

How global is global semiosis? Going beyond Sebeok's paradox

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Among the several senses given to the phrase "global semiotics" by Thomas Sebeok (2001) is the application of semiotic concepts to everything endowed with life, as in the "major tradition", including Peirce and contemporary biosemiotics (phytosemiosis, mycosemiosis, zoosemiosis, endosemiosis, etc.), as opposed to "minor tradition" which comprehends Saussure and his followers, and which "localizes" meaning to human and, in particular, social, endeavours. In contrast, meaning, according to the "major tradition", is "language-free". Somewhat paradoxically, Sebeok has always also insisted (consistent in this respect with the "language-sensitiveness" of the "minor tradition") that human language is one of a kind, in no way comparable to any "non verbal communication system" used even by higher animals, such as enculturated apes, whose abilities really constitute, in his view, some kind of "Clever Hans phenomenon". There are good reasons for accepting (somewhat modified versions of) both these postulates; therefore, some mediatory framework between the global meaning of meaning and linguistic meaning must be constructed.

1. The evolution of semiotic resources

Contemporary studies of evolution suggest that not only human language, but also the capacity for using pictures, as well as many kinds of mimetic acts and indices, are (at least in their full, spontaneously developed form) uniquely human. Also in child development, semiotic capacity clearly goes through a number of stages. It is clear that semiosis itself must be manifold and hierarchically structured, in ways not yet dreamt of in our philosophy. Merlin Donald (1991; 2001) has proposed an evolutionary scale, where the stages of episodic, mimetic, mythic and theoretic culture correspond to types of memory (Fig. 1.). According to this conception, many mammals, which otherwise live in the immediate present, are already capable of *episodic* memory, which amounts to the representation of events in terms of their moment and place of occurrence. The first

transition, which antedates language and remains intact at its loss (and which Donald identifies with *homo erectus* and wants to reserve for human beings alone) brings about *mimetic* memory, which corresponds to such abilities as tool use, miming, imitation, co-ordinated hunting, a complex social structure and simple rituals.

FIGURE 1 HERE

Figure 1. Donald's model of evolution related to the notion of sign function

Only the second transition brings about language (which, Donald muses, may at first have been gestural) with its *semantic* memory, that is, a repertory of units, which can be combined. This kind of memory permits the creation of narratives, that is, mythologies, and thus a completely new way of representing reality. Interestingly, however, Donald does not think development stops there, although there are no more biological differences between human beings and other animals to take account of. However, the third transition obviously would not have been possible without the attainment of the three earlier stages. What Donald calls *theoretical* culture supposes the existence of external memory, that is, devices permitting the conservation and communication of knowledge independently of human beings. The first apparition of theoretical culture coincides with the invention of drawing. For the first time, knowledge may be stored externally to the organism. The bias having been shifted to visual perception, language is next transferred to writing. It is this possibility of conserving information externally to the organism that later gives rise to science

The diverse manifestations of Donald's second stage, mime, skill, imitation and gesture are, in my view, (at least in part) iconic (based on similarity) – but for the most part they are *tokens* conforming to a *type* - members of a category -, not signs. Somewhere in between mimesis and language the semiotic function arises (though Donald notes this only obliquely, mentioning the use of intentional systems of communication and the distinction of the referent). In fact, this certainly happens between animal camouflage and pictures. Yet, according to Deacon (1997: 74ff), iconicity as found in “a portrait” is “not basically different” from the fact of there being no distinction, the perception of the same “stuff” over and over again, camouflage as in the case of the moth's wings

being seen by the bird as “just more tree”, recognition, that is, the identification of a category, or “stimulus generalisation”. This may be true at some level, but it is not useful for determining either the systematic or the developmental properties of different semiotic resources. Although all or most abilities subsumed under the mimetic stage depend on iconic relations, only some of them are signs, because they do not involve any asymmetric relation between an expression and the content for which it stands.

2. The meaning of meaning revisited: Reading Peirce with Piaget

According to Piaget (1945; 1967; 1970), the semiotic function is a capacity acquired by the child at an age of around 18 to 24 months, which enables him or her to imitate something or somebody outside the direct presence of the model, to use language, make drawings, play “symbolically”, and have access to mental imagery and memory. The common factor underlying all these phenomena, according to Piaget, is the ability to represent reality by means of a signifier, which is distinct from the signified. In several of the passages in which he makes use of this notion of semiotic function, Piaget goes on to point out that “indices” and “signals” are possible long before the age of 18 months, but only because they do not suppose any differentiation between expression and content. The signifier of the index, Piaget says, is “an objective aspect of the signified”; thus, for instance, the visible extremity of an object which is almost entirely hidden from view is the signifier of the entire object for the baby, just as the tracks in the snow stand for the prey to the hunter. But when the child uses a pebble to signify candy, he is well aware of the difference between them, which implies, as Piaget tells us, “a differentiation, from the subject’s own point of view, between the signifier and the signified”.

Piaget is quite right in distinguishing the manifestation of the semiotic function from other ways of “connecting significations”, to employ his own terms. However, the distinction between the *subjective and objective points of view* seems to get lost when Piaget turns to examples (cf. Sonesson 1992a, b). We can, however, imagine this same child that in Piaget’s example uses a pebble to stand for a piece of candy having recourse instead to a feather in order to represent a bird,

or employ a pebble to stand for a rock, without therefore confusing the part and the whole: then the child would be employing a feature, which is objectively a part of the bird, or the rock, while differentiating the former from the latter from his point of view. Only then would he be using an index, in the sense of an indexical sign.

The hunter, on the other hand, who identifies the animal by means of the tracks, and then employs them to find out which direction the animal has taken, and who does this in order to catch the animal, does not, in his construal of the sign, confuse the tracks with the animal itself, in which case he would be satisfied with the former. Both the child in our example and the hunter are using indices, or indexical signs, where the “real” connection is transformed into a differentiation in the sign. On the other hand, the child and the adult fail to differentiate the object and the perceptual adumbration in which they have access to the it; indeed, they identify them, at least until they change their perspective on the object by approaching it from another vantage point. And at least the adult will consider a branch jutting out behind a wall as something that is non-differentiated from the tree, in the sense of being a proper part of it.

Contiguity and factorality are present everywhere in the perceptual world without as yet forming signs: we will say, in that case, that they are mere *indexicalities*. Each time two objects are perceived together in space, there is contiguity; and each time something is seen to be a part of something else, or to be a whole made up of many parts, there is factorality. Two items present together only become a sign, however, to the extent that one of them, identified as the expression, is directly perceived but not in focus, and the other one, the content, is indirectly perceived while at the same time being the focus of the relation (cf. Husserl 1939; Luckman 1980). An index, then, must be understood as indexicality (an indexical relation or ground) plus the sign function. Analogously, the perception of similarities (which is an iconic ground) will give rise to an icon only when it is combined with the sign function.

FIGURE 2 HERE

Fig. 2. The relationship between principles, grounds, and signs, from the point of view of Peirce.

As always, there are passages in Peirce's work, which may be taken in different ways, but it makes more systematic and evolutionary sense to look upon iconicity and indexicality as being only potentials for something being a sign. Iconicity, indexicality, and symbolicity only describe *that which connects two objects*; they do not tell us whether the result is a sign or not (Fig. 2.). These considerations allow us to separate the study of the phylogenetic and ontogenetic emergence of iconicity, indexicality and symbolicity from that of the corresponding signs (cf. Sonesson 1998; 2000; 2001 2003, forthcoming a, b).

3. Meaning as conceived in biosemiotics

The semiotic function, in Piaget's sense, must be contrasted with the biosemiotic concept of meaning, epitomized by the world of the tick, or, equivalently, by the same landscape as seen by a human being, a fly, a mollusc, or a dog, as illustrated in Uexküll's (1956) pictures. This is meaning as a category, as a filter applied to the world: It consists in picking out some properties and ignoring others. When incorporated into the sign concept, this filtering device becomes relevance: the difference between the *theme* and the *background*. Relevance implies the possibility of going from one *Umwelt* to another but also of redefining the *Umwelt* – which the tick cannot do. Relevance is just as possible in pictures as well as in language.

From a Peircean point of view, Deacon is quite right in searching for a “basic sense” of iconicity beyond “the way we typically use the term”, but what he comes up with is both too much and too little. Deacon suggests that iconicity is the fact of there being no distinction: the perception of the same “stuff” over and over again. It is, he maintains, like camouflage: the moth's wings being seen by the bird as “just more tree”. He goes on to suggest that iconicity is recognition, that is, the identification of a category, and even “stimulus generalisation”. Then he claims that “typical cases” such as pictures are essentially of the same kind: what makes pictures into icons is “the facet or stage that is the same for a sketch and the face it portrays”.

If Deacon intends to identify iconicity with what is known in psychology as “categorical perception” he may be right: that is, the perception of something as being identical as long as it

appears between a lower and a higher threshold of some property subject to variation. According to the biosemiotic model, pioneered by von Uexküll, all objects emitting butyric acid are identical to the tick. Thus, camouflage, to the extent that it is never discovered to be camouflage, the stem, to the extent that its identity is not the product of an act of comparison, and stimulus generalisation, as long as it never becomes conscious as such, could be seen as simple iconicities, that is, repertoires of properties.

Recognition, however, must already be an iconic ground. In one of his well-known definitions of the sign, a term which he here, as so often, uses to mean the sign-vehicle, Peirce (1931-58: 2:228) describes it as something which “stands for that object not in all respects, but *in reference to a sort of idea*, which I have sometimes called the ground of the representamen” (my italics). While some commentators have claimed that Peirce is here talking about some properties of the expression, whereas others favour the content, the ground must really concern the relation between them. Such an interpretation seems to be born out by Peirce’s claim that the concept of “ground” is indispensable, “because we cannot comprehend an agreement of two things, except as an agreement in some respect.”(I.551) In another passage, Peirce (1.293) himself identifies “ground” with “abstraction” exemplifying it with the blackness of two black things. It therefore seems that the term ground must stand for those properties of the two things entering into the sign function by means of which they get connected, i.e. both some properties of the thing serving as expression and some properties of the thing serving as content. In case of the weathercock, for instance, which serves to indicate the direction of the wind, the content ground merely consists in this direction, to the exclusion of all other properties of the wind, and its expression ground is only those properties which makes it turn in the direction of the wind, not, for instance, the fact of its being made of iron and resembling a cock (the latter is a property by means of which it enters an iconic ground, different from the indexical ground making it signify the wind). If so, the ground is really a principle of relevance, or, as a Saussurean would say, the “form” connecting expression and content: that which must necessarily be present in the expression for it to be related to a particular

content rather than another, and vice-versa (cf. Fig. 3. and Sonesson 1989,III.1).

FIGURE 3 HERE

Fig. 3. The sign as a mapping between different spaces, based on different principles of relevance

To see camouflage as camouflage is of course to deprive it of its functionality: it is not meant to be discovered as such. The capacity for doing so is useful for the biologist, as it is of course for the potential victims or predators of the animal using the camouflage. The case of the picture is quite different. It only functions as a picture when it is seen as a picture. This is what is meant by the picture being a sign. It is not a stand-in for that which it represents: like verbal language, it is a way of making the absent thing present as seen from a particular point of view, that is, thematically adumbrated.

4. The place of the picture in evolution

In the view of James Gibson (1978), normal perception gives *direct* access to reality; in contrast, pictures represent a kind of indirect perception (cf. Sonesson 1989;III.3.6). The perception of surfaces, of their layout, and of the transformations to which the latter are subjected, is essential to the life of all animal species, Gibson maintains, but the markings on these surfaces have only gained importance to man, notably in the form of pictures. Surfaces have the kind of meaning which Gibson (1980:xii; 1978:229) elsewhere calls “affordances”; the markings on surfaces, however, have “referential meaning”.

Although Gibson does not use the term, he clearly implies that the picture is a sign, in the sense of being as a surface, which, on being perceived, brings something beside itself into awareness. If Gibson means to suggest that surfaces can never be taken to be something else than surfaces by animals and children he is clearly wrong. A lot of animals have been shown to recognize something in a picture that they have only seen in real-life, or vice-versa (cf. Fagot 2000). This, of course, can be explained by simple category perception – iconicity, not iconic signs.

Both a similarity and a difference between the picture and depicted object are required. But even this is not enough. Children as young as 5 months old look longer at a doll than at its picture

(DeLoache & Burns 1994). Also doves have been known to react differently to the picture and its referent (Cabe 1980). This shows that the picture and its object are seen as different, but not necessarily as a sign and its referent. There may be various other differences, for instance, one may speculate that the real doll is seen as a more prototypical instance of the category; or, it may be more interesting because of having more perceptual predicates. Real understanding of the picture sign certainly seems excluded: 9th months olds, but not 18th month olds, try to grasp the object (DeLoache 2004).

The difficulty consists in seeing, at the same time, both the surface and the thing depicted. In other words, in consist in making a *differentiation*. But there is also the difficulty of understanding which item of the pair is the surface and which is the real thing: that is, of grasping the *asymmetry* of the sign relation. To interpret pictures appears to be surprisingly difficult: experiments by Deloache and her collaborations (e.g. Deloache & Burns 1994, etc.) suggest that the picture is understood later than language (around 2 1/2 years). The problem may be that iconicity comes in the way of the sign function. This is consistent with another finding of Deloache, according to which scale models are even more difficult to understand. However, the task set by Deloache appears to involve more than the recognition of the picture as a picture – it requires an action: to fetch the hidden object. On the other hand, the verbal scaffolding used seems to render the task easier. Without verbal scaffolding pictures are understood even later, according to Callaghan (& Rankin 2002). To this should be added various kinds of indexical scaffolding used by Deloache, involving pointing as well as creating neighbourhood relations between the picture and the depicted object. While it seems difficult to conclude anything precise about the developmental status of the picture at present, it cannot be doubted that pictorial signs are not simply the result of iconicity.

5. Conclusions

Iconicity, indexicality, and symbolicity only describe that which connects two objects; they do not tell us whether the result is a sign or not. These considerations allow us to separate the study of the phylogenetic and ontogenetic emergence of iconicity, indexicality and symbolicity from that of the

corresponding signs. Iconicity and indexicality are elementary, but the case of iconic and indexical signs is more complex. In a way, pictorial signs may be "more difficult" than language, because they suppose both similarity and difference (i.e. differentiation). Mimesis, which is (often) iconic, serves as mediation between meaning and signs. In this sense, we may go along with both sides of Sebeok's paradox: there is a global sense of meaning and a more local one, because there is a space mediating between them.

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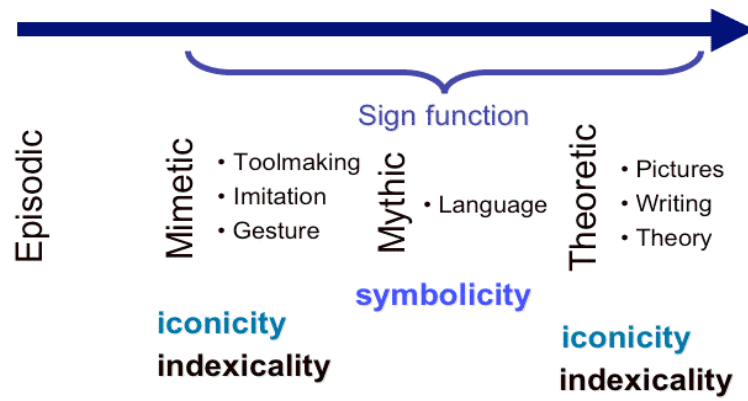


Figure 1. Donald's model of evolution related to the notion of sign function

	Firstness	Secondness	Thirdness
Principle	Iconicity	—	—
Ground	Iconic ground	Indexicality = indexical ground	—
Sign	Iconic sign (icon)	Indexical sign (index)	Symbolicity = symbolic ground = symbolic sign (symbol)

Fig. 2. The relationship between principles, grounds, and signs, from the point of view of Peirce.

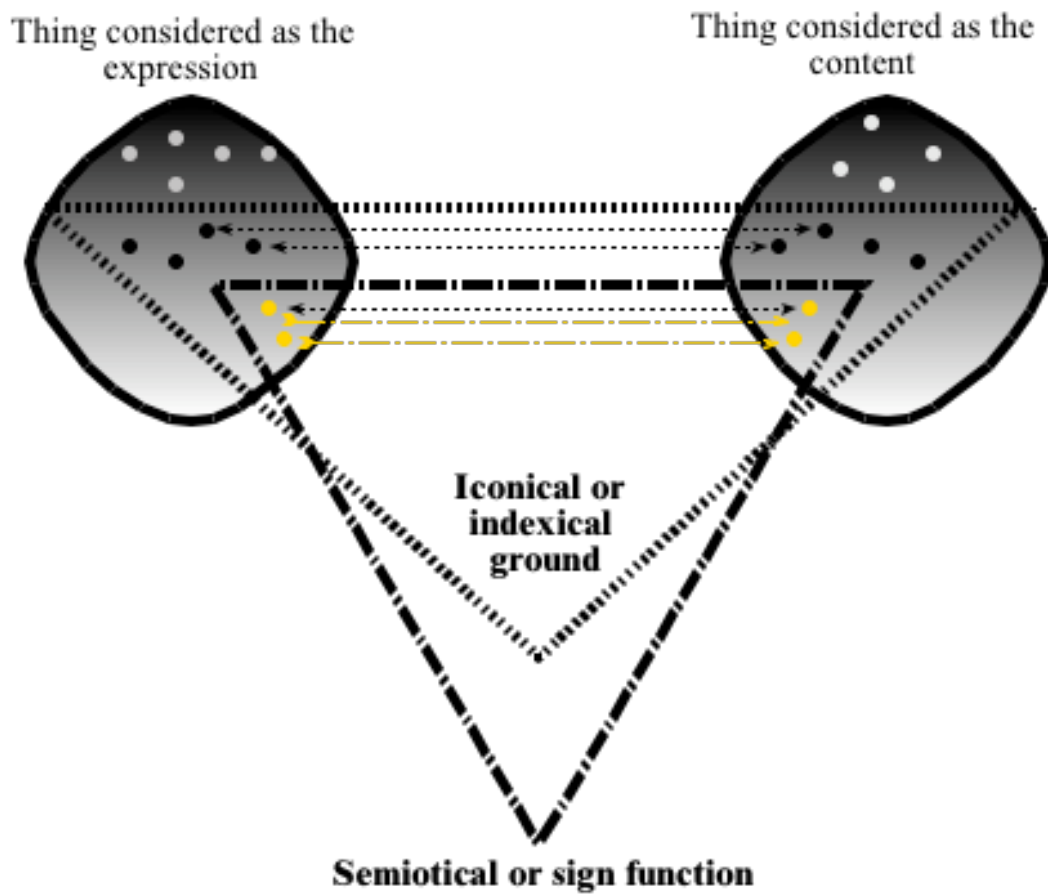


Fig. 3. The sign as a mapping between different spaces, based on different principles of relevance