

New Considerations on the Proper Study of Man – and, Marginally, Some Other Animals

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Abstract: In order to differentiate the semiotic capacities of animals and human beings we need to understand more exactly what these properties are. Instead of identifying all vehicles of meaning with signs, we certainly have to specify the notion of sign, but it will also be necessary to provide an inventory of other kinds of meaning, starting out from perception, and going through a number of intermediate notions such as affordances, markers, and surrogates before reaching signs and sign systems. This essay proposes a phenomenological description of a few kinds of meaning, which is not meant to be exhaustive, but still should give an idea of the complexity of the task. It suggests that not only the setting up of semiotic levels and hierarchies of evolution and development, but even, to some extent, the comparison of the capacities of animals and human beings must go hand in hand with advances in phenomenological observations.

Introduction

All human beings are (at least also) animals. In this sense, they are objects of the study called biosemiotics. In some respects (of which many are as yet rather unspecified), however, human beings are different from other animals. I hesitate to say that, in this sense, human beings are studied by anthroposemiotics, because I take the latter term to be a straw-man set up by practitioners of biosemiotics as we know it.¹ Elsewhere, I have claimed that the main interest of semiotics as a discipline consists in enabling the comparing and contrasting of different semiotic resources, instead of splitting up the study of linguistic, pictorial, and other artefacts, as is done in the traditional humanities (Sonesson 1989, etc.). In the same way, we have to posit one single and comprehensive study of semiotics, if we are going to be able to sort out the differences and similarities between human beings and animals.

When postulating the co-extensiveness of meaning and life, Hoffmeyer (e.g. 2005) has taken care to note that, contrary to all customary kinds of reductionism, the biosemiological one does not project a model taken from the natural sciences onto the objects of study of the humanities, but exactly the opposite. Thus, anthropocentrically speaking, it does not operate on a downward scale, but brings about an upward shift, projecting signs on cells rather than the reverse. In the terms introduced by Marnier (1997) in his study of Surrealism, it is a case of

upwards-going, or ascendant, rhetoric. Hoffmeyer, of course, would not care to recognise any metaphor here at all, for all metaphors suppose some rupture of continuity, however slight, between vehicle and tenet (cf. Sonesson 1989:330ff; 2003).ⁱⁱ They involve the trespassing of one meaning into the domain rightly occupied by another. It could be argued that, except for the superficial rhetorical effect, ascendant and descendant reductionism really amount to the same: whether all things are considered to be signs or none are, we are in the end deprived of any possibility of noting a difference (Cf. Sonesson, in press). As a metaphor, such identification makes sense because we know that no “real” identification is claimed. As a scientific model, however, it is, to say the least, not very informative.

Even when starting out from this reductionist model, there are of course ways of papering over its defects, for instance by introducing levels or hierarchies. To accommodate human beings within biosemiotics, nevertheless, it is not sufficient to introduce levels of semiosis (cf. Brier, this volume; Kull, this volume). There also have to be clear criteria for separating these levels, or, more specifically, the way in which meaning is handled within the different domains. To posit levels is an excellent beginning, but this does not tell us how the different levels are different. To say that they correspond to icons, indices, and symbols may be useful (Kull, this volume), but only at a later stage, when one has connected the stages back to empirically separable criteria. The term “empirical” shall here be taken in a broad sense, to include systematically obtained first person data, as in phenomenological variation in the imagination.

Once the levels are defined by means of clear criteria, one may venture into setting up one (or another) hierarchical model of semiotic evolution and development (cf. Zlatev 2007; 2008; this volume). In the following, however, I do not intend to propose any such hierarchy, not because I think the idea is wrong, but because I believe there are many different kinds of meaning, and our first task should be to study them carefully before even trying to arrange them on a time scale. In the rest of this article, I will undertake such a study of the meanings of meaning. It will be done using a phenomenological approach in the Husserlean sense: i.e. attempting to render explicit the structuring present in the field of consciousness.ⁱⁱⁱ When they are available, moreover, I will also refer to animal studies that may throw light on the existence of some types of meaning also outside of the purview of human experience.

Instead of starting out with the simplest instance of meaning, I will first consider that which will turn out to be the most familiar one: the sign. From there on, it will be possible to elucidate some varieties of meaning which must pre-exist to the sign, such as percepts and

affordances, as well as some kinds of meaning which are almost like signs, such as markers and surrogates, and also such meanings which presuppose the sign, notably sign systems.

The sign as the prototype of meaning

Late in his life, Peirce realised that all his notions were too narrow: instead of “sign”, he reflected, he really ought to talk about “medium”, “branching” or “mediation” (CS 4.3 and MS 339, quoted by Parmentier 1985). Indeed, he even remarked that there was something “injurious” to making the word “sign” do a much bigger job than that to which it was fitted (cf. CP. 4.3). Here Peirce sounds very much as Humpty Dumpty becoming at last aware of his ruse. And yet, it is also in accordance with Peirce’s “ethics of terminology”, which states that we should not introduce terms that “interfere with any existing term” (cf. Peirce 1998,II, 263-266; Deely 2001: 662ff). Strange to say, those who like to think of themselves as the true Peirceans do not seem to have taken into account this piece of self-criticism on the part of Peirce.

In the following, I will use “semiosis” as a general term, without prejudging the nature of meaning involved. The sign, in this sense, is simply one of the (more complex) ways in which meaning may be realised. Let us start out by considering what some central instances of signs could be, and then try to determine what they have in common. The cell is certainly not such a central instance, even to Hoffmeyer, because he clearly intends to bring a description more familiar from something else to the cell. It is clear that what Hoffmeyer is thinking of is the linguistic sign, the word or (to be more precise) the morpheme. The picture sign is, I believe, basically similar to the linguistic signs, and so are at least some gestures. Play-acting, as well as children’s symbolic play, would seem to be of the same general kind. I am not, of course, arguing that these kinds of meaning are all conventional, as would Eco, Goodman, and many others whose arguments I have long ago rejected (cf. Sonesson 1989; 1993, 1994; 1995, 2000a). But they possess that which would allow the presence of a convention, just as well as a motivated relation: (at least) two parts. Indeed, Saussure here was the more subtle phenomenologist: quite apart from what it connects to in the outside world, i.e., the referent, the sign itself has two parts, because beside that which is perceived, it also contains something which construes the referent in a particular way.

According to Piaget’s account of child development, every child goes through a number of different stages enhancing his or her capacity for understanding. Of particular importance in the present context, however, is Piaget’s (1945; 1967:134ff ; 1970:342ff) claim that, on the border between sensori-motor thinking and concrete operations, around 18 months of age, the

child learns to master “the semiotic function” (originally called the symbolic function), which involves, not only language, but also, notably, drawing and symbolic play. Piaget does not deny that the child experiences meaning before this age, for instance in perception (thus anticipating the criticism of Trevarthen & Logotheti 1989), but he thinks that it is only with the attainment of the semiotic function that the child is able to conceive meaning as something differentiated into a signifier and a signified. It should be kept in mind, nevertheless, that Piaget is here talking about the capacity for *producing* language, pictures, etc., and not the ability to interpret them. As in the case of language, the capacity to understand pictures would most naturally be taken to precede any ability to produce them. However, we are not concerned here with the moment of emergence of the sign function, but with its structure.

The notion of *differentiation*, which is normally overlooked, is fundamental in my view.^{iv} But it is also indispensable to maintain the distinction between subjective and objective differentiation. The semiotic function, or, as I will say from now on, the sign (function) requires “a differentiation, from the subject’s own point of view, between the signifier and the signified” (Piaget 1967:134f). Thus, for instance, the visible extremity of an object that is almost entirely hidden from view is the signifier of the entire object for the baby, but it also happens to be “an objective aspect of the signified” and thus, according to Piaget (*ibid*), it cannot be a sign. But when the child uses a pebble to signify candy, Piaget claims, the child is well aware of the difference between them, that is, there is subjective differentiation.

Curiously, Piaget takes for granted that something which is not objectively differentiated cannot be subjectively so. However, we can 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*. Moreover, contrary to what Piaget (1967:134) submits, the hunter, 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 spite of the existence of a physical and temporal relationship between the animals and its tracks, confound the tracks with the animal itself in his construal of the sign, in which case he would be satisfied with the former. Indeed, if the tracks are not differentiated from the animals having produced them, they cannot be read as signs, but only as a part of the complex

situation of which the animal is a part. Differentiation may possibly be a result of the object that serves as signifier not being continuous in space and/or time with the object serving as signified, as well as of taking the signifier to be of a different general category of the world than the signified, but there could also be other criteria that remain to be delineated.

If Saussure and Piaget may be said to have made a fairly good, but not particularly explicit, phenomenological job, Husserl himself could be expected to have some contribution to offer to the phenomenology of signs. Indeed, Husserl's discussion of signs (which he calls "appresentations") may help us spell out what is involved in "subjective differentiation". According to Husserl (1939), indeed, two or more items may enter into different kinds of "pairings", from the "paired association" of two co-present items through the "appresentative pairing" in which one item is present and the other indirectly given through the first, to the real sign relation, where again one item is directly present and the other only indirectly so, but where the indirectly presented member of the pair is the theme, i.e. the centre of attention for consciousness. This clearly implies that the sign is asymmetrical in a double sense: one part of it is more in focus than the other, and the second of its parts is more directly accessible than the first one.

But we should take these observations further: since what is at stake is a thematic structuring, and this structuring itself is relative to a subject for whom it is a part of the field of consciousness, the first part of the sign is in some sense a stand which the subject may take on the other. In more familiar terms, the first part of the sign is "about" the other. Of course, this more readily applies to the relation between the content and the referent, where the latter corresponds in the world outside of the sign to that with which the sign is concerned. Husserl (1980), in fact, makes this distinction clearly only in his study of picture consciousness, where he notes that the depicted Berlin palace is here in the picture, whereas the real palace is in Berlin (Cf. Sonesson 1989: 270ff; 2006a; Cf. Zlatev, this volume).^v As I have suggested elsewhere (Sonesson 1989:193ff), we would thus have to suppose some kind of thematic hierarchy going (in the ordinary case) from the expression through the content to the referent.^{vi}

Thus we can minimally define the sign by the following properties:

- a. it contains (a least) two parts (expression and content) and is as a whole relatively independent of that for which it stands (the referent);
- b. these parts are differentiated, from the point of view of the subjects involved in the semiotic process, even though they may not be so objectively, i.e. in the common sense Lifeworld (except as signs forming part of that Lifeworld);
- c. there is a double asymmetry between the two parts, because one part, expression, is more directly experienced than the other;

- d. and because the other part, content, is more in focus than the other;
- e. the sign itself is subjectively differentiated from the referent, and the referent is more indirectly known than any part of the sign.^{vii}

There are reasons to believe that the sign, in this sense, is available to very few, if any, animal species apart from human beings (let alone single cells), and that it is acquired fairly late in child development. To demonstrate such a claim is certainly not easy, because we cannot simply ask apes and doves, or for that matter, infants or somewhat older children, whether they have signs. Thus, we must have recourse to experimental studies, where the measures obtained can only be indirect.

The picture could be considered the best testing case, because, unlike the linguistic sign, it must contain both similarity and difference. Experiments have shown that even children 5 months of age look longer at a doll than at its picture (DeLoache & Burns 1994). However, it does not follow from this that the children see the picture as a picture. Indeed, 9 months olds, but not 18 month olds, try to grasp the object depicted as if it were a real object (DeLoache 2004); whatever the difference they perceive, then, it does not seem to involve signs as opposed to objects. This result shows that the picture and its object are seen as being different, but not necessarily as forming a sign-vehicle and its referent. The real doll is perhaps seen as a more prototypical instance of the category; or, alternatively, the real object may be more interesting because of having more perceptual predicates.^{viii}

In an interesting study realized within the SEDSU-project (Zlatev et al. 2006), baboons, chimpanzees, and gorillas were tested with pebbles or slices of banana, either real or in photographic pictures, which were presented in different contrasted pairs (Parron, Call, & Fagot submitted; summarized in Sonesson & Zlatev, forthcoming).^{ix} A considerable majority, all species put together, chose the real banana, and very few chose the picture of the banana when the real banana was opposed to its picture. Most of the primates tested, except for the chimpanzees, also showed a reliable bias for the banana picture over the real pebble, as well as for the picture of the banana over the picture of the pebble. Moreover, a majority of the primates, but no chimpanzees, show a tendency of trying to eat the banana pictures. Therefore, it might be intimated that the chimpanzees, different from the other primates, have some understanding of signs, rather than simply seeing the banana picture as some less good instance of the category of bananas. Another experiment within the SEDSU-project involved a single chimpanzee, Alex, who had been trained to imitate 20 different action sequences beforehand, and who in a new experiment was solicited to perform these actions, prompted, not by a live model as before, but by being shown the actions on video, colour photographs,

black and white photographs and drawings (Call, Hribar, & Sonesson, forthcoming). Of particular interest is the fact that the chimpanzee was able to accomplish these actions when shown pictures representing a pre-final phase of the sequence just as well as when confronted with pictures of the final state. It would seem far-fetched to suggest that the chimpanzee is here simply confusing the still photograph and the action, in particular when the photograph shows an incomplete action, where the picture prompting the action is distinct from the action requested, both because it is a static view of the action and because it does not show the action in its complete or most characteristic state. Perhaps, then, the understanding of picture signs is within the purview of chimpanzee capacities.

When prompted, as they often are by human investigators, apes, as well as some dolphins and parrots, have been known to master much more language-like signs, such as elements of American Sign Language (ASL), items of some *ad hoc* systems made up of plastics, or some systematic combinations of tappings on a computer keyboard. The exact interpretation of these feats is still not very clear (cf. Wallman 1992; Heine & Kuteva 2007). In fact, we need a full-fledged definition of the sign even to start formulating a question that has some hope of being answered. Without it, we are reduced to either denying all evidence of sign behaviour in animals, explaining them away as instances of “the Clever Hans phenomenon” (cf. Umiker-Sebeok & Sebeok 1981); or to accept all suggestions of meaningful behaviour at face value. As for the latter position, many sanguine reports coming out of primate studies, from Washoe to Kanzi, could be cited (Cf. discussion in Zlatev, this volume).

Meaning as feature-detection

Perception is the primary level of meaning available to human beings, as well as to other animals. It is a level of meaning, because it supposes some kind of organization, and this organization may be different for different species, as well as for members of different cultures. In terms of the functional cycle defined by the biologist and precursor of biosemiotics, Jakob von Uexküll, each species has its *Umwelt*, the world as it is interpreted, made up of a *Merkwelt*, the features which are picked up, and a correlated *Wirkwelt*, the reactions whose results impress themselves on the environment. Together, the percepts and the actions make up a functional cycle (*Funktionskreis*). According to a by now classical example, the tick hangs motionless on a bush branch until it perceives the smell of butyric acid emitted by the skin glands of a mammal (*Merkzeichen*), which sends a message to its legs to let go (*Wirkzeichen*), so that it drops onto the mammal’s body. This starts a new cycle,

because the tactile cue of hitting the mammal's hair incites the tick to move around in order to find its host's skin. Finally, a third circle is initiated when the heat of the mammal's skin triggers the boring response allowing the tick to drink the blood of its host. Together, these different cycles consisting of perceptual and operational cue bearers make up the interdependent wholes of the subject, corresponding to the organism, and the *Umwelt*, which is the world as it is defined for the subject in question (cf. Zlatev this volume).

For anyone coming from structuralist linguistics or semiotics, or even from present-day neo-Whorfianism (e.g. Lucy 1997), there is inevitably something familiar to this description: reality is supposed not to be available as such, but only in the way in which it has been carved out of some kind of "amorphous mass", as Saussure put it. The difference, however, is that in the above-mentioned conception, the segmentation of reality is supposed to take place courtesy of some linguistic or other semiotic system, some culture or historical period, or the like. Here, however, as von Uexküll insists, it is mainly anatomy that decides how the world is divided into pieces. However, inherent in the notion of functional circle, there is also a suggestion that the segmentation of the world will differ according to the different ways reality is acted upon. There are obvious parallels (never pursued to this moment, as far as I know) with Piaget's characterization of the sensori-motor stage, as well as with the tenets of contemporary enactivism (e.g. Thompson 2007).

Perhaps more to the point, the idea of perception as being active and exploratory has a parallel in Gibson's (1966, 1982) "ecological" psychology of perception (and beyond that in Husserlean phenomenology). As Gibson never tires of repeating (again echoing Husserl), perception is dependent upon the movements of one's own body. According to Costall (2007), who is a declared follower of Gibson, the most important characteristics of Gibson's concept of *meaning* is that it is neither equivalent to external sensory input, nor to "representations" generated in the brain, but it constitutes a dynamical, relational category that arises as an active perceiver interacts with an environment. While this is no doubt correct, it is only half of Gibson's theory of meaning, the part which corresponds most closely to von Uexküll's conception (without any obvious influence), and which accounts for the notion of affordances (to which we will turn in the next section). Costall's description neglects the fact that Gibson (1978; 1980) also developed a theory of picture perception, and that, in so doing, he always insisted that pictures, like language, have referential meaning, that is, they are indeed representations (Cf. Sonesson 1989).^x Clearly, he did so in his early years because in opposition to both the *Gestalt* and constructivist psychologies of perception, he wanted to distinguish clearly between picture perception and the perception of the world, showing that

the latter was not in any (interesting) sense a representation. In the final decades of his life, however, he seems to have taken an interest in picture perception for its own sake.

This brings us to the more fundamental difference between Uexküll's *Umwelt* and what is at stake in structuralist and neo-Whorfian linguistics: the latter, but not the former, is allo-functionally defined, that is, it is a result of the application to the world of a content that is characterised from the point of view of an expression, as construed within a sign (Cf. Sonesson 1989; 1992; 2006c; 2007). There is no second level in the *Umwelt*. In a true sign relation, the mammal is not really the object, in the Peircean sense, for which the butyric acid is the representamen. Or, to be more precise, it is not the "dynamical object". At the very most, it is the "immediate object". It will be remembered that, in Peirce's conception, while the "immediate object" is that which directly induces the sign process, the "dynamical object" is something much more comprehensive, which includes all those things which may be known about the same object, although they are not present in the act of inducing. Indeed, the "dynamical object" is that which corresponds to the potentially infinite series of different interpretants resulting from the same original immediate object. It should be clear that, for the tick and similar beings, there could be no distinction between direct and dynamical object, because there is no room for any further development of the chain of interpretants. In this sense, the perception of the tick can hardly be called exploratory and active.

Ernst Cassirer (1942: 29ff; 1945: 23ff), the proponent of "symbolic forms", was no doubt the first thinker outside of biology to take von Uexküll's ideas seriously. After pointing out that, to human beings, all experience is mediated (a case of "Vermittlung"), he goes on to observe that this is also true of animals, as described by von Uexküll. This does not mean that Cassirer in any way retracts from the position according to which only the human world is conveyed by "symbols". Actually, he makes no mention of the fact that, to von Uexküll, the *Funktionskreis* is a "theory of meaning" ("Bedeutungslehre"): he opposes "animal reactions" to "human responses". Cassirer may be wrong in not seeing the similarity between signs and other meanings (though he suggests it in passing using the term 'Vermittlung'), but he is quite right, I submit, in insisting on the difference. In philosophical phenomenology, as described by an unrelenting follower of Husserl, Aron Gurwitsch (1964:176f), perception is said to carry meaning, but "in a more broad sense than is usually understood", which tends to be "confined to meanings of symbols", that is, our signs. Indeed, as Gurwitsch (1964: 262ff) goes on to suggest, meaning is already involved in the perception of something on the surface as being marks, which then serve as carriers of meanings found in words. Criticising other psychologists, Gurwitsch notes that the carrier of meaning is not part of the meaning of a sign,

i.e. the expression is not part of the content, unlike what happens in perception: the latter is made up of perspectives (*noemata*) which are integral parts of larger wholes. As I have formulated the distinction elsewhere (Sonesson 1989), perception involves wholes which are *more* than their parts; signs have to do with something which is *something else* than what they stand for.

It is not clear, however, that there is an experience of parts and whole to the tick. What is for us, as observers, three cues to the presence of a mammal – the smell of butyric acid, the feel of the skin, and the warmth of the blood – do not have to be conceived, in the case of the tick, as one single entity having an existence of its own (a “substance”, in Gibson’s terms), but may more probably constitute three separate episodes producing each its own sequence of behaviour. The butyric acid is there to the tick; the mammal is present only to us. In addition, it does not make sense to say that either the butyric acid or the mammal is in focus or not. Nor is there any sense in determining whether the butyric acid or the mammal is directly given. From the point of view of the tick, there can hardly be any difference. Not only are there no signs to the tick, there is not much of a world to explore.

Thus understood, the tick does not seem to be radically different from the single cell. In trying to extend the sign concept as far as the cell, Klaus Emmeche (2002) sets out to show that in the living being function and meaning are the same. This can also be demonstrated, because Emmeche understands meaning in the sense of function: the relation of the part to the whole. Indeed, “saying that *cytochrome c* means something to the cell is the same as saying that it has a function.” (Emmeche 2002: 19). This implies that the meaning of the enzyme “is structural” in the sense that “the cell’s molecules form a system of dissimilarities (like the elements of language in Saussure” (Emmeche 2002: 20). From this point of view, everything that is in the cells is also in language. But, contrary to what Emmeche seems to imply, the opposite cannot be true. There is, of course, no sign function as we have defined it. Again, as we saw above, there is structure, but not an allo-functionally defined one.

Still, there are wholes that are of the physical, but not the living, order, as Merleau-Ponty (1942:139ff) demonstrated, against what he regarded as the facile generalizations of the *Gestalt* psychologists, in his first, less well-known book about the structure of behaviour. Thompson (2007:72ff), who usefully reminds us about Merleau-Ponty’s argument, would no doubt recognize the cell, as well as the tick, as being of the living order, because both are autopoietic, in the sense of Maturana & Varela (1980), that is, they are self-organizing in the strong sense of setting up their own limits to what is not them (Thompson 2007:97ff). My own feeling is that there should be some difference between single cells and ticks, even as far

as meaning is concerned, but I am not sure what arguments might bear on this issue. Instead, I would like to investigate in what sense meaning, even without considering the sign, is different for what, from our anthropocentric point of view, are “higher animals” and for cells and ticks. Human beings, apes, and other mammals would seem to be aware of the relations between parts and wholes.

The field of perception and attention

One fundamental way in which the relationship of wholes and parts is manifested, in the experience of human beings, and perhaps some other animals, but probably not ticks, is the structuring of the field of consciousness into theme, thematic field, and margin. The theme is that which most centrally occupies awareness, the field is co-present with the theme, as well as being connected to it from the point of view of content, although being less in focus; and the margin is simply co-present with, without being intrinsically connected to, the theme and the thematic field. Minimally, the margin contains such things as our awareness of our own body, of the temporal horizons of the present moment, and of the world of perception to the extent that it is not in focus. Although Aron Gurwitsch (1957; 1964; 1985) published a masterly phenomenological description of the field of consciousness half a century ago, his work has rarely been taken into account, neither by philosophers nor in empirical research (cf. Sonesson 1989). In a recent book, Sven Arvidson (2006) sets out to show the relevance of this work to empirical research, at the same time emphasising that what is really at stake here is the mechanism of attention.^{xi} Although Arvidson does not mention the studies by Michael Tomasello (1999; 2008) on children and apes, this emphasis on attention has the advantage of relating Gurwitsch’s classical work to more recent research.

An *Umwelt*, such as that of the tick, works as a filter, leaving out everything that is not directly relevant to the biological processes characteristic of the species. However, the ecological niche of human beings, also known, with a term taken from Husserl, as the *Lebenswelt* (cf. Smith & Varzi 1999), functions as a thematic device, which assigns different degrees of prominence to properties of the world without entirely barring access to any of them. Such levels of prominence may be constitutive of a *Lifeworld*, or it may be produced on the fly, that is, in a given situation, by means of (joint) attention. Both relevance and filtering involve the picking up a limited set of features from the totality of the environment. However, relevance does not exclude anything: it merely places some portions of the environment in the background, ready to serve for other purposes. Thus, in the case of language, properties that are not relevant for determining the meaning of the words and the sentence still may serve to

inform about the dialect, or even identify the person speaking. In contrast, filtering simply crosses out all that is not let through the filtering device.^{xii}

The difference between relevance and filtering no doubt has something to do with the capacity to be aware of the borders of one's *Umwelt*. It requires the ability to make the limits of the *Umwelt* into a theme. To the tick, to paraphrase Wittgenstein, the limits of its *Umwelt* are the limits of its world, but not so (in spite of Wittgenstein) to human beings. Indeed, in the *Umwelt* of the tick, there are simply three categories of perception, and three categories of action. All the rest, which is there to us, is filtered out for the tick.^{xiii} To be more precise, there is of course also a human *Umwelt*, which filters out those things that are not accessible to our experience. But, within the limits of that *Umwelt*, there is a human *Lebenswelt*, which consists of things receiving more or less attention, more or less emphasis, as well as all that is adumbrated around them. For example, while the kind of light we have access to does not include infra-red, all that is accessible to us is thematically structured. Ours is a world of shifting centres of attention, where what is in focus is perceived as part of a situation, and of the (life)world as a whole. And since the focus of attention will shift, perception is exploratory and active, and one interpretant leads on to another.

Phenomenological description certainly shows that the threefold structuring of the thematic field is an inescapable fact of human consciousness; and, as Arvidson (2006) rightly intimates, it is for filling in the details that we need empirical research, but, in order to accomplish this, as Arvidson fails to notice, empirical studies would have to take this structure for granted. None of the experimental studies discussed by Arvidson demonstrates the presence of this structure. Since animals are not in the business of doing phenomenological description (or, at least, they do not tell us about it), we cannot know whether they have any experience of Gurwitsch's tripartite structuring. As to the more well-known division between the theme and that which is out of attention, there might be some (negative) evidence, although the interpretation of it is not straight-forward. Tomasello's (1999) claim that apes are able to imitate goals, but not means, and his later claim (2008:22ff, 49ff) that, at least in all cases he considered, the apes do not learn through imitation, could at least be interpreted as corresponding to some kind of rigidity in the attention mechanism, although many other explanations are of course possible. Other studies which suggest problems in attending to the attention of the other, as when the ape is supposed to beg for something only from the human being who is able to see him, or when it has trouble understanding that the food is under the bucket to which the human beings is pointing (cf. Tomasello 2008:30ff), could be interpreted in this way. On the other hand, some SEDSU-

studies (Cf. Call, Hribar, & Sonesson, forthcoming) would seem to suggest that the problem does not involve attention, but execution: when he does not recognize the action, Alex fails to imitate it. However, he does not use any of the actions in his repertory, instead trying to do something new (Cf. Hurley & Chater, eds. 2005 for similar arguments). From the point of view of attention-getting, however, the experimental situation is highly artificial.

While the field of consciousness, or of attention, is a structure that moves around, reorganizing everything that comes within its scope into the threefold division of theme, thematic field, and margins, there are also intrinsic relationships of parts and whole in the human world of experience, as well as of membership into categories. Everything in the world pertains to a particular type or category; this is iconicity, independently of the sign function. Everything is also made up of parts and/or appears in the neighbourhood of something else; this is indexicality, before it is even used to construct signs.^{xiv} Human experience is meaningful, because it is made up of things (“substances”, in Gibson’s terms), which have different properties, which are members of different categories, and which appear in varying contexts. In the world of the tick, as described by von Uexküll, or that of the single cell, none of this makes sense. Anecdotal evidence, and even some research (Cf. Tomasello 2008:42f), suggests that the *Umwelt* of dogs and cats, let alone apes, is much more akin to that of human beings.

In the common sense *Lifeworld* there are three ways of dividing any conceivable object: into its proper parts (e.g. the head, the torso, the legs, etc., if the whole makes up a human body); into its properties (being male as opposed to being female, or being an adult as opposed to being a child, with reference to the same whole); and into its perspectives or adumbrations (the body seen from the back, the head seen in a three quarter view, etc. Cf. Sonesson 1989; 1996; 1997; 2001; forthcoming). These are three kinds of factoriality, which, along with contiguity, makes up indexicality, not as a kind of sign, but as a ground. A more well-known term for this is mereology, which is the theory of parts and wholes, derived from Husserl’s early work, but given this name by the logician Lesniewski (cf. Smith 1994; 1995). One may also think of at least the former two divisions as making up hierarchies: an *extensional* one, which goes from bigger proper parts to smaller ones (arm – forearm – hand – finger – nail, etc.) and an *intensional* one, which starts with general properties and ends up with more particular ones (animate being – human being – man – old man – gumpy old man, etc.).^{xv} The latter can be conceived as a series of ever more narrow circles of category membership. In extensional hierarchies subcategories are less space-consuming, while in intensional hierarchies extension is held constant (as long as you do not change the referent).

The limits of the arm and the nail do not coincide, but it is the same man who is old and gumpy, and who is an animate being, although the latter property is shared more widely (and thus intensionally more wide-ranging; cf. Sonesson 2005-06).

The task of mereology is not only to account for the relations between the whole and its parts, but also to explain the difference between various kinds of totalities. Husserl opposes configurations to aggregates, and we find attempts of the same kind, but sometimes more developed, in the work of various representatives of *Ganzheitspsychologie* (cf. Sonesson 1989, I.3.4). Peirce wrote a very long but rather disorganised list of various kinds of totalities (quoted in Stjernfelt 2000). More recently, many psychologists have been separating local cues from two modes of more holistic perception, "global processing" in which what is attended to are the highest level of hierarchical stimuli, and "configurational processing", which is concerned with the interspatial relations between elements (Cf. discussion in Sonesson & Zlatev, forthcoming. Also see Zlatev, this volume on the "binding" problem).

Evidence for mereological experience outside of human beings is mostly indirect. The study of picture perception in doves and apes, and everything in between, may have failed to establish that the animals are able to perceive pictures as pictures, but it certainly shows that they attend to both similarities and differences between a human being and the corresponding picture, or a real banana and its depiction, respectively (Cf. Sonesson & Zlatev, forthcoming). It also appears that pigeons are able to identify objects, not only when not all of their parts are included in the rendering, but also when the depiction is perspectively deformed, at least as long as some "geons" are included, that is to say, as long as there are some components of objects which can be recognized from different perspectives and which include the relation to other components of the same objects (cf. Peissig et alia 2000). Indeed, our study of Alex's attempts to imitate actions from static pictures containing some limited phase of the action could be taken to suggest that apes are able to identify events from time slices (Call, Hribar, & Sonesson, forthcoming).

In their study of the genesis of grammar, Heine & Kuteva (2007: 150ff; 276ff) ponder to what extent "animal cognition" may comprehend "hierarchical taxonomic relations" such as inclusion (category membership), property relationship (our intensional hierarchies), and partonymy or meronymy (our extensional hierarchies), as well as social relationships, possession, and location. Although they take into account different evidence than we have mentioned here, they conclude that basic abilities for hierarchical thinking are present in such animals as have been studied, notably in apes, monkeys, and at least one grey parrot. They go on to propose that the underpinnings of recursion which others claim to be specific to human

language, are within the reach of “animal thinking” (Heine & Kuteva 2007: 278f; 296f). Whether they mean to imply that all that is lacking in animal thinking for (full) recursion to be possible is the access to certain grammatical constructions such as noun phrases and subordinate clauses is not easy to determine. Whatever makes the differences between recursion and/or language, on one hand, and animal experience on the other, it certainly does not seem to be the basic principles for grasping perceptual meaning.^{xvi}

The ecology of affordances - Natural and Cultural

An affordance of anything, Gibson (1977: 67) tells us, is “a specific combination of the properties of its substance and its surfaces taken with reference to an animal” (italics deleted). More informative are some of the examples given: the affordance may be the graspability, or the edibility, of a thing. Graspability can be understood as the aptness to be grasped. Edibility must be interpreted as the susceptibility of being eaten. These are inferences which might be said, using a phenomenological term, to be “sedimented” onto an object of the Lifeworld: accordingly, an apple, once it is seen to be an apple, is also perceived as something which may be grasped and then eaten, because these are events being known to have taken place (and “properly” so) with other apples at other times. Therefore, the apple is apt to be grasped and eaten, both in the sense of normalcy and normativity: this is what happens most of the time, and it also what we consider the proper thing to do with an apple (Cf. Sonesson 1996, etc.). The apple does not stand for its own graspability or eatability. Unlike the case of the sign, there is not some object here that is directly given without being in focus which points to something more indirect that is also more emphasised. Rather, graspability and eatability are properties, in the sense discussed above, of the apple. However, they are not just properties of the apple, but just as much of the subject grasping and eating it. We thus end up with some kind of relational properties of the Lifeworld. Within the framework of a traditional Aristotelian ontology, Smith (1995) makes an important addition, when he allows for relational “accidents”, or properties, which are, so to speak, attached to several carriers, i.e. substances, understood perhaps more in a Gibsonian than an Aristotelian sense.

Gibson’s notion of affordance goes a long way towards realising the idea of active perception: it is a kind of meaning distinct from reference, and thus from the kind of meaning conveyed by signs, but it is more related to the art of doing things with things than to the world as the realm of “substances”. Gibson (1979: 129) points out that affordances are both mental and physical and depend both on the animal involved and its environment. They are part of what makes Gibson’s psychology “ecological”: that is, a theory taking into account the

interaction with the environment. Nevertheless, the notion of affordances should not simply be identified with the cycle going from perception to action in von Uexküll's *Umwelt*. Affordances would seem to be superimposed on the realm of substances, that is, unlike the properties of the world perceived by the tick, they are not there instead of substances.

Some properties of different *Umwelten* might in fact be better understood as affordances. The reaction of the tick can hardly be distinguished from its percepts. And it is conceivable that, in the world of the house-fly, the property of being a place for landing, mentioned by von Uexküll (1956), is not something superimposed on a world of substances. However, although, in the world of the dog, mentioned by von Uexküll in the same passage, the floor and the sofa may not originally have different affordances, the dog can learn to react to them in different ways, which must mean that it has at least some access to the realm of substances. The differences afforded by the sofa, the table, the chair, and the wall, not to mention the stove and kitchen sink may however be beyond the world of the dog. On the other hand, there are classical (as well as more modern) studies showing that apes are able to assimilate some of the affordances of tools. Indeed, recent attempts to teach some aspects of language to apes have even shown that they are able to grasp the affordances of computer keyboards, although this was of course not part of what was investigated.

While it is possible for graspability to be a property of things in some respect independent of culture, this could hardly be the case with edibility. Anthropological studies are full of examples of things being eaten in some places and considered entirely inedible in other places. And it is easy to think of other meanings that are clearly of the same kind as those mentioned and which are yet culturally specific. We just have to think about the dice as opposed to the cube. Suppose there is some human culture where dice have not been invented: it might yet seem as if the throwability of the dice may be perceived directly by those coming from the relevant culture, even though this particular kind of throwability can only be known to those coming from cultures like our own in which they are important ingredients of many games (Cf. Sonesson 1989). Similarly, for most people in contemporary Western culture, a computer keyboard has an immediate property of writability (not necessary less immediately present than the depressability of the keys). Thus, some affordances may be defined by our common *Umwelt*, as Gibson would seem to presuppose, while other, "cultural", affordances (to coin a term which would be anathema to Gibson), must derive from specific socio-cultural lifeworlds.^{xvii}

Thus, there is a problem with Gibson's description of ecological psychology that is parallel to the one found in Husserl's description of the Lifeworld (cf. Sonesson 1989:37ff):

suppose that what I am looking at is not just a cube but more particularly a die. Then the argument adduced by Husserl and Gibson continues to be valid: the object will be seen as directly to be a die as a cube. But this information is certainly not there simply to be picked up: Husserl's (1962; 1973) "Bantu negro" who is supposed to be the subject operating the reduction to the common Lifeworld would be at a loss to see the die, at least if he is otherwise as naive as Husserl supposes. And yet, to a grown-up member of Western culture, the die is at least as directly seen as the cube.^{xviii} Of course, the meaning of the die is not exhausted by its throwability: it means different things, according as different faces with a different number of eyes turn up, and in account of which kind of game it is thrown.

This is perhaps even truer of the different items used to play chess. Saussure, it will be remembered, used chess as a ready analogy to language, arguing that any odd set of buttons may be used to play chess, as long as the rules specifying the possible movements of each button were known, just as, in principle, any sound may stand for any meaning in a language. Anything can be a King, as long as it is permitted to move in the ways a King moves, just as anything (with some exaggeration, no doubt) may be an /a/, as long as it functions as an /a/ in the vowel system. This may be true, but to someone knowing how to play chess, only a chessman looking like the king immediately *affords* the kinds of movement that are allowed to the king in the game of chess.

Deacon (1997: 41, 59ff) goes even further than Saussure, comparing "rule-governed games", of which chess must be an instance, together with etiquette rules and music, to language, while excluding "portraits", claiming that the former, but not the latter, have "symbolic reference".^{xix} In fact, if we suppose "symbolic reference" to convey the general idea of something being "about" something else, or, equivalently, to stand for something else, then it makes much more sense attributing it to at least some instances of animal communication, and certainly to pictures as used by human beings, than to such things as etiquette, games, and music.

Rules defining games are not "about" anything at all: they impose restrictions on the behaviour allowed. This is easy enough to show in the case of etiquette and the like (Cf. Sonesson, in press). The case of chess, however, is more difficult to deal with. What makes some pieces of wood or other material and a board into a game of chess are the restrictions imposed on the permitted movements of the chessmen and the consequences of certain chessmen taking up particular positions. In fact, as John Searle (1969; 1995) has observed, the rules of chess are not like traffic regulations, applying to movements on a board which were hitherto unregulated: the restrictions on movement create chess, but traffic regulations do not

create traffic. In other terms, the rules of chess are *constitutive*, but the rules of traffic are only *regulatory*. Clearly, it could be argued that the queen signifies “able to move in any straight direction as far desired”, in a sense in which /a/ does not mean “low, frontal, sonorous”. More to the point, perhaps, chess is really comparable to language at the level of syntax (in Goodman’s sense of the properties of the sign vehicle), that is, in having rules for what may occupy certain positions and not others, as well as stipulating some invariant traits, and others which may be exchanged freely. The chessman does not carry a meaning differentiated from its expression, as is the case with language and pictures. Again, the chessman *affords* certain movements – but only in a given culture for which chess is a cultural (arte)fact.

Saussure’s comparison involves the chessmen and the elements of languages, such as phonemes and words. It does not pertain to sentences, let alone utterances. But if the affordance carried by a chessman contains not only the sequences of acts having been accomplished with it beforehand, and sedimented onto it, but also the disposition to carry out those same acts in the future, then perhaps each single act, once realised, could be comparable in some sense to an utterance, or, more, exactly, the act of uttering, the enunciation. Indeed, Herbert Clark (1996: 40ff) suggests that each move in chess could be seen as an act of communication, modifying the state of the common knowledge of the two players. If so, each movement of the queen would be a kind of “chess act”, comparable to a speech act, in case of which chess would be a highly repetitive type of discourse. Considered as a sign system, chess would therefore possess a very limited domain of validity, or, in other words, very restricted content resources.^{xx}

Searle (1995: 43ff) describes the constitutional rules giving rise to games (and to institutional reality generally) using the formula “X counts as Y in C”. His examples are such things as paper money and chess. To my mind, we may very well say that a chessman (or a button having been substituted for it on the board) *counts as* an item apt to move in certain specified ways on the board.^{xxi} To say that an expression (of a word, a gesture, a picture, and so on) counts as its content, however, is fairly misleading. Signs may really be surrogates for things, in a way; however, they fulfil different functions than the things themselves. They permit us to take a stand on things, so as to determine, for the purpose of the Lifeworld, the meaning of these things. No chessman, nor even a move by a chessman, really counts as a statement modifying the meaning of the game of chess, let alone what is outside of the world of chess.

It is no accident, I believe, that the parallel between language and chess has suggested itself to many prominent thinkers, from Husserl, Wittgenstein and Saussure to Searle and

Deacon: even if chess is made up of affordances, the latter would seem to form an integrated system. Early on in the history of artificial intelligence, software was invented with the purpose to play chess, and a late version of this software ended up getting the better of the human player. However, as far as I have been able to understand, this software never had the daunting task of making sense of the system of affordances that is ordinarily offered to human perception. Instead, the software must have made use of some version of the kind of code for positions on the checkerboard, which can be found in the chess column of the daily press. As far as I know, no one has ever tried to teach chess to animals. However, since many researchers have managed to teach some aspects of language to apes, chess playing may seem much less of a challenge. When closely considered, it turns out that, also in language studies, apes (perhaps with the exception of Kanzi, who has shown some understanding of English) have been able to learn some semblance of language without having to acquire much of those perceptual skills which are the foundation of language use.

Surrogates and markers

There are at least two kinds of meaningful phenomena in the human Lifeworld which are something more than mere cultural affordances, although they would not be signs in accordance with our definition. However, as soon as you try to grasp them, they always seem on the verge of becoming signs: surrogates and markers.

Carlo Ginzburg (2002) has suggested that the origin – whatever he means by that - of signs (or “representations”, as he puts it) is to be found in the effigies of kings and other heroes created after their death. The idea behind this reconstruction is easy to understand: someone of importance (to some particular person, or more commonly to some tribe or culture) has died, and to make up for his absence, a surrogate must be created. Or, at a more generic level, a human being is needed to scare the birds off the field (supposing “human being” to be a concept in the world of birds), and since a human being cannot always be around, a scarecrow is erected in his place. Or, to retain our scope on remarkable individuals, the Chinese emperor and, more recently, Saddam Hussein, were known to have their doubles. The idea can then be generalized (as it famously was in the list of the “design features” of language; Cf. Hockett, & Altmann, 1968) to the sign being anything standing for something that is absent.

But neither the scarecrow nor the doubles are “about” human beings. They are not typical signs, if we take the latter to be exemplified by such things as language, pictures, and gestures. Signs, as we have seen, are standpoints taken on the world of our experience – that

is, in Piaget's terms they are conceived "from the subject's point of view" (though normally the subject is a social one). Scarecrows, doubles and (perhaps) effigies do not present human beings in their absence, thereby taking a stand on what they are. Understood in this way, surrogates would seem to be of the same general kind as camouflage, but quite the opposite of signs. Elsewhere, I have taken Deacon (1997: 76ff) to task for claiming that camouflage in the animal world (such as the moth's wings being seen by the bird as "just more tree") are essentially of the same kind as those "typical cases" of iconicity we are accustomed to call pictures (Sonesson 2006c; in press). In fact, camouflage will only function as such, to the extent that it is not recognized for what it is, whereas, on the contrary, a picture, or any other sign, can only work as a sign, to the extent that it is seen to be a sign, and not, for instance, another instance of what it depicts or otherwise signifies (i.e. a picture of a banana, and not only a bad instance of the category "bananas"). In this respect, scarecrows, just as Saddam Hussein's doubles, are like camouflage, because they only accomplish their function, as long as they are not recognized for what they are, that is, for not really being human beings or Saddam Hussein, respectively. As recounted by Ginzburg, effigies seem to be rather similar to our scarecrows. They are still different from camouflage, as known from the animal world (but not, of course, as a military procedure), in being known by their creator (though not their receiver) not to be the real thing. In other words, surrogates are fakes. Nevertheless, even if Ginzburg is right, once it was invented, Art in the Western sense made it its business to transform effigies into signs introducing a point of view on the heroes.

However, perhaps there is a more subtle sense in which effigies may be different from scarecrows from the beginning: by being known to be different from heroes, but still standing in their place, instead of being about them. Perhaps a better example of this would be the understudy, in the way that term is used in the theatre: the person who takes over the part normally played by a well-known actor in no sense "means" that actor. He simply is equivalent to the actor for the purpose of the performance here and now. Indeed, we should rather think about what the scarecrow is to the farmer: something taking the place of a human being for a particular purpose, but certainly not signifying "human being". Perhaps we could say that this is the case where Searle's formula, "X counts as Y in C" really applies. We will reserve the term *surrogates* for this case from now on.^{xxii} Surrogates, in this sense, do share some properties with signs: if they are understood as such, they stand for something which is different from themselves, so in order to grasp their function, you must get a sense both of their equivalence to what they stand for, and the difference between them and what they stand-in for. Thus, there is certainly a differentiation here, and some kind of asymmetrical

relationship between the two items involved: but there is no possibility of one item being in any sense a stand taken by a subject (including a collective subject) on the other item.^{xxiii}

There is an obvious parallel between surrogates and tools: just as hammers are made for hammering, but other objects may be used for the same purpose, there are things which may substitute for the thing which should properly be there. Elsewhere, I have rejected the identification of signs and tools often made, whether it is understood as a reduction of signs to tools (as in the work of Prieto) or of tools to signs (as in Eco's writings). Both reductions neglect the fact that tools are used to change the world, but signs are there to interpret it (Cf. Sonesson 1989:133ff). Surrogates, however, are more like tools in this respect, for, as we just saw, they are not really "about" something either. But the way in which they intervene in the world is far less clear.

In his classical ape studies, Köhler found apes to have the capacity for grasping the potentialities of other things to fulfil the same purpose as some tools. Perhaps this could even be considered the positive side of Tomasello's observation of the ineptitude of apes for imitating not just goals ("emulation"), both also means ("true imitation"). A more recent study, really concerned with the ability to plan for future needs in apes, found them to be able to pick up an instrument, within a set of objects, which was visibly very different, but had the same relevant properties, as the tool used on earlier occasions (Cf. Osvath & Osvath 2008). However, the intervention of the surrogate in this outside world is far more subtle, and I know of no study which has something to say about that.

The other limiting-case of signs is something that has often simply been called marks or markers. In the most straightforward case, markers are merely a way of enhancing that part of the perceptual situation that stands out as the theme. However, as soon as we get beyond the immediate present given to perception, markers tend to become devices for keeping time. A case in point is the proverbial knot on the handkerchief. A more enlightening case, however, might be the mark made, in Calvino's (1997) story, by Qfwfq on an empty spot in space outside the Milky Way, after which action our hero sat down to wait for 200 million years, in order to observe the mark again after completing a full galactic year. The point, of course, is that the mark here simply means "the place where a mark was made". Indeed, it seems that many early modern philosophers, such as Hobbes and Leibniz, mainly conceived of signs as marks ("notae") permitting us to remember earlier thoughts, that is, mainly as messages to ourselves (cf. Dascal 1978; 1983; 1998).^{xxiv} In the real historical Lifeworld, however, the term "markers" better describes the function of signs during the high Latin Age, which, whether they consisted in books or in imaginary buildings in which the arguments of a discourse were

“placed”, simply served to remind the speaker of what he should be thinking of. Books were not alternatives to memory, but “notae” used to stimulate living memory (cf. Draaisma 2000: 33ff). Since then, books and other embodied artefacts have (what Plato prematurely feared) come to occupy much of the place earlier ruled by individual memory.

If the problem with surrogates considered as signs is their lack of “aboutness”, the issue with markers runs deeper. There is no secondary level. Markers simply put emphasis on what is already there. In that sense, they involve neighbourhood and perhaps part-whole relationships, that is, indexicalities. Therefore, there are clearly limiting-cases between markers and signs. Given two overturned recipients, one of them with a cross, it is somehow obvious to an adult human being that whatever may be interesting in this situation is to be found under the recipient with a cross on it. In the given situation, we might perhaps interpret the cross as meaning “food under this”. But, in the end, all we have is a mark, and its absence on the other recipient. It turns out this is a difficult situation to handle for at least some apes (Persson 2008 and personal communication). But it is not clear in what the difficulty resides: in the focus enhancement, or in the situationally carried meaning. In any case, it would be wrong to conclude that markers are simply beyond the capabilities of non human primates: bonobos have been observed to follow paths in the forest marked out by broken bush sprigs (Savage-Rumbaugh 1998). But perhaps such markers are different because they can more clearly be read as signs telling a story of what went before.

Landmarks could conceivably be taken to be such enhanced thematic positions, rather than mere perceptual contexts. They go beyond markers, however, in supposing a relationship between two entities or more, one of which is the landmark, and the other the target. A number of SEDSU-studies investigated the capacity of bonobos and capuchins for searching in the middle between two or more landmarks, finding it to be much more limited than in human beings, although the strategy in question was favoured by a smaller number of landmarks and a narrow distance between them (Cf. Poti, Kanngieser, Saporiti, Amiconi, Bläsing, & Call, to appear; summarized in Sonesson & Zlatev, forthcoming). Interestingly, however, animals tended to abandon the “middle rule”, searching instead in the neighbourhood of one or other of the landmarks. While the middle rule, which requires the animal to position an object at least in relation to two landmarks, may in the end turn out to be too complex, using a single landmark, which is already a remarkable capacity, does not seem to pose a problem as such.

Money as a system of surrogates

The comparison between money and signs was made already in Saussure's *Cours*, where it was formulated in terms of "values", probably only to bring home the importance of the interrelationships between the items making up the system. Basically, money is only a particular instance of goods, conventionally taken to be the equivalence of any other kind of goods.^{xxv} Money is also one of the instances of "institutional facts" most thoroughly discussed by Searle (1995: 32ff, 37ff; 1999): it is said to rest on a kind of "status function" ("X counts as Y in C"), just as chess and language, whether it is *commodity* money, which may be constituted of gold or other things regarded as valuable in themselves, *contract* money, in which the value is ascribed to the promise to pay the bearer the equivalent amount in gold, or *fiat* money, which are simply pieces of paper declared to be money by some official agency such as a central bank. Commodity money is, of course, as I noted above, simply a privileged type of commodity. As for fiat money, as presented by Searle, it still has some kind of embodiment, in a Husserlean sense (Cf. Sonesson 2007), but the materiality of Internet transactions seems to be considerably subtler.

In the posterity of Saussure, the most recent instance of the money metaphor seems to have been offered by Alf Hornborg (1999; 2001a, b), who considers money to be some kind of sign, although, in my view, he gives very good reasons for abandoning this identification.^{xxvi} Hornborg suggests that what has happened to money historically could be seen as a continuing conversion of signifiers into signifieds, gold standing for exchange value (to which it is indexically related), paper money standing for gold, and electronic money standing for paper money. However, Hornborg goes on to maintain that all money, at least in Western society, is fundamentally deprived of meaning, which makes it into a very curious sign indeed. According to Hornborg (1999:151), money is "a code with only *one* sign" (his italics), which would be like "imagining a language with one phoneme, an alphabet with one letter, or a DNA molecule with only one kind of nucleotide". This is a strange thing to say (quite apart from the fact that the word, not the phoneme, is the elementary *sign* of verbal language), because all kinds of currency appear to be made up of different units (such a "euro" and "cent"), to which further denominations are added by the number system. Indeed, this is probably why Saussure chose to compare language to money in the first place.^{xxvii}

It soon becomes clear, however, that Hornborg is really thinking about something very different, which, using Benveniste's (1969) terminology, may be called the *domain of validity* of the system, that is, the limitation on the content resources. According to Benveniste, verbal language is able to talk about everything (it is a "pass-key language", as Hjelmslev said),

while other semiotic resources are more restricted in what they may be about; pictures, I have suggested (Sonesson 1988; 2005-06), must make do with everything visible, or everything having visible homologues. Besides the domain of validity, corresponding in a sign system to the content resources, there is also something answering to the expression resources, which Benveniste calls the *mode of operation*, that is, sounds or, more exactly, phonemes, in language, and static and bi-dimensional visuality in pictures. The advantage of Benveniste's terms is that although he is exclusively concerned with signs, they can easily be generalized beyond signs to other semiotic resources.

Hornborg opposes the Western concept of money to that of pre-modern societies such as the Nigerian Tiv, where there are three different kinds of value, that is, three different kinds of circulations of objects, which do not connect with each other. Indeed, not only is it possible, to express it in more adequate terms, to have several different money systems, each with its own domain of validity, between which no exchange is possible (contrary to what happens in the case of the currencies of different countries), but, at least at this point in history, it is still true that “*all* societies recognize spheres of human life which are not to be mediated by money” (Hornborg 1999:157; his italics). Although Hornborg does not give any examples, I believe it is taken for granted in our society that such things as love, friendship, and honour are not to be had for money, but only for more love, friendship and honour. With such exceptions, however, the whole domain of goods can be exchanged for money in Western society.

The correlate of money being able to stand for everything is that it is unable to stand for anything in particular: as Hornborg (1999: 153) observes, money does not correspond to any particular concept. It might be more correct so say, however, that money only corresponds to the concept of monetary value, which is really the same thing as saying that it is limited to a very narrow domain of validity.^{xxviii} Still, this means that it does not make sense to say that money is somehow directly given but not thematic while that which it is exchanged for is indirectly given and thematic. Indeed, it does not make much sense to say that a pound sterling is about all those commodities that it might buy. This is simply not what money is used for. Nor is the act of giving somebody some amount of money (to extend this example is the way we did with chess) a way of expressing a desire to possess some particular object. However, such an imperative act may result, if the presentation of the money is accompanied by an instance of “placing-for”, described by Herbert Clark (2003) as a device which is complementary to pointing, that is, in this case, by putting some object on the shop counter to indicate to the clerk that one wants to buy it. But the money does not do the trick: the

placement in itself is enough.

These considerations should be sufficient to suggest that money is really a particular kind of surrogate. It is not in any sense “about” what it can buy; it does not even serve to bring about perceptual enhancement of the things to be brought, as in the case of marks. But money is of course different from other surrogates considered above, similarly to the cultural affordances of chess, in forming a complex system. And this is why Saussure used them both as analogies to language. So just as it might be asked to what extent apes, monkeys and other animals are apt to become chess players, there is a real question whether animals could possibly learn how to handle money.

Some studies conducted within the SEDSU-project involving quantity judgements in capuchins could possibly be taken to have some bearing on this issue (Addessi, Crescimbene, & Visalberghi 2007; cf. Sonesson & Zlatev, forthcoming). Prior to the tests, the capuchins learned the association between a given token and the corresponding amount of reward returned by the experimenter when the token was exchanged. There were two types of tokens differing in shape, material, and colour, one of which was exchanged for three rewards, and the other for one reward. The authors suggest that, by mastering these exchange procedures, the capuchins have shown themselves able to use “symbols”, comparable to those found in human language. This interpretation involves many claims, which cannot be discussed here (but cf. Sonesson & Zlatev, forthcoming). However, if the tokens are symbols then, minimally, they are signs. Yet there is no evidence that the tokens are here used as signs. Since the correlation between some kinds of artefacts and certain quantities of commodities is involved, the comparison to money suggests itself. Money, however, does not function as signs in the full sense. More importantly, in this context, we also saw that money, as a system, is not made up of acts requesting some particular things in exchange for a sum of money. It is not made up of imperative acts, comparable to the kind of pointing most commonly found in apes. But this is exactly what the capuchins appear to have learnt.

System character in language and outside of it

Saussure’s main contribution to linguistics, which, during the first half of the 20th century, inspired the best thinkers interested in the study of meaning, consisted in the discovery of the system character of language (and perhaps of some other semiotic resources, such as chess and money): the idea that, basically, no term had any meaning which it could call its own, its meaning instead being understandable exclusively as the result of the interaction of all the terms contained in the system. This fundamentally semantic conception of the nature of

language was considered outmoded in linguistics already in the late sixties, being substituted by the syntactic definition formulated by Chomsky, although the former conception lingered on in semiotics for one or two decades more.

It is one of the major contributions of Terrence Deacon (1997) to have reintroduced this important idea to linguistics, semiotics, cognitive science and neurology, although, curiously, he attributes this conception to Peirce, who never had any idea of the kind, and then uses it to direct his criticism at Saussure (Cf. Sonesson 2006c). In their recent book on the genesis of grammar, Heine & Kuteva (2007:134f, 264) refer to Deacon precisely when pondering the import of systematicity in language. The trouble with Saussure, in any case, is that he also paved the way for the idea of language being a social phenomenon – but he never properly wedded this idea to the notion of system character, and the whole history of Saussureanism has consisted in splitting the two notions. It is possible, however, that system character is a result of “social intercourse”, as Saussure put it, using what, in the French of his time, was an Anglicism. Heine & Kuteva (2007: 209, 344) observe that grammaticalization requires a linguistic system that “a) is used regularly and frequently within a community of speakers and b) is passed on from one group of speakers to another (or from one generation to the next)”. But since they also argue (2007:313ff) that the lexicon must have preceded grammar, and it is the lexicon that is described by the Saussurean conception, it might be suggested that linguistic structure demanded such a double community of users even before the advent of grammar.

There are several problems with this suggestion. It could be argued that all signs (at least in the sense of symbols or conventional signs) require a system. This is certainly not true of pictures: as I have demonstrated elsewhere (cf. Sonesson 1989, 2005-06), pictures as such are not dependant on any system of interdependent terms, although on a secondary level, they may well acquire such meanings. Nor is it true that, as Deacon (1997: 100) maintains, “there can be no symbolisation without systematic relationships” – if “symbol”, as Deacon claims, should be understood in the sense of Peirce. If I decide with a friend that each time I have a particular shirt on, I want him to drive me home after the seminar, then this is a clear instance of a Peircean symbol. And yet, if we have not decided that not having this particular shirt on means the opposite, then there will not even be a minimal system. If my example seems contrived, then this is not the case with the white walking stick used by blind people in some countries. Somebody not using a white walking stick does not convey the message “I am not blind”, so there is not even a minimal system. On the other hand, the absence of a flag on the admiral ship does signify that the admiral is not onboard (cf. Prieto 1966: 43ff). The latter

thus constitutes a minimal system, but its very minimality puts it on a level rather far from what Deacon is thinking about.

If system character only emerges with language, then chess and money, as we know them, can only be conceived after language, although they may be simpler in other respects. In a new and more interesting sense, semiotic devices such as chess and money would really be what Structuralists called “secondary” to language.^{xxix} But perhaps we need to differentiate better between different kinds of “systems of values”, as the term was used by Saussure. Minimal systems such as those inventoried by Prieto seem a far cry from language as a vast system of interrelated terms, such as it is conceived by Saussure and Deacon. Whatever the usefulness of metaphors such as chess and money (which are not even made up of true signs) for describing language, it seems rather doubtful that they possess any of the complexity found in the latter. We simply know too little about different kinds of “systems of values” – which could, in this context, better be described as different kinds of wholes. Mereology is a study that is just at its beginnings.

This brings us to another objection. Even if chess and money do not require signs, they certainly call for some kind of social interaction between people. And so do of course the minimal systems mentioned above, and even my own example, where an explicit convention is set up. If we understand society along the lines implied by Heine & Kuteva, as a community of people living in the present, and continuing into the future and the past, then this may seem more than is required for playing chess, visiting admirals, or setting up conventions with friends.^{xxx} Here we are rather within the domain of “small groups research”, of dyads and triads. Money, however, appear to be more similar to language in this respect. As I have remarked elsewhere, with reference to the simplistic opposition often made between Piaget and Vygotsky (Sonesson, in press), we need more and better analyses of the very concept of society.

We know, of course, from the study of the chimpanzees Washoe and Nim, the bonobos Kanzi and Panbanisha, the gorilla Koko, the orang-utan Chantek and other apes who have been taught aspects of human language, that great apes are able to handle some kind of system of meanings. However, as long as we lack a better analysis of the nature of the systems that they learned, it is difficult to compare their capacities with those of human beings. Similarly, we know that these animals lived in some kind of (ecologically rather deviant) community, perhaps one without a past and a posterity. But we need to scrutinize much more closely the notion of society if we are to understand the extent to which this makes a difference between animals and human beings.

Summary and Conclusions

Without making any claims to exhaustiveness, I have been concerned here not only with the sign as distinct from the percept, but also with a number of limiting cases, some, such as natural and cultural affordances, still close to being percepts, and at least two others, markers and surrogates, corresponding almost to the definition of signs, but lacking one or another of its essential properties. The general thrust of the considerations developed above has been to suggest that there are many different kinds of meanings, and that, if we want to establish the disparity or accord of semiotic capabilities in animals and human beings, we have to find out more closely what are the differences in the way animals and human beings handle these meanings. In particular, while system character is naturally taken to be an emergent property of complex constellations of signs, such as human language, it has also been encountered in meanings that are, in other respects, simpler than signs, as exemplified by some affordances and surrogates. It is, for example, not clear whether this means that system character does in fact accrue to meanings well before the emergence of signs, or whether signs systems, once they have developed, may project their system character to other meanings – or whether the notion of system character lacks sufficient discrimination. These considerations may explain why, while I appreciate the endeavour to set up general semiotic evolutionary (and developmental) hierarchies, such as those made by Kull (this volume) and Zlatev (this volume), I do not feel ready for the time being to join the race.

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ⁱ Or as I know it: I don't claim extensive knowledge of any other tradition than that inspired by Jesper Hoffmeyer.

ⁱⁱ Except perhaps as the term is abused in Lakoff's by now all too familiar conception.

ⁱⁱⁱ After Husserl, of course, there is hardly any way of doing pure phenomenology, in the sense of staying alone with the phenomena, because there are least also Husserl's writings to contend with – and, in our case, we will have to enter a loquacious dialogue with writings of quite different inspiration – as I did in my earlier work (Sonesson 1989, and as Gurwitsch (1957) may have been the first to do. For an introduction to phenomenology from the point of view of contemporary cognitive science, cf. Gallagher & Zahavi 2008.

^{iv} In fact, Vygotsky (1962) also observes the difference between differentiated signs and other meanings, but he lacks the terminology for capturing the distinction.

^v In a more classically empirical way, the necessity of this distinction may be borne home by studies of children interpreting pictures, according to which the identification of an object present in one picture in another is considerably easier than its retrieval in reality (Lenninger in preparation).

^{vi} In fact, in all his work, Husserl was very much concerned with the difference between what has here been called the content (“noema”) and the referent (“the noematical core”), but he does not seem to discuss it elsewhere in relation to the expression. See the section on perception below.

^{vii} The referent will also ordinarily be more in focus than the sign, if we suppose what in Anglo-Saxon philosophy of language is called “opaque contexts” to be the exception. Cf. Sonesson 1989:193ff

^{viii} Although first formulated independently of these authors, these observations are reminiscent of what is suggested by Bates (1979) and Daddesio (1995).

^{ix} The SEDSU project (for “Stages in the Evolution and Development of Signs Use) was a EU-financed research project involving semioticians, linguistics, psychologists and primatologists from Sweden, Great Britain, Germany, France and Italy, and for which the present author wrote the conclusions, together with Jordan Zlatev (Sonesson & Zlatev, forthcoming)

^x With references to an older article by Costall, Sinha (1988) makes a similar argument for acknowledging signs (“representations”), in addition to affordances, but he seems to be unaware of Gibson's own (somewhat cursory) recognition of “referential meaning” in pictures.

^{xi} The main argument of Arvidson's book is that empirical studies of attention already realised become more comprehensible when replaced in the framework of Gurwitsch's threefold distinction. Unfortunately, I don't think Arvidson manages to prove this. Without Gurwitsch's phenomenological work, the structuring into theme, thematic field, and margin is hard to discern. Empirical attention studies are simply concerned with other properties of attention.

^{xiii} I do not intend to use thematic structuring as a definitional criterion of the Lifeworld, as opposed to the *Umwelt*. However, since thematic structuring supposes consciousness (indeed, as Gurwitsch points out,

intentionality in the Husserlean sense), my opposition is actually the same as that proposed by Zlatev (this volume).

^{xiii} For all I know, this may be wrong as a description of the world of the tick, but it follows from what von Uexküll has to say about it.

^{xiv} In this sense, Deacon (1997: 77ff) is quite right to suggest that iconicity is recognition, that is, the identification of a category, and even “stimulus generalisation”. My critique of Deacon (in Sonesson 2006c) involved the confusion of iconicity with the iconic sign.

^{xv} In Anglo-Saxon philosophy, perceptual adumbrations have customarily been treated as being some kind of intensions, too, but this identification is not very helpful if one is interested in understanding perception as such, not the way in which it is linguistically expressed.

^{xvi} Heine & Kuteva (2007:304) suggest that the presence in petroglyphs of animals without heads demonstrate that parts-whole relationships corresponding to the linguistic head-dependant structure were “conceptually present” 10-15.000 years ago. That seems an overdrawn conclusion. Since petroglyphs are picture signs, factoriality may very well have taken much longer to appear in pictures than in perception, but it does not follow that it appeared at the same time in language.

^{xvii} Writing in 1989, I thought I had made a discovery. However, more or less at the same time, Chris Sinha (1988), in a similar fashion talked about “the socio-cultural ‘affordances’ of cars as complex artefacts”, and, more recently, he has noted “the questionable status of ‘affordance’ as a purely perceptual category” (in press). Meanwhile, Alan Costall (1995) proposed to “socialize affordances”. In Design theory, however, it seems that this socialization has happened as a matter of course, partly inspired by Norman 1999 (Gunnar Sandin, p.c.). The attentive reader will realise that many of the examples in Gibson’s work (the post box, etc) are socio-cultural in nature, but Gibson never comments on this fact.

^{xviii} Many remarks in Husserl’s posthumous papers certainly seem to go beyond this conception, as noted already by Toulemont 1962.

^{xix} For the details of my critique, cf. Sonesson 2006c. Benveniste’s term “domain of validity” will be explained below in the section on money.

^{xx} Clark’s (1996:48f) observation that, in addition to the commonly accepted description of the series of moves made so far, there is also an “annotated record” in which one move may be characterized from the point of view of one player as “a blunder” or “a bold move”, refers to different intensional levels of description. It does not say anything particular about chess as a meaning resource: also a punch on the chin may be redescribed, from the point of view of the agent or patient, as a victory or a defeat.

^{xxi} For some other reflections on Searle’s formula, of which I was unaware at the time of writing, cf. Sinha, in press.

^{xxii} Although the term “surrogate” is sometimes used by Gibson (and, probably without any influence, by Eco) to describe pictorial signs, it is better avoided in this context, because of the suggestion that it substitutes for the object signified

^{xxiii} To see the difference, one may compare with exemplifications (things standing for themselves, for the category of they are members, or for some property they have) and, in particular, what I have elsewhere called pseudo-identities, which are objects having all or most perceptual properties of the thing they stand for, but not those defining them: wax food, which cannot be eaten, the dummy showing the cloths in the shop window (Cf. Sonesson 1989:336ff). While wax food is clearly an exemplification sign, the dummy is perhaps best understood in this context as a surrogate.

^{xxiv} Even a culture may be said to take notes for its own use, in which case we are confronted with what Lotman (1979) called “culture as collective intelligence”, or, perhaps better, in an earlier terminology, as “collective memory” (in the sense of Halbwachs and Bartlett).

^{xxv} Rossi-Landi’s (1983) parallels between signs and commodities may also be relevant here. For some discussion, cf. Sonesson, in press.

^{xxvi} It must be noted, however, that, although he refers to both Saussure and Peirce, Hornborg (2001b) employs the term “sign” in a very wide sense, which includes what we would call meaning, specifically, perception (“sensory signs”).

^{xxvii} A sign system having only one sign, as Prieto (1966: 43ff) argued, would be for instance the white cane which signifies that its bearer is blind. This is so only because the *absence* of the white cane does not signify that the bearer is not blind, which is different from sign systems having more signs, such as the flag of the admiral’s ship, where the presence of the flag stands for the presence of the admiral on board, and the absence of the flag for his absence.

^{xxviii} If most things in our society may be bought for money, then the domain of validity of the money system may not appear to be particularly limited. Here we must separate the intensional and the extensional domain. Money redescribes everything from the point of view of their monetary value. This only becomes a problem when the point of view of monetary value is the only point of view that is sanctioned by society.

^{xxix} The eventuality that iconic and indexical signs only became possible after the sign concept emerged by means of symbolic signs is considered by Sonesson (2006c).

^{xxx} As I remarked above, Heine & Kuteva are not interested in explaining language as a whole, only grammaticalization. I am the one doing the generalization.