ‘axiosemiotik’ sphere of culture; *U* = user (meaning-creator, meaning-receiver & meaning-utilizer), a subject of culture, i.e., a living system with an ego-quality who subsumes and utilizes objects of culture as *PS* or *AS*; *PS* = ‘praxeosignificate’, a functional and meaningful object of culture treated both as a tool and as a sign; *AS* = ‘axiosignificate’, a valuable and meaningful object of culture, treated both as a good and as a sign; *Tool* = an object of culture performing a function for the fulfillment of a subjective purpose of *U*;

Good = an object of culture possessing a value for the satisfaction of a subjective need of *U*; *Sign* = an object of culture having meaning for the subject of culture because of something; *Meaning* = significance of *O* for *U*; *Function* = a role played by a tool while serving a purpose intended by *U*; *Value* = a relational property of a cultural object that satisfies a subjective need; *Purpose* = a goal intended to be attained (to be fulfilled) which means, for the activity of a cultural object, an impulse to utilize a tool to perform a serviceable function; *Need* = a systemic lack which means, for the activity of a cultural subject, an impulse to satisfy a disturbed equilibrium in his or her biological urges and/or socio-psychological wants; *Utilization* = fulfilment of a subjective purpose by serving as a tool or the satisfaction of a subjective need by acquiring a value of cultural good; *Subsumption* = the identification of token 1 with token 2 as belonging to a general type.

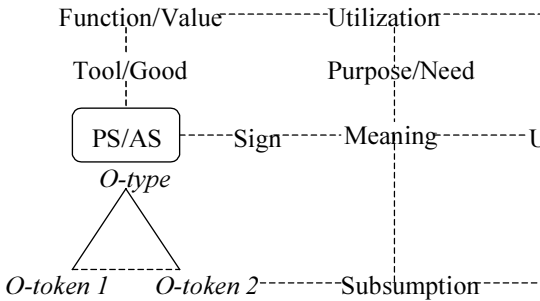


Figure 3. The sign as a tool or a good in a ‘praxeosemiotic’ and/or ‘axiosemiotic’ sphere of culture

Both the instrumental and the axiological formulations of sign and meaning, relevant for the explanation of the semiotic character of culture, reveal only an aspectual difference as concerns functions and values of cultural objects in the context of needs and purposes of cultural subjects. From the viewpoint of function, one may investigate all semiotic systems of culture according to the serviceable role they play in satisfying the communicational needs of the subjects of culture. In the value-oriented approach, however, one aims at classifying of all the subjective needs of human beings, in trying to discover how they

are satisfied by means of selected semiotic systems, or what kind of respective needs may be satisfied by what kind of semiotics.

Verbal means as signs of human needs

As an analytic example, in which an axiosemiotic view of cultural objects is discussed against the background of praxeosemiotic concepts of sign and meaning, we take language utterances studied in the context of communicative events (cf. Wąsik 1997). The acceptance of the concept of culture as a system of significative tools fulfilling certain functions in the realm of human communication presupposes in language sciences the analysis of verbal means according to their respective functions or respective purposes (communicative goals) achieved by interlocutors. Apart from the semantic function, which is explainable through the direct reference of textual elements to their extratextual reality in terms of “locutionary meaning”, the practitioners of language sciences also study pragmatic functions of utterances that occur in indirect speech acts. Studying language utterances from the viewpoint of their “illocutionary forces”, one may consider, among others, Geoffrey Leech’s (1990: 104–105) classifications, which concentrate on the strategy of means-ends analyses “according to how they relate to the social goal of establishing and maintaining comity”:

- (A) Competitive functions: ordering, asking, demanding, begging;
- (B) Convivial functions: offering, inviting, greeting, thanking, congratulating;
- (C) Collaborative functions: asserting, reporting, announcing, instructing;
- (D) Conflictive functions: threatening, accusing, cursing, reprimanding, etc.

Another view of linguistic pragmatics results from the proposal, e.g., of Wiesław Awdziejew (1987: *passim*), who has distinguished three types of illocutionary functions of language utterances:

- (E) Modal functions: certainty assumptions, modal vagueness, doubt;
- (F) Emotive functions: dissatisfaction, satisfaction, disappointment, appreciation, condemnation, self praise, praise, boasting, criticism, compliment, flattering, sympathy, admonition, reprimand, excuse, envy, accusation, jealousy, dispraise;

- (G) Active functions: proposal, obligation, advice, warning, request, invitation, rejection, hesitation, command, threat, recommendation, suggestion, etc.

In an instrumentalist approach to verbal means of communication, the practitioner of semiotics may apply, among others, the methodological apparatus of pragmatic linguistics and sociological pragmatics. Appropriately, one may search for the functions of utterances and/or the purpose and communicative strategies that interlocutors choose for a given speech act or communicative event, e.g., to inform, to ask, to flatter, to insult, or to mock the other person.

However, as concerns the inclusion of language utterances in the axiosemiotic sphere of culture, representatives of semiotic disciplines may treat them as tokens of cultural goods. Their studies may aim at distinguishing those needs of people that are satisfied by verbal means and exchanged in the interpersonal communication (cf. Parsons and Shils 1967; see also Ross 1985). Semioticians may also be interested in searching for values that the verbal means in question express as against the nonverbal means of human communication. For example, linguistically inclined semioticians may pose questions as to the dispositional values of language utterances expressed through different channels of communication.

Asking what kind of needs can be satisfied by verbal means that the communicating individuals use in indirect speech acts, the practitioner of semiotic sciences may distinguish among the objects of investigation, for example:

(1) Boasting — where the linguistic expressions of individuals are evaluated as realizations of their needs for dominance, for exhibition, or for sharing things with others; e.g., senders' utterances can be treated as signs of needs for esteem, the need to be noticed, recognized, etc.

(2) Offering, inviting — as exponents of the need for deference, to conform to customs, the need for abasement, the desire to admit blame in order not to be rejected, etc.

(3) Apologizing — as expressions of the need for deference, to conform to customs, for abasement, the desire to admit blame in order not to be rejected, etc.

(4) Praising and complementing — as signals appealing to the needs of others, the need for affection and approval, expressing the need for deference, or the indiscriminate need to please others, etc.

(5) Criticizing, blaming — in short, the need for aggression, for power, for dominance, the need to have control over others, the need for intraception, i.e., to understand and analyze others, their behavior, the object they possessed, etc.

(6) Joking — the need for inclusion in a social group, the need for exhibition, e.g., to show off one's wit, etc.

(7) Greeting — the need to nurture, to be sympathetic to others, to show affection, the need for affiliation, the desire to belong to a chosen group of people. By greeting others individuals usually express their need to be accepted by them and/or to feel strong attachment with them, and sometimes the need for exhibition, the desire to be noticed and recognized, etc.

Our sample analyses have shown that the meaning of verbal means may be investigated not only from the perspective of their functions but also their values. And since the semiotics of communication investigates not only monosemous signs in use, but also analyzes the contexts in which they appear as polysemous entities, one should bear in mind that verbal means can not only have many functions but also many values, both as instruments of communication and as cultural goods. In order to study verbal means within the framework of axio-semiotics, one has to extend the interest sphere of linguistics proper into the realm of the sciences of language that border on sociology, psychology, and the theory of culture.

Concluding remarks

To sum up, one could state that in the world surrounding people and in the subjective universe surrounding other living organisms, objects can occur as neutral or as potential carriers of meaning. As such, they have to be subsumed under categories of semiotic objects with respect to the possession of properties that enable them to substitute (stand for) other objects, to be utilized for performing certain tasks or to satisfy certain needs of given subjects. Hence, the meaning of signifying objects can be derived either from the relation between the expression of a signifier and (1) a signified content, or (2) a signified function, or (3) a signified value of the cultural and natural objects subsumed by the interpreting subjects under the semiotic ones.

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О биологическом понятии субъективной значимости: связь между семиотикой природы и семиотикой культуры

В рамках данной работы логико-философский подход к носителям или процессам значений соположен с антрополого-биологическими понятиями субъективной значимости, общими для семиотики культуры и семиотики природы. Предполагается, что определенные объекты, идентифицируемые в человеческом универсуме и в мире, окружающем все живые организмы, как значимые для получателей, создателей и пользователей значений, могут определяться как знаки, когда они репрезентируют другие объекты, выполняют определенные задачи или удовлетворяют определенные нужды субъектов. Следовательно значение обозначающих объектов может быть найдено в отношении выражения означающего или 1) к означенному содержанию, или 2) к означенной функции, или 3) к означенной ценности культурных и естественных объектов, которые интерпретирующий субъект определяет как семиотические.

Subjektiiivse tähenduslikkuse bioloogilisest mõistest: seos looduse- ja kultuurisemiootika vahel

Antud töö raames on loogilis-filosoofiline lähenemine tähendusekandjatele või tähendusprotsessidele suhestatud subjektiiivse tähenduslikkuse antropo-bioloogiliste mõistetega, mis on ühised nii kultuuri- kui ka loodusesemiootika jaoks. Eeldatakse, et teatud inimilmas ja kõiki elusolendeid ümbritsevas maailmas tähenduste saajate, loojate ja kasutajate poolt tähenduslikena tuvastatavaid objekte võib määratleda märkidena, kui nad representeerivad teisi objekte, täidavad teatud ülesandeid või rahuldavad subjektide teatud vajadusi. Seega võib tähendustatud objektide tähendust leida tähistaja väljenduse suhte kaudu interpreteeriva subjekti poolt semiootilisena määratletud kultuuri- ja looduslike objektide 1) tähistatud sisusse, või 2) tähistatud funktsiooni, või 3) tähistatud väärtusesse.