Semiosis and the elusive final interpretant of understanding*

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Abstract

While the conceptual history of the sign, as recounted by John Deely in Four ages of understanding, is immensely enlightening, history is never enough. If, before Augustine, it had occurred to no one that such diverse phenomena as are covered by this term had something in common, and if, in the time of Aquinas, Fonseca, and Poinsot, different usages of the term were in competition, the reason is not simply intellectual confusion, but rather that meaning is of many kinds. In this essay, I have shifted the terrain from socio-history to phylogeny and ontogeny, suggesting that, in the child, as well as in the human species, perception is the primary type of meaning, whereas true signs are acquired much later, followed by signs systems and organism-independent artifacts. The whole point of having a semiotic theory, it is argued, is to be able to account for the differences, and not only the similarities, of different kinds of meaning.

Keywords: sign; intentionality; picture; Umwelt; phenomenology; ecological psychology.

In the Fifth Age of Understanding, within socio-history, we will probably come to the conclusion that meaning is multiple, going beyond, but not excluding signs. But, as Peirce well knew, there is no reaching the final interpretant. The monumental narrative involving our thinking about signs and meanings written by John Deely confirms an interpretation you may well reach from observing the contemporary intellectual scene: there is a tendency, throughout the historical deployment of human thinking, to claim either that there are only signs, or that there are no signs at all. If we apply the notion of the ages of understanding instead to phylogeny and ontogeny, we find that meanings, signs, sign systems, and embodied signs each have their age.

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1. Preamble

Though this was no doubt not the intention of the thinkers of the Latin Age, nor of Peirce, the term “doctrine” today suggests a finished body of knowledge with no opening into the future. But, as all semiosis, the brand that studies semiosis is undoubtedly a continuous enterprise. In an old book of mine (Sonesson 1989: I.1.), I proposed to conceive of semiotics as a series of entangled strands of problem areas making up a continuous discussion extending through the ages, which could only be grasped a posteriori by taking a retrospective view of (some restricted part of) this mesh, thus permitting semiotics to be defined and thus applied to new areas and issues. In this sense, semiotics is a tradition, as this is conceived by philosophical hermeneutics (as all sciences are), within which the scholar first must be situated before he can undertake to rework it and extend it. It seems to me, that, in many of his books, and of course most explicitly in Four ages of understanding, John Deely has positioned himself in this way within the tradition of the Latin Age, reinitiating a dialogue that had come to a standstill almost half a millennium ago. He is not only in the business of telling us what thinkers such as Augustine, Aquinas, Fonseca, Poinset, and many others had to say about signs and meanings, but he is offering up their contribution for new discussion and elaboration. In so doing, Deely makes an immense contribution to contemporary semiotics.

The whole of this essay will show how much I had learned from Deely. And yet, if this were all, I would have nothing to add and should have to remain silent. However, if Deely certainly fills in a blank in the official history of philosophy, in particular that strand that leads on to semiotics, it seems to me that his version of the story contains other gaps, the filling in of which is of equal importance to semiotics. Most obviously, it is rather difficult to accede to the version according to which the Modern Age, which (as Deely himself emphasizes) creates the (natural) sciences, is merely a “dark age” of philosophy (outside of what was then “natural philosophy”). Moreover, while Deely is no doubt right, in a literal sense, in claiming that the final chapter of Locke’s Essay did not beget any followers, it remains true that Condillac and his disciples in the “ideological school,” who started out talking about “ideas,” as Locke does in the rest of his book, later on came to conceive the same issues more in terms of signs, to the point where a late ideologue such as Degérando entitles his most important book, much in the manner of Poinset, “On signs.” It is also difficult to accept that, between the Latin Age and the Postmodernity initiated by Peirce (as Deely defines it) and after the failed attempts of the early Moderns, nothing of value happens in philosophy. I do share some
part of the disappointment with “modern philosophy” voiced by Deely, in particular with the more recent varieties of it, such as neo-positivism and neo-pragmatism, but I would like to single out another big hollow in the official philosophical tradition, at least as it is taught in Northern Europe, which is not filled in by Deely, one that should be occupied by Husserlean phenomenology, as it was continued by such thinkers and Gurwitsch, Schütz, and Ricoeur, and which in many ways is parallel to the Peircean conception (as no less a Peirce specialist than Savan has admitted), and also serves to complement it (and certainly more than Heidegger does). Later on, in this essay, I will endeavor to demonstrate the accuracy of this claim.

But what even more seems to me to be lacking in Deely’s history of semiotic thought is the emergence of the social and the human sciences (better termed, with Prieto, the semiotic sciences), the date of which is much more recent than that of the natural sciences. Its first stirring may be noticed in Enlightenment philosophy, and in particular in the work of the ideological school (cf. Gusdorf 1966–1985). Many of the social and the human sciences really were formalized only at the end of the nineteenth century. Many, in particular of the latter, may still not have reached that stage. Since all (or most) sciences come out of philosophy, they can really only be separated from it, in Peircean terms, by the elaboration of methods and models permitting a stricter test of the condition of fallibility, by the constitution of a particular community of researchers, and by a clear appreciation of the distance spanned from the immediate interpretant to the final one. The difference between philosophy and science should therefore not be exaggerated. But it means that what psychologists, sociologists (and certainly also biologists) have had to say about signs and meanings must be considered within semiotics.

Not only do I think that scientific endeavors must also be a part of the semiotic tradition that we have to rework, but I also believe that scientific questions, such as those involving the evolution and development of different semiotic resources, must be at the forefront of our inquiries. While we should not let ourselves by spellbound by science to the point of abandoning the tradition of semiotic theory, I do think we have to take into account the theories as well as the problems handed down to us by proponents of the social and human sciences. This is why, contrary to Deely and some of the thinkers of the Latin Age, I believe we have to distinguish meanings and signs. Only in this way can we account for the similarities and differences in the ways in which different meanings mean. Of course, this claim is pointless, as long as the notions of sign and meaning have not been defined. Yet, numerous semioticians (from Eco to Greimas) have rejected the notion of sign without even asking the question.
what it is, just as, within cognitive science, latter day proponents now re-
ject the notion of representation.

Whatever the reason Fonseca and/or his predecessors may have had
(as recounted by Deely 2001: 391) for distinguishing signs properly speak-
ing and signs in a broader sense, there is nothing intrinsically nominalist
in making such a distinction. Being myself an ancient combattant in the
battle over nominalism (as in my critique of Goodman, essential to my
whole critique of the iconicity critique; cf. Sonesson 1989, 1995), I would
certainly not condone such a stratagem. To me, this distinction simply is
necessary for taking account of both the similarities and the differences
between signs and meanings. Perhaps, then, we should use “sign” for the
general concept, as Peirce and Deely would seem to argue, and pick some
other term for the more particular concept. However, it seems to me that
if we apply Peirce’s rules for the ethics of terminology, according to which
we should not change already established terminology, the term “sign”
would now have to be used in the more restricted sense, just as it would
shortly after Augustine wrote about it, and contrary to what was true at
the end of the Latin Age. Of course, I am not thinking here so much
about the first rule which condemn the use of arbitrary terms, nor of
course about the prescription to follow scholastic usage if possible (and
the whole of Deely 2001 shows that there is more the one usage within
scholastics itself), but on the recommendation not to use terms which

Perhaps it is because he does not discuss the human and the social
sciences, that Deely does not attend to one rather recent branch of
science, so-called cognitive science, which is certainly of the Modern
Age, but in which the term “representation” is used in a way equally all-
compassing to that in which Poinsot, Peirce, and Deely seem to employ
the term “sign.” Or perhaps we should say: with as wide an extension as
the term “idea” in Locke’s Essay (before the final chapter). One may
wonder whether it is really important if all things from mental states to
words are treated as “ideas” or “signs,” for in both cases no distinction
is made. As in Saussure’s classical example, instead of “mutton” and
“lamb,” we have only “mutton,” no matter what we choose to call it.
This is of course a structuralist argument. But structuralism simply means
that the terms applied to a domain serve to delimit each other. In this
sense, Peirce is also a structuralist, albeit not a binary one. Peirce is com-
mitted to the view that any domain will have instances of Firstness, Sec-
ondness, and Thirdness, which will then together exhaust the domain.¹

However, if a structure only consists of negative terms, as Saussure
once claimed, then structuralism will be tantamount to nominalism. In
an early work, his 1942 lectures at the New School of Social Research in
New York, Jakobson (1976) observed that Saussure’s description could only apply to phonemes, and certainly not to words (an insight that contrasts sharply with his own later work, notably his acceptance of LéviStrauss’ self-understanding; cf. Sonesson 1989). If everything is a sign, or an idea, or a representation, this is different to the extent that these terms have to be differently defined. The trouble is, most of those who have based their theories on these terms seem to take their meaning for granted, and what they take for granted is often very different in each case. As Deely shows us, some of the thinkers of the Latin Age did give fairly clear characterizations of the notion of sign. At least the narrow concept of sign, which will be used here, can be further spelled out by attending to what thinkers such as Husserl and Piaget have had to say.

I will be arguing that, in both the classical traditions of semiotics, the one starting with Peirce, and the one inspired by Saussure, the notion of sign is basically taken for granted instead of being defined. A more explicit concept of sign is needed in order to begin answering the fundamental questions of semiotics, both in the systematic and the evolutionary and developmental domains. Language, pictures and (at least some) gestures are signs in this sense. They are also, for all we know, accessible only to human beings. This is a concept of sign that supposes there are other meanings than signs — more elementary meanings, such as those given in ordinary perception.

In this sense, the domain of semiotics is wider than the sign: it is some more general property, which might be described as “meaning” (or “semiosis” or “mediation,” to pick some other Peircean terms). As I have argued in earlier work, there could thus be a semiotics of pictures even if pictures were not signs. However, my claim is that the picture must indeed be a sign, in the precise sense that I am going to introduce. In order to do so, we will have to attend to the place of the picture in the development of the semiotic function. There is of course no real evidence in phylogeny, except for the indirect way of comparing human beings with other animals; and thus the facts have to be searched out in child development as well as in the comparison between cultures.

2. The emergence of pictures and other semiotic resources within the ages of understanding

The different ages of understanding, as envisaged by Deely, take place within the small span of world history starting out in Greek Antiquity, which is commonly known by the human race simply as History. At least explicitly, the passages from one type of understanding to another only
involve a very small part of this history, culture or, more precisely, meta-
culture, the thinking about (the nature of) culture. In any case, it is part
of what Vygotsky has termed socio-history. But socio-history is only one
of the perspectives one may take on history, in the broad sense. There is
also development, or the changes gone through by any infant on the way
of becoming adult, and evolution, the modifications allowing the emer-
gence of (say) human beings out of other animals.

Child development was described by Piaget, more explicitly than by
Vygotsky, in terms of different “ages of understanding.” On Piaget’s ac-
count, the child goes through a number of different stages, enhancing its
capacity for understanding. Of particular importance in the present con-
text, however, is Piaget’s claim that, on the border between sensorimotor
thinking and concrete operations, around eighteen months of age, the
child learns to master the semiotic 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, but only with the
attainment of the semiotic function can it conceive meaning as something
differentiated into a signer and a signified. Taking a cue from Husser-
lean phenomenology, I will add that a double asymmetry must exist be-
tween the entities entering into the semiotic function.

More recently, Merlin Donald has suggested that, in the evolution of
the human kind, separating our race from that of other animals, notably
the higher apes, we have gone through a least four stages allowing for dif-
ferent kinds of thinking, episodic meaning, which we have in common
with many other animals, mimetic thinking, which is a pre-linguistic stage
unique to human beings and perhaps a few higher apes, mythic thinking,
which is characterized by the mastering of language, and then another,
specifically human level, not biologically predetermined, but part of
socio-history, the theoretic stage, which allows for pictures, writing, and,
more broadly, theories and other organism-independent representations.
The mimetic stage, in this sense, comprises everything from tool manufac-
ture, imitation, and gesture. But then, clearly (although Donald does not
say so), the semiotic function emerges in the middle of the mimetic stage.

It will be argued in the following that at least some meanings, such as
words, pictures, and (some) gestures, are signs in a specific sense, in which
this is not true, for instance, about percepts in general, nor about specific
types of percepts, such as animal camouflage, clothing, body parts, (every-
day) behavior, the order in which courses are served in different cultures
(menus), spatial distances such as those studied in proxemics, cultures in
relation to other cultures such as these are studied in semiotics of culture,
the “functional cycle” as displayed by animals and other organism and
conceived in biosemiotics, and so on. Gesture, language, and pictures
appear to be specifically human (excepting some highly enculturated apes): they emerge rather late in ontogeny as well as phylogeny. All this suggests that there is also continuity between meanings and signs. The story told by John Deely helps us pinpoint this continuity. But first we must demonstrate the difference.

2.1. The picture beyond difference and identity

There can be no doubt that the ability to interpret pictures is as unique a property of human beings as is language. However, it is normally taken for granted that the picture sign is simpler, at least in the sense of being evolutionary older, than language. Thus, for instance, those who have tried to teach language to apes have had recourse, at a preparatory stage, to the mediation of pictures. However, there are now reasons to think that, at least in some respects, the picture sign is more complex than language — it appears, it seems, later in ontogeny, if not also in phylogeny. In fact, the necessity of a specific definition of the sign becomes particularly clear from the case of the picture, which, because of its iconic character, supposes both a difference and a similarity between the parts of the sign. For this reason, but also because I have in recent years worked more closely on the picture sign, I will use it as my privileged example.

James Gibson (1971, 1980) has claimed that, while all animals perceive surfaces, only humans are able to see surfaces as having reference. In other words, pictures have “referential meaning”; they contain invariants for surfaces but also for the objects referred to. Gibson thus appears to have a somewhat implicit concept of the picture as being a sign. Julian Hochberg showed that a child nineteen months old who had never seen a picture could readily interpret it, whether it was an outline drawing or a photograph, if he/she were familiar with the objects depicted (Hochberg and Brooks 1962). But Hochberg did not investigate whether the child saw the picture as a picture or as an instance of the category of the depicted object — a picture of a bird as a bird, etc. For the picture to be a sign, both similarity and difference have to be involved.

Commenting on this experiment in a later text, Hochberg (1972: 70–71) himself observes that there either must be an innate capacity for interpreting pictures, or that such an ability must develop at an early stage, and then not from pictorial experience itself, but from the ordinary experience of the world. This result, and Hochberg’s conclusions, are remarkable. To begin with the former, it is obviously incompatible with any
theory, such as that of Goodman or Eco, according to which a picture
acquires its meaning simply by being “appointed” to be the sign of an
object (as noted in Hochberg 1978b: 235). What is interesting about
Hochberg’s conclusions is that the most “obvious” alternative is not
even considered, i.e., that no interpretative capacity at all would be
needed, because the object and its picture are simply “similar.” But of
course this is no serious alternative since there is no similarity between
the picture and its object, except from the point of view of a very super-
ficial phenomenology. If lines on paper are taken as equivalent to the
edges of the object, Hochberg (1978b: 236) notes elsewhere, this is a fact
about the viewer, not about the light at the eye.

At least from the nineteenth century onwards, explorers and travelers,
and later anthropologists and social psychologists, have reported on the
difficulties experienced by members of “savage tribes,” principally in Af-
rica, when they were confronted with pictures for the first time and asked
to explain their content.3 Essentially, these reports would seem to testify
to two very different, and apparently contradictory, obstacles to an ade-
quate pictorial understanding: for either the hero of the story is unable to
make out what kind of object the picture is, and what function it serves,
or he fails to distinguish the picture from what it represents. Typical in-
stances of the first kind of anecdotes are Herskovits’ story about the
puzzled woman who turns the photograph of her own son over again
and again, without being able to understand what it is, and Muldrow’s
description of the Me’ tribe, whose members smell and taste the pictures,
but do not think of looking at them. The second series of anecdotes may
be illustrated by the tale of the tribe panic-stricken to the point of running
away at the sight of a slide projection showing an elephant; and by the
report of another tribe treating photographs of white women as if they
were real people.

Here, then, we encounter in their practical form the very same theoret-
ical issues that have been central to the discussion of iconicity (cf. Sones-
son 1989): the problems of relating the picture to its object, and of distin-
guishing the former from the latter. Differently put, iconicity theories
must expect all human beings to discover the relatedness of the picture
and its object immediately, but some human groups fail to do that; and,
rather more implicitly, these same theories must suppose that we are all
able to tell the picture and its object apart, but this too, it seems, is some-
thing some groups fail to do.4

There are two difficulties at issue here: the difficulties of relating the
picture to its object and that of distinguishing the two. Sometimes, it
seems, the problems consists of finding out that the picture is not identical
to what it shows. The moment after having taken to flight at the sight of
the pictured elephant, the members of the tribe visited by the explorer Lloyd discovered their mistake and returned laughingly to the front of the screen. Of course, the difference between the elephant and its picture was neither unimportant nor obvious to them; but in a moment of potential threat, they were certainly wise to react on insufficient evidence. Since perception seems to start relatively high up on the ladder of abstraction (as showed a long time ago by German Ganzheitspsychologie, cf. Sander and Volkelt 1962, and more recently by Mandler 2004), it is indeed probable that, in a moment of stress, only very gross similarities will be noted, even those that are not ordinarily category-defining. The other story, where photographs of white women are treated as real people, is rather implausible; if not some magical equivalence is meant, then perhaps this behavior must be understood as a kind of social deference to the white men who showed the pictures. Again, more research would be needed to go beyond these anecdotes.

The correlative difficulty, then consists in seeing the similarity. Referring to Herskovits’ puzzled woman, Kennedy (1974: 68) points out that being puzzled over something is very different from seeing it as “mere daubs on a surface. Indeed, mere daubs on a surface would hardly puzzle anyone.” It is conceivable that the woman does recognize her son, but that it seems unbelievable to her that a mere piece of paper is capable of suggesting the appearance of her son. Members of the Me’ tribe, Muldrow tells us, smell the pictures, taste them, bend them, and so on, in short behave like a Piagetian child exploring his world. According to Deregowski (1980: 167, 1976: 20) not only pictures, but materials like paper are unknown to the Me’; therefore, when Deregowski had pictures printed on coarse cloth, animals well-known to the tribe could be identified, although the recognition was still not immediate. In the case recounted by Muldrow, it seems the Me’ were so busy trying to discover the fundamental properties of the paper as an object in itself, that the iconic properties, those making it a pictorial sign of something else, were not noted; other attributes became dominant in their experience of it. It therefore seems (as I suggested in Sonesson 1989) that for something to be a pictorial sign of something else, it must occupy some relatively low position in the particular Lifeworld hierarchy of “things.”

The Ancient Greek painter Zeuxis is famous for having depicted a bunch of grapes in so illusory a manner that even the birds were fooled. Commenting on Pliny’s well-known story, Gombrich (1963: 5–6) claims this was no great feat of Zeuxis’ since, as ethology has shown, animals react to very gross similarities. However, the pigeons studied by Cabe (1980) would apparently not follow suit as the other birds launch their attack on Zeuxis’ grapes. Most experiments purporting to demonstrate the
ability of some animal species to interpret pictures have neglected to investi-
gate whether the animals are also able to tell the difference between
the picture and its object; but Cabe (1980: 335), who makes this observa-
tion, tells us he has taken pains to ascertain that the pigeons of his experi-
ments possess the later capacity (1980: 313–314). If his is correct in his inter-
pretation, the pigeons are aware of both a similarity and a difference.
Indeed, at least the capacity for perceiving the similarity is taken for
granted in a number of experiments where perception in pigeons (and
some monkeys and apes) is studied by means of exposure to pictures (cf.
Fagot 2000). However, none of these articles taken into account the dif-
ference between the picture and the depicted object.

More recent experiments have shown that even children five months of
age look longer at a doll than at its picture (DeLoache and Burns 1994).
However, it does not follow, I believe, that the children see the picture as
a picture. Indeed, nine-month olds, but not eighteen-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. It seems to me that, just as in the case of the
pigeons, this may simply show that the picture and its object are seen as
being different, but not necessarily as constituting a sign-vehicle and its
referent. The real doll is perhaps seen as a more prototypical instance of
the category of dolls; or, alternatively, the real object may be more inter-
esting because of having more perceptual predicates.

Just any similarity and difference it not enough to make a picture sign,
however. That paper is the kind of stuff of which signs, and in particular
pictorial signs, are made, was not obvious to Herskovits’ puzzled woman;
and to the Me’, this material was so interesting in itself that it absorbed
all interest; coarse cloth, however, was easier to conceive in this humble
part, though even now, time was needed to discover what was depicted,
perhaps because the sign function itself had to be discovered. If we sup-
pose the Hochbergian child to understand, not only that given pigment
patterns on paper have something to do with the shoe, the doll, and the
Volkswagen of the real world, but also that the former are signs for the
latter, and not the reverse, then it will not be enough for the child to
have learnt from his experience with objects of the world that the edges
of objects have properties which are shared by contours drawn on paper,
or to be innately predisposed to react to these common properties (cf.
Hochberg 1978a: 136). He must also have acquired, probably from expe-
rience in his particular Occidental Lifeworld, some notion of the relative
low ranking on the scale of prototypical Lifeworld things of a material
like paper, which directs his attention, not to what the pigment patterns
on the paper are as “selves,” but to what they stand for (cf. Sonesson

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1989; 1992a; 1993a; 1996a; 2000a, 2001a, forthcoming). And perhaps he
must also possess some idea of a meaningful organization, which relieves
him from the task of finding a meaning in inkbots, in the dirt on the
road, in the stains he makes with his dinner on the tablecloth and in the
clouds.

Familiarities with paper or cloth are facts of particular cultures. Paper,
which is too prominent to the Me’ to serve as a sign-vehicle, traditionally
carries this function in Western culture. But Sonesson (1989) suggested
that there would probably also be universals of prominence: thus, for in-
stance, two-dimensional objects are felt to be less prominent than three-
dimensional ones and may thus more readily serve as expressions. In this
sense, it is not true that the object is its own best icon, as is ordinarily
claimed — at least if iconic means iconic sign. Indeed, iconicity stands in
the way of the sign function. The objects of the common sense world
are three-dimensional: much less is required for a two-dimensional ob-
ject to be able to represent one of these objects than for another three-
dimensional object to do so (cf. Sonesson 1989, 1992a; 1993a; 1996a;
2000a, 2001a, forthcoming). This is precisely what is suggested by De-
Loache’s more recent experiments with children: not only is the picture
understood later than language in these experiments, around two-and-a-
half years (Deloache and Burns 1994, etc.), but scale models are under-
stood even later, at three years of age, half a year after pictures (De-
Loache 2000). As noted also by DeLoache, this contradicts what is
expected by common sense. But it is reasonable, if the issue is separating
the sign and its referent.

DeLoache (2004) employs the term “double representation” to describe
the necessity for the child to attend both to the picture and the object de-
picted. This is a misleading term, for there is only one representation, that
is, one sign function.5 Rather, in Gibson’s more enlightening terms, there
are invariants for both the surface and the referent in the object, and the
task is to tell them apart, and decide which is most prominent. In fact, the
problem only arises because there is at the same time a sign function and
iconicity. This means that the term “double representation” is not only
misleading: it fails to explain why pictures are easier to interpret than
scale models.

In all Deloache’s experiments, the task is, in one way or other, to find
a hidden object by using information contained in a picture or a scale
model. According to the standard procedure, the experimenter and the
child are at first outside the room in which the child is to search for the
toy. The child cannot see the picture or scale model and the room at
the same time. The experimenter tells the child that she will hide the
toy in the room and then come back and ask the child to search for it.
She returns to the child and points out the appropriate location in the picture/scale model telling it “This is where Snoopy is hiding in his room. Can you find him?” If the subject fails in the first search it is once more shown the picture and given more explicit prompts. Twenty-four month olds do not pass the retrieval test, but thirty-month olds do; there is no difference in performance using photographs or line drawings. However, when the whole procedure is conducted verbally, children pass the test already before twenty-four months old; and when a scale model is used, only thirty-six month olds pass it.6

Another one of Deloache’s experiments seems to indicate that the sign function is at least part of the problem. When the experimenter, instead of talking about a model and a real room, tells the children that the search has to take place in the same room, which has shrunken since it was last seen, the task is accomplished much more easily (DeLoache et al. 1997). The difference, clearly, is that the two instances are here connected by a narrative chain rather than by a sign relationship. In another experiment, DeLoache (2000) places the scale model behind a window-pane, in order to make it more similar to a picture, with the expected results. In fact, however, two things happen here that would have to be separated: the object becomes less prominent, because it has less the appearance of three-dimensionality; and it is put into a frame, which creates a center of attention.

If understanding pictures is as difficult for children as DeLoache suggests, then we should not expect animals to be able to do so. I have already proposed some alternative explanations for the behavior of Cave’s pigeons. On the other hand, primatologists, as mentioned at the beginning of this essay, tend to take for granted that the apes to which they are trying to teach language already understand pictures. There are only a few regular investigations of apes looking at pictures and scale models. Itakura (1994) reports that enculturated chimpanzees can interpret line drawings; Kuhlmeier and colleagues (Kuhlmeier, Boysen, and Mukobi 1999; Kuhlmeier and Boysen 2001, 2002) have even shown their chimpanzees to understand scale models. It is difficult to know what to make of these results, already because these apes are all enculturated, which is to say that they are trained in many of the semiotic resources that in ordinary circumstances are peculiar to the human Lifeworld. Moreover, it should be noted that, while the children were introduced to a model of a room that they had never seen before the training-phase, the apes were confronted with a model of their own familiar environment. In addition, a lot of facts about the subjects and the experimental procedure are not clear from the articles. At present, it would therefore be premature to draw any conclusions about the abilities of the great apes in this domain.
It is clear, however, that, in order to understand the peculiarity of the picture, we need a concept of sign that can account for the difference and similarity between perception and pictures, on the one hand, and of pictures and scale models on the other.

Archaeology should ideally be able to tell us something about the origin of pictures in the prehistory of human beings. However, those artifacts that clearly are pictures, such as the well-known Ice Age rock carvings, are products of a very recent prehistory indeed, and this even holds true, in view of the length of prehistory, of those artifacts that, perhaps less convincingly, are claimed by some archaeologists to be pictures or other kinds of man-made artifacts, such as, notably, sculptures and calendars (such as the Berekhat Ram figure and Marshack’s putative calendar; cf. Bahn 1998; White 2000; Elkins 1996, 1997). No matter how early such artifacts are in the end shown to be, however, there is no way of establishing that no pictures existed before them. The first drawings may not have been made on rocks, but perhaps on sand, on clothing, or on human skin, and on other highly perishable materials.

Archaeologists are wont to ask: Is the Berekhat Ram figure an object dated to between 233,000–800,000 BP (according to Bahn 1998: 86), the likeness of a woman? But before this question can be formulated another question must be posed: Do the traces of abrasion left on it show regularity sufficient and, at the same time, not too extensive as to suggest “anthropogenic” movements (that is, intentional manipulation by human beings)? Although it has never been claimed to be a picture, Marshack’s “calendar,” if it were indeed a calendar, i.e., another kind of artifact with a cultural imprint, would have to evince some kind of regularity in the very way its traces are disposed.

Indeed, Marshack uses a microscope to detail the sequences of differently disposed strokes that are found on the Bâton from Le Placard, Charente, arguing (as quoted by Elkins 1996: 189; 1997: 60) that the strokes must have been purposefully made, since the sequence of figures appears odd, deviating from a near-regularity, and thus, he supposes, they cannot by purely ornamental, but must be some kind of notation representing a lunar calendar. If there is some justification for this claim, it can never come from the scrupulous observation by means of a microscope realized by Marshack, contrary to what the latter claims, but must stem from the comparison of the configuration of the strokes on the bone with another system of organization, independently known to us, the sequences of lunar phases. If such as correlation between the inscription on the bone and the lunar system is successfully made, there is every reason to suppose the inscription to be purposefully created (cf. Sonesson 1996b). The problem, however, is that the only reason for taking the
scheme of interpretation corresponding to the lunar phases to be known
to man during the Upper Palaeolithic is the very success of this correla-
tion. Two, otherwise unjustified suppositions thus rely on each other for
their substantiation.

There are actually two problems here: one is that Marshack claims to
observe something without the aid of any scheme of interpretation; the
other is that the scheme he eventually introduces does not account for
his putative observations. In fact, in spite of his microscope, as Elkins
(1996) has shown, Marshack has failed to observe numerous details of
the configuration appearing on the bone, which makes it less probable
that a correlation may be made to the lunar calendar, and thus that the
inscriptions are intentional. It is of course possible that Marshack’s lunar
calendar is identical to the principle of pertinence used by prehistoric
man, however implausible that may seem from his observations. From
the point of view of pictorial semiotics, von Däniken’s (1973) claim that
certain pre-technological images show wristwatches seems at least as well
substantiated as Marshack’s lunar scheme (Sonesson 1994a).

The picture must be understood as a sign, which implies that it is both
similar to what it represents, and different from it. This is where it be-
comes problematic: even though pictures are not conventional (to any
large extent), contrary to what has been argued by many semioticians,
some experience is needed to be able to interpret them as such. We know
that children need some time to gain this knowledge, and other animals,
with the possible exception of some of the great apes, never acquire it. Ar-
chaeology is of very little help in understanding the origin of pictures, be-
cause some artifacts that have come to our knowledge cannot be reliably
shown to be pictures or other kinds of meaningful displays, and some
artifacts that are clearly pictures cannot be interpreted to show all what
they are usually taken to show, because of the lack of an appropriate
knowledge of context. Moreover, if some picture could be shown to be
the earlier one of those of which we are aware, this does not mean that it
is the earliest of the pictures made by humankind, not only because there
may be earlier pictures to be found, but also because the first pictures
may have been made on sand, or some other highly precarious surface.

2.2. The sign within the two classical traditions of semiotics

In semiotics, it often seems as the only game in town consists in showing
that the concept of sign needed is provided by Peirce but not Saussure, or
perhaps sometimes the reverse. For those who want to go on playing this
game, what follows will be doubly disappointing: not only will I claim
that the conceptions of Saussure and Peirce are not as different as they
may seem; but I will also submit than neither of them, on their own, is
able to resolve our problem. It remains true of both the main traditions
of semiotics, the Saussurean and the Peircean one, that, if we suppose
they aim at accounting for the sign, considered as a new “age of under-
standing” in phylogeny as well as ontogeny, they have never really of-
ered any definition of it; and the same thing no doubt applies to the
notion of representation in cognitive science. This goes a long way to
explaining why many semioticians (such as Greimas, Eco, etc.) have re-
jected the sign, without much of an argument, and why the second gener-
ation of adepts to cognitive science (such as Lakoff, Johnson, etc.) now
seems to be doing the very same thing with respect to the notion of repre-
sentation. There might however be good reasons for retaining the notion
of sign (or representation) for some kinds of meanings, while denying its
application to other instances. So before we even ask ourselves whether
there truly is such as thing as the sign, we have to be clear about what it
is. This involves not only deciding the criteria for analyzing a phenome-
non of meaning into separate parts, but also those allowing us to posit
an asymmetrical relation between these parts: not only does the expres-
sion have to be separate from the content, but the former should stand
for the latter, not the reverse.

It should be clear by now why we need such a concept of sign: the pic-
ture has been shown to be something difficult to grasp, both to small chil-
dren and to non-human animals, because it supposes the consciousness
of a difference as well as of a similarity. Perception and other direct acts
of consciousness are not difficult in this way: they appear to be fairly
straightforward to children and animals alike, rather early on in the de-
development of the former. This also applies to some unconscious or semi-
conscious conclusions drawn from perceptual premises, as we shall see. In
the concept of representation of classical artificial intelligence, as well as
of a lot of contemporary cognitive science, simple acts of perception and
sign consciousness are inextricably confused. Although Saussure’s con-
cept of sign was no doubt unambiguously restricted to meaningful entities
comprising two relata that were clearly differentiated form each other and
related by an asymmetrical relation, French structuralists such as Barthes
and Greimas later on apply semiotical terms to objects of meaning
that could hardly be conceived to fulfill these requirements, such as
food, clothing, and the world of perception (cf. Sonesson 1989). As John
Deely (2001) has shown, philosophy written in Latin during the Middle
Ages and in the following centuries long hesitated between a restricted
definition of the sign, derived from the works of the church father August-
tine, and a much broader one, according to which the contents of
consciousness should be considered signifiers for which the things of the perceptual world were the signifieds, finally opting for the latter solution in the work of Jean Poinsot in the early seventeenth century. Deely thinks the dissolution of this all-embracing concept of sign was a serious failing of early Modern philosophy. My view, however, is that this conceptual tightening of the sign concept is a clear gain coming out of latter-day philosophy, although it must be regretted that the reasons for narrowing down the sign concept were never clearly brought out. This should in no way be construed as a nominalist stance, as it might have appeared during the Latin Age, as Deely shows (cf. Sonesson 1989, 1995). On the contrary, it is precisely because signs and percepts are so different, although they also have something in common, that they must be terminologically separated.

This is why it will be necessary to immerse ourselves not only into what I will call the semiotics of the Saussure-Piaget tradition but also into that of the Augustine-Husserl tradition. Saussure merely posited two units making up the sign, but Piaget introduced the criterion of differentiation in order to separate signifier and signified. Saint Augustine, who has often (as so many others) been hailed as the first semiotician, defined the sign (in the translation of Deely 1982: 17–18) as “a thing which, over and above the impression it makes on the senses, causes something else to come into thought as a consequence.” In his later work, Deely (2001: 221) renders Augustine’s definition somewhat differently: “a sign is anything perceived which makes something besides itself come into awareness” (but he also quotes another definition more similar to the one referred to above). Perhaps “perceived” is the same thing as “impression made on the senses.” As we will see, it is not the sense character that we will retain here, but the division into two items clearly separated from each other, one of which is more directly accessible. Husserl’s definition of the sign, which describes the expression as something that is directly perceived but not in focus, and the content as being indirectly perceived while at the same time being the focus of the relation, could be taken as a way of specifying the Augustinian suggestion. It implies that the sign is asymmetrical in a double sense: one part of it is more in focus than the other, and the other of its parts is more directly accessible than the first one.

There are several ways to read Peirce and, conceivably, Saussure: one, very common one, consists in looking upon these writings as a devout Christian approaches the Bible, as the source of all truth, even that discovered since the time of writing, using some often very subtle operations of interpretations to extract it. A procedure similar to this one may actually be justified, if the aim is not to develop an adequate semiotic theory,
but simply to establish what the teachings of the founding fathers really were. Another approach, which is not the one I am going to preconize either, is, of course, to read Peirce and Saussure as that rival potentate, the Devil, is supposed to read the Bible, by inverting the meaning of every line: this may at first appear to be a purely fictional possibility, but I do think a procedure very much like it was applied by the French structuralists as well as Eco in the sixties and the seventies of the last century, less perhaps to Saussure and Peirce, but more to one of the most eminent followers of the first, Hjelmslev (cf. Sonesson 1989).

If we cannot read our classics like true converts, nor like the Devil, there remains, of course, the possibility of reading them like God (or the Pope): and while this may seem a much too presumptuous alternative to be seriously entertained, it comes close to what I think we should actually do, if we are able to conceive of a eminently Peircean God, not, of course, the one in which Peirce happened to believe, but one that functions according to the Peircean model of the mind; a very much fallible God who is always still trying to approach the truth, without ever getting there, yet always approaching it a little more, seeing a little further, because he is standing on the shoulders of giants. Our giants are, of course, Saussure and Peirce, Hjelmslev, Prieto, and many others. And so, in order to start entangling our chain of metaphors, we will say that Peirce, Saussure, and the others were wise men, great scholars, whose thinking is still worth taking seriously today; but they were also very much fallible, and so, in our own extremely fallible way, we may sometimes be able to do a little better than they did, often because we have access to the work of others scholars they did not know about. It should be added that the intrinsic fallibility of all work, even that of giants, is compounded, in the case of Peirce and Saussure, by the fact that almost none of their works were ever published in their lifetime or even made ready for publication, and, especially in Peirce’s case, by the fact that his thinking evolved during the long spate of time he was working on semiotic issues, and that he appears to have made a lot less close reading of his own earlier work than his latter-day commentators do.

It should be clear, then, that we cannot be interested here in discovering “what Peirce really said”; rather we will be making use of his concepts to the extent that they fit with what has since then been established by semiotical reasoning and psychological findings, and we will criticize and revise them accordingly. On the other hand, there can be no doubt about Peirce being a very profound thinker (though perhaps not in every paragraph he wrote), so I really think we should try to do him full justice. When there are several possible interpretations of his works, and when different passages contradict each other, we should choose the one most
favorable to him — from the point of view of present-day semiotics. Al-
though I love Peirce very much, I love truth even more: so while some
things I say in the following may be false as interpretations of Peirce, I
still think they are valid as components of contemporary semiotic theory.

This brings us to the notorious issue of Saussurean binarity as opposed
to Peircean triadity, which is a point of contention, which will be com-
pletely absent in the following. In spite of Peirce’s explicit denial, I do
think he was something of a triadomaniac. But that is not the real issue.
It may often be convenient to order things in rows of threes. But the
whole question whether there are two or three of something has no sense
whatsoever, before we know what kind of entities we are talking about. The
question whether something has two or three parts has no meaning before
determining the domain for which the model is valid, as well as the crite-
ria (the relevant properties) according to which the division is made.

If the domain is the sign, made up of signifier and signified, plus reality,
the Saussurean sign definition is also triadic. But it may reasonably be
maintained that reality is simply that which is excluded from the Saussur-
ean sign as being irrelevant (although Saussure never was as explicit
about this as the early Eco). However, it might be argued that the referent
is important in the Saussure conception, as being that which is divided
differently by different languages and other semiotic resources. From an-
other point of view, the domain may be said to be the signifier, the signi-
fied, and the relation between them, which would definitely make the sign
triadic. And this is a more valid point, since the sign as a unit of signifier
and signified is very important to Saussure. Then again, the Saussurean
sign might really be claimed to be polyadic: to Saussure, as is well-known,
even the sign is a superficial manifestation of the multifarious interrela-
tionships making up the sign system, in which everything determines ev-
everything else.

On the other hand, there is certainly no denying that the Peircean sign
is triadic, but these triads are then subdivided, where that which is of
the nature of Secondness has two parts, and that which is of the nature of
Thirdness has three parts. If all these distinctions are criterial, Peirce’s
definition actually has six levels. If the triadity of the Peircean sign really
had involved something like the expression, the content, and the real
world (as many have been fooled by Ogden and Richards to think), then
it would have been present also in the Saussurean conception, the third
item appearing as that which is explicitly excluded from consideration
(and which is then reintroduced by most post-Saussureans). It rather
seems as if the distinction between the content and the referent were mim-
icked in Peirce’s work by that between the immediate and the dynamical
objects, so when we add the interpretant, we end up with four objects.
However, just as there are two objects, there are three interpretants (but only one representamen), so there are really six instances of the sign altogether. Using another kind of reasoning, one may instead add the utterer and the interpreter, and then end up with a pentagram (cf. Dines Johansen 1993). Indeed, some unpublished passages in Peirce’s manuscripts (for instance, MS 318, quoted in Jappy 2000) seem to suggest that the object is simply the content as conceived by the addresser, and the interpretant is the same content at it appears to the addressee (cf. discussion in Sønson 2003a). If object and interpretant correspond to something akin to speaker’s meaning versus listener’s meaning, then the communication models (notably that of the Prague school) also account for it. If the interpretant has something to do with the notion of “ground” appearing in Peirce’s early texts, then it figures prominently in the Saussurean tradition in the form of the distinction between form and substance, mentioned below. This last interpretation is favored, in my view, by Peirce’s (EP 2: 269) contention that “Thirdness [e.g., interpretants] is found whenever one thing brings about a Secondness between two things [e.g., the relation between representamen and object].”

For our purpose then, we will say that the Saussurean sign is made up of expression and content (signifiant/signifié), which both can be separated into form and substance — and it is separated from reality (the referent). “Form” here is that part of the expression that cannot be changed without giving rise to another content, and vice-versa; “substance” is all the rest. The Peircean sign consists of expression (representamen), content for the initiator of the sign (object) and content for the target of the sign (interpretant). The sign “tends” towards reality. This is why the “dynamical object” is closer to reality (and further from the original sign situation) than the “immediate object”: similarly, the “dynamical interpretant” is closer to reality (and further from the original sign situation) than the “immediate interpretant”; but even further from the sign situation is the “final interpretant” which is only virtually present. Perhaps it would be more correct to say that the object is that which influences the creator of the sign so as to create it, while the interpretant is that which influences the receiver so as to interpret it. Then the different kinds of objects and interpretants would be phases of this process.

There are no doubt some real differences between Saussure and Peirce, however. Saussure is really only interested in the linguistic sign whereas Peirce wants to characterize all possible signs. Peirce sometimes seems to extend the sign so far that it covers everything. Peirce’s concepts can only with difficulty be separated from a specific philosophical conception of reality. Peirce’s model seems to be more involved with the contact between the sign and reality, while Saussure is concerned with their difference.
But they have one thing in common: none of them really tells us what a
sign is. It often seems as if anything that has three (or two) parts would
thereby be a sign. It is true that this is a problem less with the Saussurean
than with the Peircean conception, since Saussure is adamant about pos-
ing verbal signs as the best instance of the category. But everything obvi-
ously hinges on what kind of relationship there is between these two or
three parts. This is no doubt implicit in terms such as “expression” and
“content.” But if the concept of sign should be of any use, that which is
implicit has to be spelled out.

2.3. From pebbles to feathers: The notion of differentiation

Let us start out from what might be called the Saussure-Piaget tradition. I
am not sure whether anybody has ever stood in that tradition, except, of
course, Piaget, who took all his semiotic vocabulary (opposing the sign to
the symbol) from Saussure.10 What Piaget added to Saussure was most
obviously a developmental perspective, in particular on the level of on-
togeny. But, just as importantly, though it is less commonly observed (in
fact never, except for Sonesson 1992b, etc.), he realized that all meanings
are not signs, and he even began groping for a definition of that which
accounts for the specificity of the sign. More decisively, applying the de-
velopmental perspective to the sign, he made it into a particular stage of
development (although, unlike Vygotsky, he never allowed semiosis to
define that stage).

When Peirceans and Saussureans quarrel over the presence of two or
three entities in the sign, they never pause to ask themselves what kind
of objects, defined by what type of features, are involved: but, clearly, be-
fore we know what we are counting, it makes no sense to start counting at
all. The whole question becomes moot, if there is no reason to analyze
meaning into two parts, as suggested by both contemporary cognitive sci-
ettists and old-time existentialists and Lebensphilosophen. What, then, is
it that permits us to determine that an object endowed with meaning is
made up an expression, or “representamen,” and a content, or “object”
(analyzable into “immediate” and “dynamic?”? Peirceans and Saussur-
eans alike would no doubt agree that signs have something to do with
the classical formula, often quoted by Roman Jakobson (1975), aliquid
stat pro aliquo, or, as, Jakobson also puts it, more simply, with renvoi, or
reference. What this means, however, is not at all clear.

Before we can separate signs from other meanings, we have to spell out
those criteria for something being a sign that are simply taken for
granted, both in the Peircean and in the Saussurean tradition. This can
be done by combining what Husserl says about appresentation (something that is *directly present* but not *thematic* refers to something that is *indirectly present* but *thematic*) and what Piaget says about the semiotic function (there is a *differentiation* between the latter two instances, in the double sense, I take it, that they *do not go over into each other in time and/or space*, and that they are perceived to be of *different nature*; cf. Figure 1).

According to Piaget the *semiotic function* (which, in the early writings, was less adequately termed the symbolic function) is a capacity acquired by the child at an age of around eighteen to twenty-four 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 that is distinct from the
signified. Indeed, Piaget argues that the child’s experience of meaning antedates the semiotic function, but that is does not then suppose a differentiation of signifier and signified in the sign (see Piaget 1967 [1945], 1967a, 1970). The notion of differentiation, which is normally overlooked, is fundamental in my view. In fact, Vygotsky (1962) also observes the difference between differentiated signs and other meanings, but he lacks the terminology for capturing the distinction.

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 eighteen months, but only because they do not suppose any differentiation between expression and content. In this way, Piaget really anticipates the critique formulated by Colwyn Trevarthen (see Trevarthen and Logotheti 1989), according to which the child is attuned to meaning, not only from birth, but in fact already at the end of the foetal stage: cooperation, and the capacity to pick up others’ meanings, is somehow built into the organism. Clearly, meaning is here used in a more general sense than that characteristic of the semiotic function, that is, the sign, as I have tried to develop this notion taking my hints from Piaget and Husserl: it includes perception, particularly of an interpersonal kind.

It should be kept in mind that Piaget is talking here about the capacity for producing language, pictures, and so on, not the ability to interpret them. As in the case of language, the capacity to understand pictures must precede any ability to produce them. However, if understanding really arrives as late as DeLoache claims, as we saw in the last section, there is still a conflict with Piaget’s view.

The signifier of the index, Piaget says, is “an objective aspect of the signified”; 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, 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.” Between “indices and signals,” on the one hand, and full signs, on the other, moreover, Piaget places “symbols,” understood more or less along the lines of Saussure. These “symbols” are already differentiated, Piaget claims, but their parts are still somewhat “adherent.” In addition, this adherence seems to apply as least as much to the relation between the subject and the semiotic resources he or she makes use of as to the relation 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. Nevertheless, it is important to note that, while the signifier of the index is said to be an objective aspect of the signified, we are told that in the sign and the “symbol” (i.e., in Piaget’s terminology, the conventional and the motivated variant of the semiotic function, respectively) expression and content are differentiated from the point of view of the subject. Curiously, this distinction between the subjective and objective points of view is something Piaget seems to forget about in the following. 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 form the latter from his point of view. Only then would he be using an index, in the sense in which this term is employed in semiotics, that is, as true sign. In terms of socially better-established signs, a similar example would be the bull’s head used to indicate, above a market stand, that beef is sold there. Although in France, for example, sculpted heads of bulls or horses are employed outside the relevant shops, it is still possible to find real heads used in traditional markets in some countries.

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. 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. 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.15

On the other hand, the child and the adult will fail to differentiate the perceptual adumbration in which he has access to the object from the object itself; indeed, they will 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, to use Piaget’s example, in the rather different sense of being a proper part of it.16 In the Peircean sense an index is a sign, the relata of which are connected, independently of the sign function, by contiguity or by that kind of relation that obtains between a part and the whole (henceforth termed factorality). But of course 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. Perception is perfused with
indexicality.\textsuperscript{17}

An index, then, must be understood as indexicality (an indexical relation or ground, to use an old Peircean term) plus the sign function. Analogously, the perception of similarities (which is an iconic ground) will only give rise to an icon when it is combined with the sign function. I therefore cannot agree with Deacon (1997: 76) when he claims 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. As always, there are passages in Peirce’s work that 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 that still have to be “embodied,” as Peirce suggests regarding another division of signs:

A Qualisign ... cannot actually act as a sign until it is embodied; but its embodiment has nothing to do with its character as a sign. A Sinsign ... involves a qualisign, or rather, several qualisigns. But these qualisigns are of a peculiar kind and only form a sign through being actually embodied. (\textit{EP} 2: 291)

An indexicality, then, is not a sign; it is simply the perception of two things being connected. It will be a sign only once these items are experienced as being detached from each other. The foot touching the earth is an indexicality; the traces left on the soil is an indexical sign. The branch of the tree that is still part of the tree is an indexicality; in the theatre, however, where it is cut off from the tree, it may well be an indexical sign for it. Strictly speaking, iconicity, in Peirce’s understanding of the term, is not even a relationship; but once two iconicities are experienced together, they form an iconic ground, which is a relation, but still not a sign. It is the experience of bark on one place being similar to bark higher up or lower down; or of the tree being similar to another tree. A picture of a tree, however (or even a tree on a theatre scene) is an iconic sign (cf. Sonesson 2003a and Figure 2).

While the introduction of the notion of differentiation is a substantial accomplishment on the part of Piaget, he unfortunately never spells out its import. As I have mentioned above, he defines it in terms of the subject’s point of view, but then uses examples in which the disconnection already exists objectively. The sense of objectivity and subjectivity employed here should of course be related to the common sense world (that is, the \textit{Lifeworld}) in which human beings stake out their life. Indeed, what Piaget is concerned with is precisely the “construction,” in his terms, by
the child of the common sense world. Once this edifice is finished, the
common sense world disjoins that which is subjective (which does not
mean particular to one individual, but may very well be the “world
view” of a particular language, the way of segmenting reality opposing
tables to language generally, etc.) from that which is objective (which
is, strictly speaking, the subjectivity common to human beings). But, in
his later reasoning and examples, Piaget seems to identify differen-
tiation from the subject’s point of view with conventional, or arbitrary, signs, in
the Saussurean sense. This will not do, for already “symbols,” in the
Saussurean (and indeed Piagetian) sense, are differentiated in this way.
Indeed, Piaget claims that “symbols,” in his sense, are differentiated, but
still “adherent,” but it is not clear what this means, and he never uses
examples of this type to illustrate differentiation. More importantly,
perhaps, he fails to see that some indexical functions are not mere
“pointers,” but real, differentiated signs, such as is the case with the
pointing finger and the tracks as interpreted by the hunter.18

Indeed, the basic problem may well be that, in Piaget’s work, differen-
tiation is never defined. I have suggested above that differentiation may
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 sig-
ified. But these are perhaps less criterial attributes than features helping
us to pick our examples out. The basic idea, again, is no doubt in the op-
position between the two items being subjectively, rather than objectively,
separate from each other. It is here that, probably without knowing it, Piaget is the most Saussurean — and, at the same time, most true to Deely’s Latins. I am thinking about the passage in which Saussure says that semiotic resources are points of view taken on material things (and, we could add, on the world generally). It is in becoming a standpoint on the world than the sign separates out from the world. This is the origin of what Deely (2001), following the Latins, calls “mind-dependent” (ens rationis) versus “mind-independent being” (ens reale). Interestingly, Searle (1995), who talks about “language-dependant” and “language-independent facts” in what appears to be a similar sense, sometimes slips into the alternative terms referring to the mind (and more so in Searle 1999), although he would certainly deny having read any philosophy earlier than Austin. In the next section, I will suggest that this division is incomplete.

Nor should differentiation be identified with displacement as defined by Hockett (1977), which (rightly, no doubt) appears as one of the “design features” of language in most introductory textbooks. As in the case of the tracks left by the hunted animal, displacement may be a consequence of differentiation. But differentiation only comes on its own when the sign is in presence of its referent, for then it allows us to construe reality in different ways (“subjectively,” as Piaget would have said), picking out that which is relevant, and ignoring, or downplaying other features.

We must be careful not to confuse different relationships involving the sign. Differentiation, in Piaget’s sense, must pertain to the signifier and the signified, which are always equally present in the here and now of the sign user, since they are mental (or, in most cases, intersubjective) entities. To the hunter, both the signifier and the signified of the tracks are present here on the soil (or, to be precise, in his perception of the soil). But the signified contains the information that it is itself only part of a larger whole (or rather something once contiguous to a larger whole) which was present here at an earlier time, but which is now elsewhere, more precisely further on in the direction indicated by the tracks. And the displacement, in Hockett’s sense, has taken place between that signified whole and the real animal, which is now, present somewhere else.

When the sign, whether it is a stretch of discourse, a picture, or an animal track, is present along with the referent, however, the signified allows us to refocus the referent, in other words, to present it in a particular perspective. For this is requires independence: that is so say, a body of its own. Thus, the notion of differentiation itself needs to be clarified.
2.4. Different ways of “connecting significations”

The notion of differentiation has certainly not been satisfactorily defined in these pages: expression and content, I have suggested, do not go over into each other in time and/or space, and they are perceived to be of different nature. To get any further, both phenomenological and experimental investigations are in order. Some clarification of this issue when be given when we attend to the Augustinian-Husserlean tradition for the definition of the sign. All we can do at present is pointing out the contrast obtaining between signs and other kinds of meaning.

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 (as defined in Sonesson 1989). According to Husserl, two or more items may enter into different kinds of “pairings,” from the “paired association” of two co-present items (which we will call perceptual context), over the “appresen-
tative 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 center of attention for consciousness (cf. Husserl 1939; Luckmann 1980).

Whereas the items forming the sign are conceived to be clearly differentiated entities, and indeed as pertaining to different “realms” of reality, the “mental” and the “physical” in terms of naïve consciousness, the items of the perceptual context continuously flow into each other, and are not felt to be different in nature. In fact, both content and expression of the sign are actually “mental” or, perhaps better, “intersubjective,” as classical Saussurean linguists would insist; but we are interested in the respect in which the sign user conceives them to be different. Piaget’s notion of differentiation is vague, and in fact multiply ambiguous, but, on the basis of his examples, two interpretations can be introduced: first, the sign user’s idea of the items pertaining to different basic categories of the common sense Lifeworld; and, in the second place, the impossibility of one of them going over into the other, following the flow of time or an extension in space.

Suppose that, turning around a corner of the forest path, we suddenly catch a glimpse of the woodcutter lifting his axe over his shoulder and head. This experience perfectly illustrates the flow of indexicalities which do not stop to become signs: it is sufficient to observe the woodcutter in one phase of his action to know what has gone before and what is to come: that he has just raised his tool from some lower level, and that at the next moment, he is going to hit the trunk of the
tree. If we take a snapshot of one of the phases of the woodcutter’s work, we could use it, like the well-known traffic sign meaning “roadwork ahead,” as a part for the whole or, more oddly perhaps, as a phase signifying contiguous phases. There has been a radical change from the flow of indexicalities occurring in reality, for not only is there now a separation of expression and content “from the point of view of the subject,” but this separation has been objectified in the picture. The picture is a sign, in the sense of it having a signifier which is doubly differentiated from its signified, and which is non-thematic and directly given, while the signified is thematic and only indirectly present.

The perceptual continuum may be reconstituted in a film, but not in a series of pictures. However, when we ask the woodcutter to stand still for a moment (like in a “tableau vivant”), his position as such, before it is transformed into the motif of a picture, is already a sign for the whole of the action, although the directly presented position does not seem to be non-thematic, continuity is only provisionally interrupted, and expression and content are felt to be of the same nature. If, at this very moment, Vesuvius erupts, and our woodcutter is buried in many meters of volcanic ash, he will have been transformed, when he is rediscovered many centuries later, into a sign of the person he was, and of the particular phase of his earlier action, as well as of many other things, and as such he will be doubly differentiated, non-thematic and directly given, while the person he was and the act he accomplished is now thematic and indirectly given. His packed lunch, however, bread having become carbonized, is less clearly differentiated.

As Manetti (1993) has shown, divination, together with medical symptoms, were the first semiotical phenomena studied; and they all have the form, as later formalized by the Stoics, that if something is the case (p), then something else is also the case (q). Indeed, this was that which to Antiquity, before Augustine, was known as a sign (sequent), which what we would call linguistic signs were not (cf. also Deely 2001). Indeed, a linguistic signifier (or a pictorial one) is not readily conceived as an effect permitting as to conclude to the cause, identified with the signified. Our wood-cutter, surprised by the ash falling down (p), may well conclude that Vesuvius in erupting (q); but at this very moment, this is a continuous phase of a complex event sequence, in which one phase foreshadows another, not a sign, in the sense of a signifier being differentiated from a signified. More precisely, in Husserlean terms, it is a protention occurring in the here and now of the woodcutter, pointing forwards to the next immediately following moment, and through that the moments to follow. To the archaeologist, on the contrary, the carbonized body of the wood-
cutter is a true sign, not only a logical implication. It is to some extent outside of time and space.\textsuperscript{21} Something like Husserl’s criteria are required, but perhaps not sufficient, in order to separate the sign function from other dyadic relations between (more or less) differentiated members. It is possible, no doubt, to conceive of the sign as some kind of mapping between “mental spaces,” as suggested by Fauconnier (1994: Fauconnier and Sweetser 1996), but this is not of much use as long as we have no criteria for separating the sign from all other instances of such mappings listed by Fauconnier, such as counterfactuals, analogy, metaphors, metonymy, propositional attitudes, modalities, pragmatic terms, frames, models, and so on. This is of course not to deny that some valuable generalizations may be stated at this level.\textsuperscript{22}

Another case in point is one of the arguments employed by Fodor to posit the existence of a “language of thought”: that in order for us to be able to redescribe common sense psychology in terms of brain functioning, there must be something material, parallel to the expression of language that in the brain corresponds to the neutral pathways, which is related to something mental, parallel to the content of language. Indeed, Fodor’s argument relies on expression and content of the “language of thought” being isomorphic, that is, highly iconical, so that whatever is said to happen to the expression also can be said to happen to the content, but I am not concerned with this specific claim here. Whatever the merit of this argument, the comparison of the relationship between brain anatomy and consciousness in terms of expression and content is fallacious. The neural pathways are not that which is immediately given but not in focus, and consciousness is not indirectly given but in focus. Between neural pathways and thinking there is no doubt some kind of causal relationship, no matter how we choose to construe it; but there is no semantic relation. Indeed, the expression of a sign is not even material, considered as a form (in Saussurean terms).\textsuperscript{23}

Eco (1984: 216–217) has repeatedly denied that the mirror is a sign: instead of standing for something it stands before something: the mirror image is not present in the absence of its referent, is causally produced by its object, and is not independent of the medium or channel by which it is conveyed.\textsuperscript{24} Indeed, in his most recent work, Eco (1998: 22; 1999: 371) extends this description to some phenomena, notably television, which most people would naturally consider to be pictorial signs. With reference to our more precise concept of sign, I really see no reason to deny the sign character of the mirror: something that is comparatively more direct and less thematic, the mirror image, stands for something that is less direct and more thematic, the object in front of the mirror; and the person or
thing in front of the mirror is clearly differentiated from the image in the mirror.

The fact that the person represented by the mirror sign is present contiguously to the sign is in no way an embarrassment to this conception: in principle, this case is equivalent to the label with the names and the pictures of the different species habitually appearing on a birdcage. Of course, animals and small children may have difficulty making the required differentiation, but that is exactly what happens in the case of signs, as Piaget has indicated. The kind of differentiation that does not obtain for animals and children is apparently not the one involving a discontinuity in time and/or space (i.e., they do not think the mirror image is part of themselves) but rather that concerned with the different nature of the two correlates (i.e., the cat takes its own image to be another cat).

The mirror and the picture, just like verbal language, have in common being founded on a differentiation between two units which are asymmetrical in a double sense, first because one of the units is more immediately accessible to consciousness than the other, and second because the second units is more in focus than the first. This is not true of all kinds of conjunctions of “mental spaces,” nor does it apply to Fodor’s “language of thought.” The kind of asymmetry involved here is of course not at all opposed to the symmetry permitting the listener to recover the same signified from the signifier that prompted the speaker to choose it in the first place, or the possibility to look up the French equivalent of an English word in a dictionary, as well as going the inverse way.

The mirror clearly has a “body” of its own. The framed picture even more obviously has one. What is at stake, however, is much more than the distinction, often made in cognitive science, between internal and external representations. To see that, we must take a step back to the world before the emergence of the sign. Before doing so, however, I will finish this section by suggesting that basis of the sign concept, as it is understood here, is contained in the notion of ground, as it has sometimes been used by Peirce.

2.5. The ground as a principle of relevance

To go from the concept of iconicity to the iconic sign, as well as from indexicality to the indexical sign, we have to ponder the meaning of a notion, sporadically, but often significantly, used by Peirce, i.e., the notion of ground. As applied to signs, I will here suppose, iconicity is one of the three relationships in which a representamen (expression) may stand to its object (content or referent) and which can be taken as the “ground” for
their forming a sign: more precisely, it is the first kind of these relationships, termed Firstness, “the idea of that which is such as it is regardless of anything else” (CP 5.66), as it applies to the relation in question. In one of his well-known definitions of the sign, a term which he here, as so often, appears to use to mean the sign-vehicle, Peirce (CP 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.”

Some commentators have claimed that here Peirce is talking about some properties of the expression, whereas others favor the content. According to one of Peirce’s commentators, Greenlee (1975: 64), the ground is that aspect of the referent that is referred to by the expression, for instance, the direction of the wind, which is the only property of the referential object “the wind” of which the weathercock informs us. Although Greenlee does not say so, this would seem to make the ground into that which separates the “immediate object” (that part of the content which is directly given through the sign) from the “dynamical object” (roughly, the referent, i.e., meaning connected to the content but not given in the sign but present in other past or future signs). On the other hand, Savan (1976: 10) considers the ground to consist of the features picked out from the thing serving as expression, which, to extend Greenlee’s example, would include those properties of the weathercock permitting it to react to the wind, not, for instance, its having the characteristic shape of a cock made out of iron and placed on a church steeple.

If we have to choose between Greenlee’s and Savan’s interpretations, all quotations from Peirce that have some bearing on the issue would seem to favor the latter. Indeed, Peirce talks about “the ground of the representamen,” and even claims that the representamen is connected to three things, “the ground, the object, and the interpretant.” This corresponds to the interpretation given by Savan, but is opposed to that of Greenlee. Yet, since we are concerned with relations (signs being always relations, and Peircean signs doubly so), it could be argued that “the ground of the representamen” is not the ground (only) in relation to the representamen, but to the whole sign. The passage in which Peirce relates the representamen to the ground, the object and the interpretant does indeed suggest representamen and ground is not identified, but suggestion of a fourth instance is more difficult the accommodate.

Nevertheless, it seems to me that, in order to make sense of the notion of iconic signs, we must admit that both Greenlee and Savan are right: the ground involves both expression and content (cf. Figure 1). Rather than being simply a “potential sign-vehicle” (Bruss 1978: 87), the ground would then be a potential sign. Indeed, if we take seriously Peirce’s claim
that the concept of “ground” is indispensable, “because we cannot com-
prehend an agreement of two things, except as an agreement in some
respect.” (CP 1.551), then it must be taken to operate a modification on
both the things involved.

The operation in question, I submit, must be abstraction or, as I would
prefer to say, typification. In one passage, Peirce himself identifies
“ground” with “abstraction” exemplifying it with the blackness of two
black things (CP 1.293). It therefore seems that the term ground could
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 direc-
tion, to the exclusion of all other properties of the wind, and its expres-
sion 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 re-
sembling 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 Saussur-
ean would say, the “form” connecting expression and content: that which
must necessarily be present in the expression for it to be related to a par-
ticular content rather than another, and vice-versa. This phenomena in
well-known from linguistics, where often conventional rules serve to pick
out some properties of the physical continuum, differently in different lan-
guages, which have the property of separating meanings, i.e., of isolating
features of the expression on the basis of the content, and vice-verse. The
difference is, of course, that in the iconic ground, the relation that deter-
mines one object from the point of view of the other is basically non-

If the ground is a form of abstraction, as Peirce explicitly says, then it is
a procedure for engendering types, at least in the general sense of ignoring
some properties of things and emphasising others, for the purpose of plac-
ing them into the same class of things. And if it serves to relate two things
(“two black things” for example, or “the agreement of two things” in
general), it is a relation, and it is thus of the order of Secondness, i.e.,
“the conception of being relative to, the conception of reaction with,
something else” (CP 6.32). All this serves to underline the parallel with
the principle of relevance, or pertinence, which is at the basis of structural
linguistics, and much of semiotics inspired by it (Hjelmslev and Prieto,
notably). But we could take this idea further, adding to the notion of
ground a more explicitly constructive aspect. To many structuralists (the
Prague school notably), relevance is a double movement, which both
serves to downplay non-essential elements and to add others which were anticipated but not perceived; thus, it depends on the twin principles of "abstractive relevance" and "apperceptive supplementation" embodied in Bühler’s Organon model (cf. Figure 3 and Sonesson 1989: II.4.2.), as well as in the Piagetean dialectic between accommodation and assimilation (cf. Sonesson 1988: I.3.1).

I would not like to conceal the fact that there are many other passages in Peirce’s work (many of which are given by Eco 1998: 44, 1999: 59) that seem to state rather clearly that the ground is Firstness, which means that it cannot be a relation, nor any kind of abstraction, as I understand it, that is, no typification. Deely (2001: 343, 641) clearly condones this interpretation. It seems to me, however, that Firstness would be a true description of the respective lists of properties of the thing serving as expression and the thing serving as content, but not of the principle establishing the relation between them. Indeed, a quotation from Peirce (CP 1.551–1.553; also EP 1: 1–10) given by Deely (2001: 642–643), but not commented upon in this sense, seems to suggest that Peirce would reserve the term “ground” for the portion of the expression singled out and use the term “correlate” for the corresponding part of the content. This would however seem to do away with the relational character of the notion involved. Peirce would apparently call the first list of properties “ground” and the second list “correlate,” but I would prefer to use the term “ground” for the whole phenomenon, distinguishing, when appropriate, the expression ground from the content ground (cf. Sonesson 2003a).

It is perhaps not too difficult to understand how Peirce might have been thinking. Beyond the varying descriptions of Firstness, it appears as
something that is entirely self-contained, with no relation to anything else. Firstness is not only the first element appearing but it is also in itself without any further parts or connections. Secondness, however, in this sense, is both the second element introduced, in relation to a first element which already exists, and also something which consists of two parts, one of which connects to an element of Firstness, while the other is the connection itself. Thirdness, then is the third element coming to the fore, but at the same time it has three parts, two of which connects to the two earlier elements, and the third presenting something new (cf. Figure 4). This explains that Peirce has described Thirdness as “branching” (manuscript quoted by Parmentier 1985: 36–37). If, in the end, Peirce’s complete system may be described by a triangle, it is not because the latter connects three points, as in the Ogden and Richards version, but because Firstness is a point, Secondness is a line with a hook, and Thirdness is a fork.25

Understood as Firstness, the ground is simply a (set of) point(s). It is the correlate, which is Secondness, which brings about the point of view that transforms the list of properties into a selective list of properties. In this context, this means that the expression is only defined as expression from the point of view of the content. This is correct as far as it goes. But it must also be true that the content is defined as content only from the point of view of the expression. Indeed, Peirce would seem to recognize this is making the distinction between the immediate and the dynamical object. But, unlike the principle of relevance of the Saussure-Hjelmslev tradition, Peircean theory does not appear to be able to account for this mutuality. Peirce’s (EP 1: 5) discussion does not really concern the relation between expression and content: he talks for instance of the letter “p” being turned over so that it looks like a “b,” or vice-versa.

Figure 4. The general model of being as semiosis, according to Peirce
Here clearly we are comparing (which is precisely the word used by Peirce) one item to another, so makes sense to claim that the relationship is produced in one item taking the point of view of the other. But in the sign, as understood here, this comparison is mutual.26 It has been suggested by Deely (2001: 343, 641) that the notion of ground is equivalent to what is known in scholastic philosophy as the “formal object.” It may at first seem that this would support my interpretation. In fact, however, the formal object turns out to be that which describes the domain to which particular sense organs are receptive: the eyes to differentiated lights, the ears to sound, smell to odours, touch to textures, etc. This is of course a kind of principle of relevance, but a very broad one indeed. Such a notion could perhaps account for “the blackness of two black things” as an instance of differentiated lights (where the abstraction would separate blackness out from other properties of the hue and of the things to which they apply). But it seems that the “respect” in which there is “agreement between two things” would often have to be much more precise to characterize a sign relationship. However, apart form the five external senses, medieval philosophy distinguished a synthetic sense (called “common sense”), memory, imagination, and estimation. This would seem to open up the application of the concept of formal objects considerably. If formal objects are indeed “ten formally distinct cognitive channels” and may be defined as “whatever is directly and essentially attained by a power and by reason of what whatever else is attained is attained” (Deely 2001: 344), then it may perhaps have something to do with what I have suggested here, but it remains considerably less specific.

2.6. **Summary**

Studies of human phylogeny and ontogeny have shown there to be different kinds of meaning, attained at different points of evolution and development. It is convenient to employ the term sign, as used originally by Augustine, but more recently, or more precisely, by Piaget and Husserl, to describe a late stage in the development of meaning, characterizing not only language, but also pictures, symbolic play, and at least some gestures. Pictures, notably, can be shown to require for their interpretation not only an awareness of a difference as well as a similarity between expression and content, but also a double asymmetrical relationship between the latter. Neither Saussure nor Peirce offers any real definition of what the sign is. Nor is the notion of representation in cognitive psychology defined. The discussion whether the sign has two, three or more parts

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26. From page 545 of the document: **Semiosis and the interpretant of understanding**
has no meaning before we have determined the domain that we are analy-
izing and what criteria we will apply to its segmentation. Those who
have rejected the notion of sign or representation, such as Greimas in
semiotics, and contemporary cognitive scientists such as Lakoff and John-
son, have never defined that which they reject. Instead of rejection the no-
tion of sign, we have to clarify it, so at to separate it form other notions
of meaning, which we will call mediations. The sign, in our sense, sup-
poses the concomitant awareness of at least two items, which are subject-
ively differentiated from each other, while one of them is directly given
but not thematic and the other indirectly given and thematic. The signs is
thus different from other mediations, such as intentionality, in which one
item is both directly given and thematic, while the other is neither, and
implicational relationships, which are not differentiated. In this sense, pic-
tures are signs, but they refer to intentional relations, and they contain
implications.

3. Meanings beyond signs: From Umwelt to Lebenswelt

It can hardly be denied that perception is imbued with meaning. But this
does not mean that it is built up of signs. Perhaps the most clearly articu-
lated claim for perception (and the corresponding action) being endowed
with meaning is the functional cycle defined by von Uexküll, the Umwelt,
different for every animal species. Although Ernest Cassirer (1942: 29,
1945: 23), the proponent of “symbolic forms,” may have been the first
one outside of biology to take account of von Uexküll, he does not even
mention the fact that, to von Uexküll, the model of the functional cycle is
a theory of meaning. Cassirer’s symbols are like our signs. In philosoph-
ical phenomenology, as described by an unrelenting follower of Husserl,
Aron Gurwitsch (1964: 176–177), 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 Gur-
witsch (1964: 262) 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. Criticizing other psychologists,
Gurwitsch notes that the carrier of meaning is not part of the meaning
of a sign, unlike what happens in perception. In the end, Gurwitsch may
not be very clear about the difference, but he does explain in which sense
perception is involved with meaning: it is made up of perspectives (noe-
mata), which are integral parts of bigger wholes. To show this, Gurwitsch
takes recourse with Gestaltpsychology. As I have formulated the distinc-
tion elsewhere (Sonesson 1989), perception involves wholes that are more
than their parts; signs have to do with something which is *something else* than what they stand for. Peirce (CP 4.3), of course, ended up recognizing that “to attempt to make the word *representation* serve for an idea so much more general than any it habitually carried was injurious.” “Mediation” might be better, he muses.

3.1. Signs and mediations: The Fonseca-Peirce connection

The concept of sign or representation employed here does not involve ordinary perception being an instance of it: our way of being in the world is not to be likened to the presence at some kind of private theatre. Latter-day cognitive scientists are therefore quite right in rejecting the notion of representation of their forebears. They are wrong, I submit, to reject all kinds of representation (to the extent that it corresponds to the semiotic function). More in particular, they commit a serious error by not defining representation before deciding that is has to be thrown out.

Curiously, John Locke, who is on some accounts the father of semiotics (or at least of the term), similarly seems to treat signs as being on a par with ideas, where an idea is to be understood as any kind of taking account of the facts of the outside world. Thus, the experience of redness, or of a red book, is in some ways parallel to the word “red” or the syntagm “red book.” This is not only strangely reminiscent of what we find in “classical” cognitive science, but it also seems to correspond to at least some usages of the term “sign” found in the work of Peirce. Moreover, it accords with some notions of the scholastic philosophy current in the Middle Ages. While I do not think there is any direct link between cognitive science and scholasticism, this connection is quite apparent in the case of Peirce (and perhaps Locke). As any reader of Peirce must have noted, he quite often quotes scholastic writings, and, as Deely points out, particularly those of the followers of Pedro da Fonseca, on which more will be said below. However, although Deely (1982, 1994) seems to taken a different view of the matter, I believe most of Peirce’s definitions of the sign are more appropriately construed as corresponding to (potentials for) the sign function, as suggested above. On the other hand, many of his examples do not seem to confirm to it (see examples in *EP* 2).

Deely (2001: 590) suggests that Locke’s last chapter, in which Locke proposes to see all of philosophy, apart from physics and ethics, as a doctrine of sign, would require the reworking of the whole book, substituting “signs” for “ideas.” It might be argued, however, that if you take the domain described by the words “signs” and “ideas” and put them together, it does not matter much whether you call all of it “signs” or “ideas” (just
as it does not matter much, to reverse a classical Saussurean example, whether the French use “lamb” or “mutton” for both the domains covered be these terms in English — semantically, of course, because phonetically, this would be another matter). A reasonable retort would be that it is different to project the model of the sign to the domain of ideas, and the model of the idea to the domain of signs. It is not clear, however, what exactly is the difference between these models. However, the followers of Locke in France, who certainly took their name from the concept of ideas, the “ideological school” (Pincavet 1891; Gusdorf 1966–1985), ended up talking very much about signs (Degérando 1800). Taking a clue from Deely, I will suggest that the sign model, as opposed to the model of ideas, is relational. But that does not mean that all relations are properly construed as signs.

As was noted above, the church-father Augustine seems to have been responsible, certainly not for inventing, but for making explicit the common sense notion of sign on which later thinkers, such as Saussure and Husserl (and, at least in his definitions, Peirce) are tacitly building: it is, he tells us (in the convenient paraphrase of Deely 1994: 58) “something which, on being perceived, brings into awareness another besides itself.” Thomas Aquinas already had some misgivings about this definition, without ever daring to reject it outright. The followers of Aquinas in Paris may have been somewhat bolder. In a written form that has come down to us, however, we first know this criticism from the works of Pedro da Fonseca, who was active in Coimbra on the Iberian peninsula in the sixteenth century. To Fonseca and his followers in Coimbra, the definition of the sign must be considerably broader: a sign is anything that serves to bring into awareness something different from itself, whether the sign (in the sense of the signifier) itself becomes subject to awareness in the process or not.

If the sign itself does not have to be perceived in order for us to come to an awareness of that which is signified, Fonseca described it as being *formal*; but if the sign cannot lead to the awareness of anything at all unless it is itself perceived, he called it *instrumental* (cf. Deely 1982: 52, 1994: 58, 2001: 414). Put in more convenient terms, a sign may either consist of a signifier (expression) that has to be perceived as such in order to usher into the perception of the corresponding signified (content); or it may consist in a signifier that is not ordinarily perceived as such but still somehow serves to mediate the perception of a signified. Thus, Fonseca pointed to an analogy, but also to a distinction, of which at least the latter seems to have been lost even on latter-day semioticians and cognitive scientists. If so, this would belie the origin of the distinction in the nominalist ambience (cf. Deely 2001: 390).
What is called here an instrumental sign clearly is that which Husserl, following Brentano, has described as the fundamental trait of consciousness, intentionality, that is the property of being directed to that which is outside of consciousness. Brentano (1885), whose concept of intentionality was taken over by Husserl and more recently by Edelman (1992), himself tells us he derived the idea from scholastic philosophy. Deely (2001: 404) claims it was introduced into scholastic philosophy in the twelfth century as shorthand for indicating the essential relationality of psychological phenomena. In fact, when closely considered, Fonseca’s observations really go against the grain of the by now familiar identification of our awareness of the world with the sign. It echoes Husserl’s as well as Gibson’s description of the perceptual act as something that points beyond itself without itself being present to consciousness (cf. Sonesson 1989: III.3.2). Indeed, Deely (2001: 411) argues that to Fonseca, formal signs are not properly speaking signs:

Hence may be gathered the most striking difference between instrumental and formal signs: since indeed formal signs do not have to be perceived by us in order for us to come to an awareness of the thing signified by the perception they structure; but unless instrumental signs are perceived, they lead no one to an awareness of anything. (Fonseca quoted by Deely 2001: 413)

More exactly, in what in here called a formal sign, the “sign” cannot be perceived, if we are to gain a proper awareness of the thing signified; for such an awareness is only possible in what James Gibson calls the “pictorial,” and Edmund Husserl calls the “phenomenological,” attitude, in which the content of consciousness, and not the thing cognized, becomes the theme of the mental act. This is exactly what does not happen in the familiar Lifeworld, as but Gibson and Husserl have pointed out. Indeed, the “pictorial attitude,” similar to a picture, is “indirect perception,” whereas ordinary perception is “direct.”

When Gibson (1978: 228) observes that, when we are confronted with the-cat-from-one-side, the-cat-from-above, the-cat-from-the-front, etc., what we really see is all the time the same invariant cat, he actually recovers the central theme of Husserlean phenomenology, according to which the object is entirely, and directly, given in each of its perspectives or noemata (see Husserl 1939, 1962a, 1962b, 1973; and Sonesson 1989: I.2.2). In a similar fashion, Husserl’s favorite example is the cube (or perhaps the die), which can be observed from different sides. In Gibsonean terms, these are “the surfaces of the world that can be seen now from here” (Gibson 1978: 233). Husserl’s cube and Gibson’s cat instantiate the same phenomenal fact — for it is a phenomenal fact, and not an experimental one, also in Gibson’s work.
Just as Husserl called into question the conception of his contemporary Helmholtz, according to which consciousness is like a box, within which the world is represented by signs and images, from whose fragmentary pieces we must construct our perceptions (cf. Küng 1973), so Gibson’s strawmen are the followers of Helmholtz, the so-called “constructionists” (who have recently reemerged within cognitive science, e.g., Hoffman 1998), who claim that hypotheses are needed to build up perceptions from the scattered pieces offered us by sensation (cf. Sonesson 1989: III.3.3).28 At least superficially, however, there is an important difference; for whereas Husserl rejects the picture metaphor of consciousness, by showing Brentano and Helmholtz to be in error in their very conception of pictures and other signs because of ignoring the transparency of the expression to the content (cf. Küng 1973), Gibson (1978) instead emphasizes the dissimilarity of the picture from a real-world scene, thus showing the numerous experiments using pictorial stimuli to study normal perception to be seriously misguided. And yet, to both Husserl and Gibson, normal perception gives direct access to reality, while Gibson thinks pictures represent a kind of indirect perception, and Husserl (1980) tells us (cf. Sonesson 1989: III.3.6) that they are “perceptually imagined.”

To perceive surfaces is a very different thing from perceiving marks on surfaces, Gibson (1980) maintains. Depth is not added to shape, but is immediately experienced. In fact, 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, but the markings on these surfaces have only gained importance to man, notably in the form of pictures.

The marks, produced by what Gibson calls the graphic act, can be deposits, traces, lines, or shadows projected on the surface. They may be produced by finger tracing, drawing, painting, or engraving, with a tool such as a stylus, brush or pen; or otherwise a simple device, like the ruler or the compass, may be used, or a complex one, such as the printing press, the gadgets of photography, or the projector of lantern slides (Gibson 1980: xii, 1978: 229). Surfaces have the kind of meaning that Gibson elsewhere calls “affordances”; the markings on surfaces, however, have “referential meaning.” Without discussing the exact import that should be given to the term “affordance,” we may safely conclude that “referential meaning” is a property of what we have called the semiotic function. That is, surfaces do not stand for other surfaces, but the markings on surfaces may possibly do so. The pattern of a surface and the pattern on a surface are different, and can usually be distinguished by an adult. The surface on which a “graph” has been executed can be seen underneath the “graph.” However, a surface may be decorated, regularized, textured, painted, or embellished in other ways without acquiring a referential
meaning; and deposits of dirt or blots of pigment may be left on the sur-
face without the surface being made to stand for something. The two
cases, intuitively describable in terms of the opposition between order
and disorder, are not distinguished by children.

To Gibson, then, the picture is a surface among other surfaces before
becoming a sign. Gibson (1978: 231) observes that, besides conveying
the invariants for the layout of the pictured surfaces, the picture must
also contain the invariants of the surface that is doing the picturing: those
of the sheet of paper, the canvas, etc., as well as those of the frame, the
glass, and so on. Although Gibson does not use the term, he clearly de-
scribes the picture as a sign, in the strict, Augustinian sense of the word:
as a surface that, on being perceived, brings into awareness something
beside itself. Gibson never specifies what he means when he claims that
surfaces are only seen to stand for something else by human beings, in
contradistinction to animals and children. If he meant to suggest that
surfaces can never be taken to be something else than surfaces by animals
and children he was clearly wrong: we know that even doves may react
the same way to a picture as to that which is depicted (cf. Sonesson
1989: III.3.1). The difficulty, clearly, consists in seeing, at the same time,
both the surface and the thing depicted. In other words, in consist in mak-
ing a differentiation: in telling the “body” of the sign apart from the
“body” of the object to which it alludes.

We should grant Fonseca the insight that there is some kind of analogy
between signs and intentional acts. However, to use the term sign in both
cases dangerously suggests that there is no important distinction to be
made. The difference as well as the similarity can be spelled out: inten-
tionality (formerly known as formal sign) is the kind of relationship in
which the first item is not thematic and not in focus, and where the sec-
ond item is thematic and in focus.

In his late life, Peirce realized that all his notions were too narrow: in-
stead of “sign,” he reflected, he really ought to talk about “medium” or
“mediation” (manuscript quotations given in Parmentier 1985). Also
Ernst Cassirer (1942, 1945) sometimes used the term “mediation” (that
is, “Vermittlung”) in a more general sense of meaning than “sign” (which
he called “symbol”), notably comprising the Umwelt ascribed to animals
by von Uexküll.29 In the following, we will use the term mediation for this
general sense of meaning which Fonseca called sign and to which Peirce
sometimes also may be hinting.30 Mediation, in this sense, has a least a
double aspect, even if we exclude signs: it corresponds to implicational re-
lationships such as those called signs by the Stoics, and it also involves
intentionality in the sense of Brentano and Husserl. In the former respect,
it seems to have something to do with Gibson’s “affordances,” and with
Piaget’s notion of “connecting significations.” Once we have taken a closer look at the ways in which ordinary perception is imbued with meaning, however, it will be easier to analyze the notion of intentionality, as related to what is known, in other traditions, as the psychology of propositional attitudes.

3.2. The ecology taken for granted: The Lifeworld

The idea of a common sense world has reappeared numerous times in philosophy as well as in the social sciences, sometimes perhaps suggested independently by different scholars. Husserl posits the Lifeworld so as to explain the foundation on which the models of the natural sciences are constructed, both serving as the primary objects studied and transformed by the model, and as the common sense world in which the scientists are accomplishing their work: indeed, you cannot treat the accelerator permitting you to study the electrons as being at the same time a bundle of electrons itself. Students of Husserl such as Aron Gurwitsch, Alfred Schütz, Maurice Merleau-Ponty, and Herbert Marcuse considerably extended, not the meaning, but the function of the concept of Lifeworld, using it to explain social reality itself. We owe to Schütz, in particular, the description of the Lifeworld as “the world taken for granted.” The “commens” characterized by Peirce (EP 2: 478) would seem to be a similar domain of shared assumptions. When the psychologist James Gibson postulated the world of “ecological physics,” so as to explain the possibility of immediate perception, where the older school of constructionists had to suppose complex calculations, his does not refer to Husserl explicitly anywhere in his writings, but he often uses the same phrases and examples. Greimas certainly took the idea of a semiotics of the natural world from Husserl via Merleau-Ponty. Common sense has always been the basis of Anglo-Saxon philosophy, from the British Empiricists to the Oxford school. At long last, however, even this tradition has come to appreciate the gap, diagnosed by Husserl, between the contemporary natural sciences and the world of our experience, postulating both a “naive physics,” and a “common sense psychology,” which together would seem to make up the Lifeworld. In a more general sense, what Searle (1995: 127) calls the “background” would also seem to correspond to the Lifeworld, as does, if Searle is right about his parallel, a lot of things written by Wittgenstein and Bourdieu. Coming from a very different tradition, Jakob von Uexküll introduced the notion of Unwelt to serve as some kind of world taken for granted of the animals — although, of course, in a deeper
sense, the tick and his kin do not have choice of taking anything for
granted at all.

Within semiotics proper, A. J. Greimas (1970: 49) suggested that there
could be a cultural science of nature, a *semiotics of the natural world* —
which was concerned, then, with the world which is natural to us, just as
a particular language is our “natural language” (Swedish, English, Span-
ish, German, etc.). This amounts to an attempt to consider the traditional
domain of the natural sciences from a human point of view. One of the
cases Greimas mentions but does not dwell on is fire, which would nor-
mally be considered the subject matter of physics and chemistry. How-
ever, if it is reduced to the meaning it has for us, then, depending on the
particular culture and context involved it may stand for the ancestral
gesture thought to mark the beginnings of civilisation, for the operat-
ing force of steel furnaces, for one of the four elements, the universal
converter of the alchemists, the conflagration of the neighbor’s house,
the infernal flames, the cosy fire place in the country house, the log fire
of the barbecue party, the cowboy’s watch-fire, and so on (cf. Sonesson
1989: 26–29). When fire appears in a particular culture, in a ritual, a
film, or a picture, its presence its probably motivated rather by one of
the aforementioned meanings or similar ones than by the chemical for-
mula. In some of these cases, fire is a sign, in the others it is a functional
object.

Historically, meanings of this kind have constituted “epistemological
obstacles,” as Bachelard (1949) put it, for the quantitative reduction,
which is a prerequisite of all research in the natural sciences. The result
of Bachelard’s *psychoanalyse du feu*, which is really a social psychology
of early attempts at explaining fire, strangely echoes Arnheim’s (1966:
63) observation, that it takes a very peculiar attitude to see in fire a collec-
tion of shapes and colors rather than “the exciting violence of the
flames,” though of course the chemists have to go beyond the shapes
and colors too. There seems to be room for a study of the meaning of
fire, quite apart from what natural science tells us about it. In this sense,
fire is a category, like the phoneme, which introduces discontinuities in
the perceived world, and which subsumes many, somewhat differing
instances. Quite independently of the presumed identity of the chemical
formula, the fire of Hell and of the cosy fireplace may or may not have
semantic features in common.

But Greimas was not the first to conceive of a cultural science of na-
ture. His semiotics of the natural world, together with Husserl’s science
of the Lifeworld, and “ecological physics” as invented by the perceptual
psychologist James Gibson are all sciences of normality, of that which is
so much taken for granted that it is ordinarily not considered worthy of
study (cf. Sonesson 1989, 1994a, 1994b, 1996a, 1997). Another “science of normalcy” is the time geography of Torsten Hägerstrand (1983), which is concerned with general invariants of space and time, which tend to be trivial, rather than exceptional in kind, and which impose restrictions on the actions of individuals. So is of course “naive physics” as conceived in cognitive science.

It may seem strange to put together ideas and observations made by a philosopher, a psychologist, and a semioticians; yet these proposals are largely the same; indeed, there are indications that both Greimas and Gibson took there cue from Husserl (the former via Merleau-Ponty). Greimas, Gibson, and Husserl all felt the need for such a science because they realized that the “natural world,” as we experience it, is not identical to the one known to physics but is relative to human beings. Husserl’s Lifeworld as well as Gibson’s ecological physics, but not Greimas’ natural world, takes this level to be a privileged version of the world, “the world taken for granted,” in Schütz’s phrase, from the standpoint of which other worlds, such as those of the natural sciences, may be invented and observed (cf. Sonesson 1989: 26–29, 30–34). Indeed, since he tells us language and the natural world are the two main divisions of semiotic systems, Greimas probably thought of them as equally being representations, not in the wide sense of Fonseca or Peirce, but in that of French structuralism, constructivism in perceptual psychology and classical cognitive science. Moreover, while Greimas’ semiotics of the natural world largely seems to be a kind of lexicon of the meaning of things, Husserl and Gibson tried to formulate a set of general principles, which underlay all our doings in the everyday world.

It is a basic property of the Lifeworld that everything in it is given in a subjective-relative manner. This means, for example, that a thing of any kind will always be perceived from a certain point of view, in a perspective that lets a part of the object form the center of attention. As we noted above, Gibson observes that when we are confronted with the-cat-from-one-side, the-cat-from-above, the-cat-from-the-front, etc., what we see is all the time the same invariant cat. To Husserl, this seeing of the whole in one of its parts is related to the etc. principle, our knowledge of being able, at any one point, to turn the dice over, or go round the house, to look at the other sides. This principle applies to the temporal and the spatial organization of the world alike. In time, it accounts for our expectancy, at every moment, that life will go on, or that something will change, or something more definite, such as that the dice will turn out to have a certain number of eyes on the hidden sides (the protensions), as well as our knowledge that we existed in the moment immediately preceding the present one, that the dice did so to, and perhaps also our memory.
of the sides of the dice we have seen before, and the context in which they
dice appeared (the retentions).32

Every particular thing encountered in the Lifeworld is referred to a
general type. According to Schütz, other people, apart from family mem-
bers and close friends, are almost exclusively defined by the type to which
they are ascribed, and we expect them to behave accordingly.33 Closely
related to the typifications are the regularities, which obtain in the Life-
world, or, as Husserl’s says, “the typical ways in which things tend to be-
have.” This is the kind of principles tentatively set up which are at the
foundation of Peircean abductions. Many of the “laws of ecological phys-
ics,” formulated by Gibson (1982: 217), and which are defied by magic,
are also such “regularities [that] are implicitly known”: that substantial
objects tend to persist, that major surfaces are nearly permanent with re-
spect to layout, but that animate objects change as they grow or move;
that some objects, like the bud and the pupa transform, but that no object
is converted into an object that we would call entirely different, such as a
frog into a prince; that no substantial object can come into existence ex-
cept from another substance; that a substantial detached object must
come to rest on a horizontal surface of support; that a solid object cannot
penetrate another solid surface without breaking it, etc. Clearly, many of
these regularities do no longer obtain in present-day physics, but they are
necessary for the human environment to hold together. Some of the pre-
suppositions of these “laws,” such as the distinction between “objects that
we would call entirely different,” are also at the basis of what we have
called the Lifeworld hierarchy, and the definition of the sign function (cf.
Sonesson 1992a, 2000a, 2001a).34

More than Husserl, Gibson attends to the general background of the
world taken for granted. The “terrestrial environment” of all animals
has continued to possess certain simple invariants during the millions
of years of evolutionary history, such as the earth being “below,”
the air “above,” and the “waters under the earth” (Gibson 1966: 8).
The ground is level and rigid, a surface of support, whereas the air is un-
resisting, a space for locomotion, and also a medium for breathing, an
occasional bearer of odors and sounds, and transparent to the visual
shapes of things by day. As a whole, the solid terrestrial environment is
wrinkled, being structured, at different levels, by mounts and hills, trees
and other vegetation, stones and sticks, as well as textured by such things
as crystals and plant cells. The observer himself underlies the con-
sequences of the rigidity of the environment and of his own relationship
to gravity.

The Husserlean description of regularities also fits in with the notion of
abduction, which Peirce puts alongside the more familiar procedures of
deduction and induction, and which reasons from one particular instance
to another, not, however, exclusively on the level of individual facts, for
the facts, Peirce tells us, are mediated by certain “regularities,” principles
that are tentatively set up or taken for granted. Some of “typical ways in
which things tend to behave,” of which most may be of more regional im-
port than those formulated by Gibson, would seem to be at the origin of
“signs,” in the Stoic sense of the term, that is, inferences or implications.
In discussing the Mesopotamian art of divination, Manetti (1993: 6) dis-
tinguishes three kinds of relationships between the protasis (p, that is, the
if-clause) and the apodosis (q, that is, the then-clause): divinatory empiri-
cism, when p and q have occurred together in the past; chains of associa-
tions, when there is a similarity between the signifiers, or a rhetorical fig-
ure linking the signifieds; and coded relationship between a finite number
of identifiable cases.35

The first type is of course closest to purely perceptual reasoning,
and could be formulated in terms of protensions (what can be ex-
pected next) and retentions (what can be taken to have happened
before). It could also be said to depend on an indexical relationship.
That which is described in the protasis-clause may have appeared in
the neighborhood of that which is in the apodosis-clause, in space and/
or in time. All experience taking place in time is of this kind, for instance
our expectancy, when seeing the woodcutter with the axe raised over
his head, that in the following moment, he is going to strike the piece
of wood (contiguity protention), as well as our knowledge that, in
the moment just preceding, he lifted the axe to its present position (con-
tiguity retention). Perhaps the regularity that is taken for granted
here would be an abduction, as Peirce understands the term, if only in a
very trivial sense: it does not take much perspicacity to posit the general
rule which connects the two individual cases. There is certainly a dif-
fERENCE between seeing the woodcutter lift his axe over his head, and wait-
ing for him to split the log, because one event has followed the other in
earlier circumstances, and to predict that a rebellion will take place, be-
cause the liver of a certain animal that has been inspected has a particular
appearance that it also last time a rebellion occurred. Both con-
nections, however, at first may be based on the experience of how
things tend to behave in the Lifeworld. Only at later stages will they be
separated.36

More complex abductions may be necessary, not only in the case of
“coded” relationships, but also those based on similarity, since some
principle for picking out the relevant properties will always be needed.
Still, as long as all this takes place as a matter of course, we are at the
level of inferences (or Stoic signs), not that of real signs.
3.3. *The affordances of a game of chess*

But let us get back to “the things themselves,” and in particular to Husserl’s favorite example: the cube, or the dice — “Würfel” may mean the one or the other. But we will begin with the cube. Like any other object, the cube is necessarily given in perception from a *particular point of view*. Husserl calls what is seen the object (“Gegenstand”), and the aspect through which it is seen is termed ‘*noema.*’ In our normal life in the Life-world, we do not attend to the particular acts and the corresponding aspects through which the object is given. While the particular noema by means of which I presently see the cube only contains three of its sides in different perspectival deformations, I immediately see it as a cube, complete with its six sides, not as some strange object I hypothesize to be a cube. Through an act that Husserl calls *reflection*, the phenomenologist, the psychologist, and the aesthetically-minded contemplator may choose to attend to the acts of consciousness and their corresponding *noemata* instead, thereby transforming them into new objects with their own noemata. In normal consciousness however, the act will only give a particular modification to the perception of the object, a tinge of meaning: some parts of the object appear more specified, others only roughly outlined. What is just sketched out in one noema may be filled in a number of others, and the knowledge that we can always go further in the exploration of the object is part and parcel of our perception of the object, as expressed in the etc. principle. Whereas retentions of already seen sides are the basis for further exploration, protentions may be specified or rejected when the earlier unseen sides come into view (cf. Husserl 1939, 1962a, 1962b).\(^{37}\)

Gurwitsch (1957, 1974), who compared this Husserlean conception to the “spontaneous phenomenologies” of the Gestalt school, has pointed to the “Gestalt-coherence” with which the mutually confirming noemata form the object of perception. Criticizing Husserl because he seems to consider the object itself as a separate instance, an “X” which is the bearer of the noemata, Gurwitsch (1974: 254) tells us that the perceived thing is “*nothing else than the internoematic system itself, i.e., the system of multiple adumbrational presentations and of the properties and qualities exhibited in those presentations.*” Similarly, the predication (“X is red,” and so on) which Husserl conceived to be a “synthesis,” an adjunction of new properties, is really an “analyzis,” an explicitation of what is already contained in the horizons of the perceptual thing.

While phenomenology does not have any historical connection to contemporary psychologies of perception, as it has to Gestalt psychology, Gibson (1971, 1978) tells us, just like Husserl, that the object is directly
seen, complete with its hidden sides, without any inferences being necessary: even the child will see “the invariant cat.” What assures the identity of the object through all the differing views we may take on it, is, according to Gibson, “the formless and timeless invariants,” reminiscent of the “common core” in Gurwitsch’s “noematic matrix,” which defines perceptual coherence. Still closer to the noematic matrix suggested by Gurwitsch is Gibson’s disciple Hagen (1979, 1980), who maintains that the existence of pictorial perspective requires the mind to take account of “the entire family of possible perspective views of an object” (1980: 29), quite apart from the Gibsonian invariants. According to Gurwitsch’s profound analysis of the notion of perceptual noema, each point of view is really “l’apprehension d’un système d’apparences dans la perspective et du point de vue d’un de ses membres” (1957: 152). This means that each noema contains the whole object, but in such a way that some parts will be at the center of attention, given in all their details, while other parts are perceived marginally and vaguely, only in their general outlines. There are references (renvois; Gurwitsch 1957: 191) from each noema to all the others, in which what is here merely sketched in may be fully known. Thus we meet indexicality in another sense, as the continuity of one view to another — and certainly not as a “sign,” though Gurwitsch, like Jakobson, uses the word “renvoi.”

There is a problem with this description of the Lifeworld that should be as critical to Gibson as to Husserl: suppose that what I am looking at is not just a cube but more particularly a dice. Then the argument adduced by Husserl and Gibson continues to be valid: I will see the object as directly to be a dice as a cube. But this information is certainly not there simply to be picked up: Husserl’s (1962b, 1973) “Bantu negro” who is supposed to operate the reduction to the common Lifeworld would be at a loss to see the dice, at least if he is otherwise as naive as Husserl supposes. And yet, to a grown-up member of Western culture, the dice is at least as directly seen as the cube.

While both Gibson and Husserl exclude the cultural layer of interpretation from the Lifeworld, Gibson at least take care to single out what he calls “affordances” as a kind of meaning distinct from referential meaning, and thus from the kind of meaning conveyed by signs. There is no proper definition of the notion of affordance in Gibson’s work, but he gives some suggestive examples: it is 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 that might be said using a phenomenological term, to be “sedimented” onto a object of the Lifeworld: accordingly, an apple, once it is seen to be an apple, is also perceived as something that 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 norma-
tivity. 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 that are yet culturally specific. We just
have to think about the dice. Suppose there is some human culture where
die have not been invented: it might yet seem as if the throwability of the
dice may be perceived directly by those coming from the proper culture.
Similarly, for most people in contemporary Western culture, a computer
keyboard has an immediate property of writability (not necessary less im-
mediately present than the depressibility of the keys).

Of course, the meaning of the dice 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
close. 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 close,
as long as the rules specifying the possible movements of each buttons
were known, just as, in principle, any sound may stand for any meaning
in a language. Anything is 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 close, only a chessman
looking like the king immediately affords the kinds of movement that are
allowed to the king in the game of close.

Deacon (1997: 41, 59) goes even further, 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.” In fact, if we sup-
pose “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. Etiquette rules
and the rules defining games are not “about” anything at all: they impose
restrictions on the behavior allowed. As Deacon (1997: 61) claims about
laughter, it is certainly odd to say that etiquette has a meaning, at least in
the sense of reference. To shake hands (in a given context) means that
you greet somebody; to move a particular chessman means that the queen
takes up a new position causing perhaps a checkmate. As I understand
the term “etiquette rules” (but Deacon gives us no clue) is does not in-
volve something like shaking hands. I would describe this as an interac-
tive gesture carrying a meaning just as any other sign. Etiquette rules,
however, are those that tell us under which circumstances it is appropriate
to shake hands, and when it is not. In this sense, they impose restrictions
on the behavior allowed. Indeed, they determine the cultural affordances
of handshakes.

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 Searle has observed, the rules of chess are not like traffic regu-
lations, applying to movements on a board which were hitherto unregu-
lated: 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 or only regulatory.42 Clearly, it could be argued
that the queen means “able to move in any straight direction as far de-
sired,” 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, as something which may occupy certain positions and not others,
as well as something which has some invariant traits, and others that may
be exchanged freely. The chessman does not carry a meaning differen-
tiated 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 fact.

Saussure’s comparison involves the chessmen and the elements of lan-
guages, 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 realized, could be
comparable in some sense to an utterance, or, more, exactly, the act of
uttering, the enunciation. Indeed, Clark (1996: 40) 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. Con-
sidered as a sign system, chess would therefore possess a very limited
domain of validity, or, in other words, very restricted content resources.
Clark’s (1996: 48–49) 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: 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.

Searle (1995: 43) 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. 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, but they fulfill different functions than the things themselves. They permit us to take a stand on things, so as to chess, 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 that which is outside of the world of chess.

In the Umwelt described by von Uexküll there are things going in, that is, perceptions, and things going out, which are actions. The moves of a chess game are actions motivated by a peculiar meaningful perception of some pieces of wood, ivory, and plastic, and a board. It is the Umwelt of a game of chess.

3.4. Von Uexküll on how it feels to be a tick

It has been suggested (notably by Smith and Varzi 1999) that the Lifeworld, understood as above, is simply the niche, in the sense of (non-Gibsonian) ecology, in which the animal known as the human being stakes out his life (cf. Sonesson 2001a: 99). The niche, then, in this sense, is the environment as defined by and for the specific animal inhabiting it. In Husserlean language, the niche is subjective-relative — relative to the particular species. The precursor of the niche, understood in this way, is the notion of Umwelt introduced by von Uexküll, which is today the defining concept of the specialty known as biosemiotics.43

Uexküll’s notion of meaning centers on the environment, the Umwelt, which is differently defined for each organism (cf. Figure 5). As opposed to an objectively described ambient world, the Umwelt is characterized for a given subject, in terms of the features which it perceives (Merkwelt)
and the features that it impresses on it (Wirkwelt), which together form a functional circle (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 circles 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.

Scholars involved with biosemiotics tend to take this model, immensely enlightening as it is in itself, and simply project onto it the sign conception suggested by Peirce. The first difficulty with this approach of course resides in finding out the real import of the Peircean sign conception. Since this is in itself an infinite task, any scrutiny of the parallel risk getting bogged down very early on. If we confront the sign conception defined here with the world of the tick, however, it will be easy to see that there is no room for it there. Not only is there no distinction between expression and content to the tick; there is no separation of sign and reality. At least in part, this is also an opposition between the Umwelt and the Peircean sign.

Before the invention of biosemiotics, Ernst Cassirer (1942: 29, 1945: 23) 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. But he makes no mention of the fact that, to von Uexküll, the Funktionskreis is a “theory

![The model of the Umwelt according to Jakob von Uexküll](image_url)
of meaning” (Bedeutungslehre). In fact, 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.

Very tentatively, let us suppose that, in the biosemiotic conception, the features of the world observed by the animal correspond to the sign-vehicle or expression (Peirce’s “representamen”); the object or referent would then be that which causes these features to be present to the animal; and the Peircean interpretant or content would in turn correspond to the pieces of behavior that tend to make up the reaction of the animal to the features in question. There is no point getting lost here in Peircean exegesis: if anything, we are faced with a “formal sign,” as conceived in the Fonseca tradition. As we are using the terms, we would have some kind of mediation (Cassirer’s Vermittlung), but not a sign. However, there are, as I will explain in the following, two differences between what is happening in the Funktionskreis and what we have here defined as a sign.

As Ziemke and Sharkey (2001: 709) point out, it is hard to find the object of the sign, in the ordinary sense of its referent in the “outside world.” What is for us, as observers, three cues to the presence of a mammal, the smell of butyric acid, the feel of 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 behavior. In fact, Ziemke and Sharkey go on to quote an early text by von Uexküll, in which he says that “in the nervous system the stimulus itself does not really appear but its place is taken by an entirely different process” (my italics). Uexküll calls this a “sign,” but it should be clear that is does not in any way fulfill the requirements of the semiotic function. Indeed, expression and content are not differentiated, already because they do not appear to the same consciousness. 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.

What is lacking is real Thirdness: the reaction to the primary reaction, that is, the reaction that does not respond to a simple fact (Firstness), but to something that is already a reaction, and thus a relation (Secondness). Without having to enter into the earlier discussion of differentiation, we see that, even from a strictly Peircean point of view, there is no Thirdness for the tick: it does not respond to any relationship, since it is not aware
even in the most liberal sense of the term) of any second term (the mammal) to which the first term (the butyric acid) stands in a relation.

In fact, things are even more complicated. 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, Deacon’s (1997: 63), idiosyncratic reading of Peirce, according to which only signs such as those found in human language (his “symbols”) give rise to chains of interpretants seem to have some justification — in reality, if not in Peircean theory (cf. Sonesson 2003a). This is true, however, only if one does not separate indexicality and indexical signs, or iconicity and iconic signs.

3.5. From Umwelt to Lebenswelt by means of the thematic field

As I have often pointed out, to account for the distinction between the “immediate object” and the “dynamical object,” we need the concept of ground. The butyric acid, the hairiness, and the warmth form the immediate objects of the tick, the mammal as such is the dynamical object. The difference, however, is that there is no way that the tick, unlike human beings, may learn more about the “dynamical object” than that which is given in the immediate one. Meaning here appears as a kind of “filter”: it lets through certain aspects of the “real world” that, in is entirety, is unknowable, though less so for human beings than for ticks. The Kantian inspiration of von Uexküll is of course unmistakable. Indeed, the filter model can best be expressed in terms of another Kantian philosopher, Karl Bühler, who talked about the principles of “abstractive relevance” and “apperceptive supplementation,” where the first accounts for the neglect of such physical properties which are not endowed with meaning, while the second explains the projection of properties not physically present in perception to the meaningful experience. In fact, Bühler tried to explain such linguistic phenomena as Saussure and Hjelmslev described
in terms of “form” as opposed to “substance”: that certain properties of
the physical sound may vary a lot without the units of meaning (the pho-
neme, the word, etc.) being changed; and that other properties that are
not physically present may yet be perceived, because they are expected in
the context. It can now be seen that Bühler’s principles of abstractive rele-
vance and apperceptive supplementation go much farther than the sign
(Figure 3). They have been found in the studies of the systems of cooking
and clothing realized by Lévi-Strauss, Barthes, and others (as demon-
strated by Sonesson 1989).

The same general idea is found in the work of the cognitive psycholo-
gist Fredrick Bartlett (1932: 32, 44), who introduced the concept of
scheme to account for our “effort after meaning.” Bartlett used the notion
of scheme in his studies of memory, in order to explain the successive
modifications that a story stemming from an alien culture was subjected
to, as the experimental subjects were asked to recount it from increasing
temporal distances; but also in order to explain how one and the same
drawing was transformed in later reproductions from memory, in differ-
ent ways according as it had been labelled the first time as a pair of
glasses or as a dumbbell. The scheme is to Bartlett “the setting which
makes perceiving possible,” and, more precisely, it is “an active organi-
zation of past reactions, or of past experiences, which must always be sup-
posed to be operating in any well-adapted organism’s response,” with the
result that responses do not occur in isolation, but “as a unitary mass”
(1932: 201). The last definition (in spite of introducing a socio-historical
dimension) is reminiscent of Uexküll’s notion of Umwelt.

This notion of schemes was used before Bartlett by Janet and Halb-
wachs, and it has been taken up later by Piaget, as well as by the phenomenologist Alfred Schütz. It has of course also become a fundamental con-
cept in cognitive psychology, linguistics, and artificial intelligence, but
perhaps sometimes with a lower intentional depth. Elsewhere, I have
summarized the results of these studies in the following way (Sonesson
1988): a scheme is an overarching structure endowed with meaning, which,
with the aid of a relation of order, in the form of syntagms and/or para-
digms, joins together a set of in other respects independent units of mean-
ing. Among its further properties, two, in particular, are to be noted
here: a) schemes contain principles of relevance which extricate from
each ineffable object such features as are of importance relative to a
particular point of view (this is Piaget’s assimilation, and the principle of
abstractive relevancy, according to Bühler 1934); b) schemes also supply
properties missing from the ineffable objects, or modify the objects so as
to adapt them to the expectancies embodied in the schemes (this is an-
other aspect of Piaget’s notion of assimilation, and what Bühler terms
annerptive supplementation; also, it is involved in what Halbwachs and Bartlett call reconstruction).\(^{46}\)

Returning to modern day biosemiotics, it can be easily shown that what these authors are involved with has nothing to do with meaning as sign function, but very much concerns meaning as relevance, organization, configuration and/or filtering. In their early joint paper, Emmeche and Hoffmeyer (1991: 4), point out, in criticizing the concept of information in information theory, that they are interested in “a difference that makes a difference to somebody.” They go on to say that living beings “respond to selected differences in their surroundings” (their italics in both cases). The formulation clearly invokes relevance, and even some kind of filtering device. Later on in the paper, however, when the Peircean sign concept is introduced, the DNA-sequence of the gene is said to be the representamen, the protein its object, and the interpretant the cellular-biochemical network. It is difficult to detect any sign function here, in the sense in which we have defined it. According to our authors, the contribution of Peircean semiotics is to show us that “the field of genetic structures, or a single gene, cannot be seen in isolation from the larger system interpreted” (1991: 34). This certainly suggests meaning as a whole or a configuration. In a later paper, 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. But even in this article, there are traces of the filtering concept of meaning: we learn that “the whole operates as a constraint.” Indeed,

Saying that cytochrome c means something to the cell is the same as saying that it has a function. It is not just any molecule. We could well synthesise small proteins and artificially introduce them into the cell. They would be without importance or they would be dysfunctional or, with certain fortuitous strokes of luck, they would actually fulfill some function in the cell. (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). This is of course true to the extent that there are relevancies in cells, in particular if these relevancies result from a system of oppositions, like those of Saussurean language. From this point of view, everything that is in the cells is also in language. But the opposite cannot be true. There is, of course, no semiotic function as we have defined it.

It may be useful to distinguish two elements which always go together, both in Uexküll’s notion of Umwelt and in the concept of scheme (as dis-
cussed in Sonesson 1988; 2003a): organization, which may derive from structure or configuration, and relevance, which may or may not be a result of organization. It is clear that in language, as Saussure understands it, relevance is a result of organization, and more exactly of structure. In Uexküll’s notion of Umwelt, it rather seems to be a product of the configuration.47 Lacking the competence, I prefer not to pronounce myself on the case of genes.

It is useful also to distinguish relevance from filtering, although they have something in common: the picking up a limited set of features from the totality of the environment. However, relevance, strictly speaking, 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 (Hjelmslev’s “connotational language”; cf. Sonesson 1989). Indeed, relevance lets the difference between “immediate object” and “dynamical object” subsist, in the vague sense which they retain in the “scholastic” interpretation of Peirce (see above): that which is directly given, in contrast with that which is potentially given for further exploration. Thus, the principles of “abstractive relevance” and “apperceptive supplementation” still apply. In contrast, filtering simply crosses out that which is not let through the filtering device.

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 some kind of “metacognition,” or, as cognitive scientists are want to say, “a theory of mind.” To the tick, to paraphrase Wittgenstein, the limits of its language are the limits of its world, but not so (in spite of Wittgenstein) to human beings. Or rather, the limits of our Umwelt are not the limits of your Lebenswelt.

According to the phenomenologist Aron Gurwitsch (1974a), we may talk about different sociocultural lifeworlds, apart from the common structures of the Lifeworld, which we all share as human beings. Such a socio-cultural Lifeworld would then correspond to a culture, in the sense of cultural semiotics. However, the phenomenologist Alfred Schütz (1967) suggested there are really “multiple provinces of meaning,” such as dreaming, religious experience, the art world, the play world of the child, and that esoteric practise we know as science. The peculiarity of the Lifeworld, in this context, is that it offers access to the other worlds, and is accessible to all of them. In this sense, the human Lebenswelt is different from the Umwelt of other animals. Or at least is has the capacity for being different.
In Peircean terms, human beings may reach for the dynamical objects beyond the immediate ones. They may try to transform Nature into Culture. However, as Wittgenstein observed, even if we had a common language game, we would perhaps not have so much to talk about with a lion. The lion, presumably, does not try to go beyond his own Umwelt to grasp the properties of the objects that lie behind it. There is, so to speak, no “dynamical object” beyond the immediate one to the lion. And this is why there may not be much hope for us ever being able to discuss semiotics with a chimpanzee.

If the Umwelt is a organized network of filters and/or relevancies, as I suggested in the last section, it seems that maturing in the child consists in breaking out of one Umwelt and going on to another, broader one, until reaching the human Lifeworld. Between each Umwelt and the next, which encompasses it, there is always a “zone of proximal development.” In this sense, ontogenesis itself forces us to go through a series of “finite provinces of meaning,” in the sense of Schütz. A temporal dimension is thus added.

It might therefore be said that what most perspicuously differentiates the tick from the human being (without prejudging for the moment on the question where the exact border is to be placed) is the structure of the field of consciousness: in Gurwitsch’s (1957, 1964, 1985) terms, human consciousness is made up of a theme that is the center of attention, a thematic field around it consisting of items that are connected to the present theme by means of intrinsic links permitting it to be transformed into a theme in its own right, as well as other items present “at the margin” at the same time, without having any other than temporal relations to the theme and its field. The tick of course has access neither to the thematic field nor to the margin. In a way, this is simply another way of saying that the tick cannot reach beyond the immediate object. But Gurwitsch’s analysis breaks up that of Peirce: it implies that, not only is there no way for the tick to “go on from here” (the Husserlean etcetera principle), its experience of the here and now is also very limited. In other words, there is no real “immediate object” to the tick, not only because it is not opposed to a future more extensive dynamical object, but also because even in the here and know, what is immediately experienced does not appear as a thematic structuring, or perspective, on such a dynamical object.

I have suggested, then, that an important difference between human beings and (some) other animals consists in the thematic structure of consciousness, or, in other words, the function of attention. As noted above, there really are two differences between the way in which ticks and other lower animals have access to meaning and the human way.
The first of these is the thematic structure: there is no immediate object, because there is no dynamical object in relation to which it may be seen as an adumbration. But there is more to it: there is no representamen, either, if we identify this term with expression, because no distinction can be made between such a representamen and the object, either immediate or dynamic.

3.6. *Common sense psychology and intentionality*

Taking into account the Fonseca tradition, we earlier noted that one kind of mediation (for which I prefer to reserve the term “sign”) consists of a signifier (expression) which has to be perceived as such in order to usher into the perception of the corresponding signified (content); and another one (which following the Brentano-Husserl tradition, I prefer to call intentionality) which may consist in a “signifier” which is not ordinarily perceived as such but still somehow serves to mediate the perception of a “signified” (where it may be better to avoid terms as these, ordinarily associated with the sign function, and simply talk about an item ushering into another item). It will be remembered that, according to von Uexküll, “in the nervous system the stimulus itself does not really appear but its place is taken by an entirely different process” (my italics). As human beings, as Husserl and Gibson have insisted, we are alternatively confronted with the cat-from-one-side, the-cat-from-above, the-cat-from-the-front, etc., but what we really see is all the time the same invariant cat. The tick smells the same invariant butyric acid, period. In the world of the tick, there are no signs, as distinct from the world itself. Differentiation has not even started. But there is no noematic matrix either, properly speaking. The noematic matrix involves seeing the whole of the thing, but from a particular point of view. To the tick, the thing and the point of view cannot be separated. In this respect, even intentionality is beyond the ability of the tick.

Intentionality as it is understood in the Brentano-Husserl tradition simply involves the directedness of consciousness. Every act of consciousness is about something “in the world,” in a more immediate sense than which this is true about signs. The relation between consciousness and the thing that is the object of consciousness may be called an *intention*. An intention in this sense is not a purpose, although a purpose is a kind of (very complex) intention. Nor should an intention, in this particular sense, be confused with an *intension*, in the sense in which this term is opposed to extension. And yet, as a linguistic phenomenon, intensional contexts,
also known as propositional attitudes, seem to have something to do with intentions.

In Anglo-Saxon philosophy and contemporary cognitive science, the notion of common sense psychology, together with naive physics, correspond to the Lifeworld, or the *commens*, which we have presented in this section. However, it figures there mainly as a problem, concerning how (if at all) it might be mapped onto scientific psychology. For this purpose, common sense psychology is often formulated in terms of propositional attitudes. In linguistic terms, propositional attitudes are expressions beginning with “I think, believe, imagine, etc. that p.” More generally, if someone is said to have a belief that p, then he may be said to have a propositional attitude with reference to the content p (cf. Bermúdez 2005: 244). Since the verbs used in the formulation of propositional attitudes are by definition mental descriptions, it would seem that they should correspond to intentions. However, if an intention is the fact of consciousness being directed to something in the world, it seems that the object of an intention is a thing (a “substance” or something comparable to a substance such as a nominalized property), but the object of a propositional attitude is a state of affairs (corresponding to a clause).

It might be argued, however, that although that which is the object of the intention is a thing, that by means of which it is intended, the noema, is a state of affairs. Thus, to intend the dice, one has to entertain the proposition that there is a dice seen from above right, the central face of which shows four eyes, against the background of the tabletop, etc. Yet one must not forget that, while this may well be the thematic noema within the complete noematic matrix, in comparison to states of affairs such as the dice seen from below left, the central face of which shows three eyes, against the background of the floor, and so on, it is only relatively thematic, when compared with the entire noematic matrix which is identical to the dice itself, according to the phenomenology favored by Gibson and Husserl alike. Indeed, in the intentional relationship, the dice is that which is thematic and directly given, the intention going right through the noema.

We are here at such a subtle level of phenomenology that it is all too easy to go wrong. If the sign consists of two objects, the expression and the content, then it seems that the intentionality of the sign will be directed most immediately to the expression, not as a noema, but as the X that is at the center of the noematic matrix. But the intention does not come to a close there. It goes on to the indirectly given object, which is the theme of the sign, the content. Within the content, however, it may stop at the noema of content (also known as the intension), or go on to the center of the noematic matrix (the extension).
There is something curious, however, in identifying common sense psychology, if it comes in the guise of a set of propositional attitudes, with what, following Husserl, Gibson, Peirce, and others, I have characterized as the Lifeworld, the world taken for granted. If anything, the Lifeworld is implicit, sedimented knowledge. In Husserlean terms, a propositional attitude is a “judgment,” which stands in direct opposition to the so-called ante-predicative experience, which is at the origin of the structures of the Lifeworld (cf. Husserl 1939). In contemporary cognitive science, it has been argued that the domain claimed by common sense psychology is really made up of such things as frames and routines (cf. Bermúdez 2005: 172). This does not seem to be very different from my old argument against Searle (Sonesson 1978): you do not see the marks on the desert sand as writing because you think someone has had the purpose for you to see it as writing, but, on the contrary, because you see it as being a typical instance of writing, you take for granted that there must be somebody (if it can only by God, a ghost, and some other spirit, so be it) that has had the purpose for you to see it as writing (or more, simply, who has brought about that these marks have the semblance of writing, an act which is normally made on purpose).\footnote{This is a scheme of interpretation, sedimented from earlier instances of experience. In this sense, it goes back to earlier judgmental acts, but it normally operates as a matter of course.}

In his more recent work, Searle (1995: 24) similarly rejects the idea of mutual knowledge (of the type “I believe that you believe that I believe . . .”), instead arguing for what he calls “we intentionality” or “collective intentionality” being a biological primitive, not reducible to a combination of individual intentions.\footnote{This is an excellent point, but Searle only applies his insight to what he calls “institutional facts,” identified with social reality. Clearly, the Lifeworld in its entirely reposes on collective intentionality in this sense. Yet, this is apparently not what Searle wanted us to understand: according to his idea of “our contemporary world view,” the physical world is not to be understood in terms of “naïve” or “ecological physics,” but as “natural concepts” which are “language-independent” and even “mind-independent” (Searle 1995: 33, 61). This is certainly very different from both Husserl and Gibson, both of whom tend to reduce the Lifeworld to that of everyday physics, although none of them would probably describe the latter as independent of mind.\footnote{There is however something different in Searle’s new conception, which in some ways is more similar to the Lifeworld, that is, the “background,” defined as “the set of nonintentional or preintentional capacities that enable intentional states of function” (Searle 1995: 129). It is important to note that, in this definition, Searle takes “enable” to describe a causal, not a logical relationship, as would be the case in propositional attitudes,}
which Searle seems to identify with intentions. Searle also claims that intentional states are at least potentially conscious, which is not true of the background. The “functions” of the background, however, are reminiscent of those of the Lifeworld: the background enables linguistic and perceptual interpretation, such as adapting a word with a single meaning to different circumstances, or finding the duck or the rabbit in the Wittgensteinian figure; it structures consciousness, so that even in the Mexican jungle, we can find the sky and the earth; it organizes sequences of experience into dramatic categories; it structures our preparedness in relation to the activity to which we devote ourselves, as for instance the readiness for other skiers becoming potential dangers when we are skiing; etc. These are obviously things taken for granted, which we have met before, in the form of the typifications of the Lifeworld, its temporal horizons, the laws of ecological physics, the affordances, the structure of the field of consciousness, and so on. It is not clear, however, why these phenomena are said not to be intentional. Clearly, in the sense in which intentionality means directedness to an object of the world, they remain intentional, whether we are actively entertaining them or not. This is why Husserl would count them as instances of passive intentionality. As all sedimented acts, they must be capable of attaining consciousness, at least in a phenomenological analysis. And while they may be, in some sense, causal (which to Searle means “neurophysiological”), it is not at that level that they form the background of consciousness, that it to say, the Lifeworld.

3.7. Summary

In this section, I have taken pains to distinguish two kinds of mediation, one, for which I prefer to reserve the term “sign” consisting of a mediator (signifier/expression) that has to be perceived as such in order to usher into the perception of the corresponding mediated item (signified/content); and another one (which following the Brentano-Husserl tradition, I prefer to call intentionality) that consists of a mediator that is not ordinarly perceived as such but still somehow serves to bring along the perception of some kind of mediated item. Meaning is much broader than sign: it is given already in perception, notably in the form of indexicals or neighborhood relations, or in the form of iconic grounds, or identity relations. In this general sense, meaning may be understood as a way of picking up selected information from the real world, either by means of filtering out everything else, or by organising the environment into a thematic hierarchy. The first case is well known from the work of
Uexküll and his followers in biosemiotics. The second case is more typical of the human Lifeworld. The sign, however, is a peculiar creature of the Lifeworld: it supposes the concomitant awareness of at least two items, which are subjectively differentiated from each other, while one of them is directly given but not thematic and the other indirectly given and thematic. It typically also supposes an (potential) awareness of the difference between the sign and the world, between (to partially paraphrase Peirce) the immediate and the distal content. Among meanings other than signs, we may distinguish those that are, in a manner of speaking, horizontal to the Lifeworld, such as inferences or abductions, and those which are vertical to this same world, that is, the intentional relationships connecting subject to their experiences. Intentionality is much like propositional attitudes, but while the former description the direction of a consciousness to an object, the latter is a description of the state of affairs arising from this connection. Signs are, from this point of view, double intentional relationships. While the noema in which an object is given is thematic in relation to other noemata, it is non-thematic when compared with the noematic center; moreover, in a sign, the noematic center of the expression is non-thematic in relation to the content. However, propositional attitudes or collective intentionality do not seem to be able to account for the passive nature of Lifeworld meaning. Nor can this meaning, as meaning, be properly explained in terms of neurophysiological causality.

4. The life of signs in society — and in the system

There are many excellent reasons for taking exception to the program for "semiology" proposed by Saussure (cf. Deely 2001: 669), but the work of Saussure also contains at least two genuine insights (apart from the notion of pertinence mentioned above), although presented in ways that unnecessarily make them appear contradictory to each other. The first insight involves the basic importance of society (in one or other sense) to the existence of signs (and even some other meanings, such as the affordances of chess). This insight is however merely proclaimed, but hardly elaborated, by Saussure. The second insight consists in the system character of (some) signs, most notably linguistic signs. Although system character can hardly be understood otherwise than as a social fact, it has been used, not without some foundations in Saussure's work (at least as posthumously presented by his students), to claim that language (and thus presumably other signs) can be analyzed as purely formal items,
without any recourse to social context. This is the basis of linguistic structuralism, continued, in some respects, but essentially distorted, by the variegated versions of Chomskyan grammar.

From the point of view of phylogeny and ontogeny, I believe, there are in fact two further “ages of understanding” going beyond the sign function. Both have society, in the general sense of the coming together of several individuals, as a precondition. In one case, this gives rise to the system, in which signs define each other mutually, and which is shared by many individuals. In the other case, organism-independent representations are what come into being. Society here may seem less necessary, but it is still required for relaying the interpretative procedures that give access to the artifacts. In a very general sense, the artifact is to the individual what the other individual is in the first case. Specifically, however, the cases are very different.

Signs are often thought of as being objects the business of which it is to circulate through the world from a sender to a receiver, but it is important to realize that signs also have the function to conserve meaning, in time as well as in space. In this sense, signs are memory devices. It even seems that those who talked about signs during the early “Modern Age” (contemporary with Deely’s late “Latin Age”), such as Hobbes and Leibniz, conceived of signs mainly as markers (notae) for permitting us to remember earlier thoughts, that is, mainly as messages to ourselves (cf. Dascal 1978, 1983, 1998). But 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 these sense of Halbwachs and Bartlett). Signs as material bodies serving to remind and to classify are central to the thinking of Enlightenment philosophers and their followers in the ideological school; they reappear much later, in Husserlean phenomenology, as well as in the sociology and psychology of Husserl’s near contemporaries, such as Janet, Halbwachs, and Bartlett.

The term “markers” primarily suggests some kind of organism-independent artifacts serving as signs, but socially shared inner representations may no doubt also be involved. 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: 33). Since then, books and other embodied artifacts have (what Plato prematurely feared) come to occupy much of the place earlier ruled by individual memory.
If indeed mental images and (personal) memories are signs, as Piaget suggests, then they are certainly less useful for both the purpose of circulation and accumulation than language, pictures, and even gesture. Indeed, it may seem that it is because meaning may be conserved, in space and in time, that human culture, with all its variety of socio-cultural lifeworlds, becomes possible. In some ways, signs may be persistent enough once they are known by more than one individual, and may be accessed both by the one creating them and one other person, as happens with gesture and spoken language. But the sign character, in the sense of the capacity for circulation and accumulation, becomes even more pronounced, once the sign has acquired a more enduring material embodiment, as is the case with drawing and written language. It has been suggested by Merlin Donald (1991, 2001) that there are several phylogenetical discontinuities (which can be extended ontogenetically, as suggested by Zlatev 2002, 2003, in press a, in press b; Zlatev, Persson, and Gärdenfors 2005) in the development that leads from non-human animals to human beings, all involving the acquirement of a distinct kind of memory, considered as a strategy for representing facts. In this story, the picture represents a decisive, final step.

4.1. Wine, women, and words. Also about mind-(in)dependent being

In the beginning of this essay, I hinted at a structuralist argument, according to which the reduction of all meaning to signs (as in Poinso, Peirce, Deely, and in Locke’s final chapter) or to ideas (as in all but the first chapter of Locke and in most of the ideologues’ writings) in the end reduce to one and the same, since no distinction can be made. It is significant that the notion of “representation,” so central to “classical” cognitive science, could just as well be interpreted, observing the way it is used, along the lines of ideas as on those of signs. But structuralism is not enough: in my critique of the critique of iconicity (Sonesson 1989), I relied heavily on the fact that, as it is experienced, similarity is not a symmetric relation, but depends on something being compared to a standard. Therefore, it is not the same to use the sign as a model for everything else, as to use the idea as an all-inclusive model. The model, or the standard, is projected into that which is compared to it. However, as long as these notions are not defined, but we rely on their unexplicated understanding within ordinary language, it is not easy to determine what the difference is.

Whatever else the sign is, nevertheless, it is clear that, to Poinso, Peirce, and Deely, it is some kind of relation. To call something an idea,
or perhaps a bundle of sense data, or the contents of consciousness, on
the other hand, does not directly suggest any kind of relationship. Strictly
speaking, of course, you cannot entertain an idea without the idea being
about something (that is, it is an intentional term), and the sense data or
contents of consciousness are effects produced within an organism as a re-
sponse to something “out there.” Both the phenomenological notion of
intentionality and the *Umwelt* of von Uexküll are meant to overcome the
limitations of this view. There is not something “inside” which is gratuit-
ously coupled with something “outside” by means of a reference. That
which is “inside” is already a reaching out to the “outside” (it is “trans-
scendent,” in Husserl’s terms). What is “inside” is a relation pointing
“outside.” If this is what Deely means in opposing “ideas” and “signs,”
I can certainly agree with him, even if, in order to make distinctions
within the kinds of relations experienced by the mind, I would like to use
the terms meaning or semiosis for this general notion and reserve the term
sign for a more specific type of relation.

Over and above being relations, signs, or as I would prefer to say,
meanings, are also indifferent to the difference between mind-dependent
and mind-independent being (Deely 2001: 226, 371, 409). The scholastic
sense of this distinction, which Deely (2001: 350) painstakingly endeavors
to explain, is no doubt much more complex than the one suggested in
identical terms by Searle. The result of Deely’s praiseworthy attempt to
explain the scholastic terms is to show that they are just as cumbersome,
but certainly not as meaningless, as they are rumoured to be. The primary
distinction actually concerns *ens rationis* (or *non ens*, both of which Deely
translates as “mind-dependant being” and sometimes as “nonbeing”) and
*ens reale* (“mind-independent being”).57 The latter kind of being is also
glossed as “physical,” but, unlike Searle’s mind-independent being, it
could hardly correspond to the notions of modern time physics: rather,
the “categories” (in an Aristotelian sense) would seem to match the Life-
world or the world of ecological physics, made up of individual objects
(“substances”) with their properties (“accidents”). As we shall see in a
moment, there are other ways in which “mind-independent” being goes
beyond physics, to include also “cultural meanings” such as those left
out of the picture by Husserl and Gibson. In any case, it seems clear that
the indifference of meaning to mind-dependant and mind-independent
being consists in both of them being only accessible through mind-
dependant being. That is, in our terms, both of them emerge through
intentionality.

The further properties which these things acquire “as they come to
exist within the mind” (Deely 2001: 351) are “second intentions,” which
appears to make up the essential part (at least to the scholastics) of mind-
dependent being. Nevertheless, according to Deely, “second intentions” can become part of “actual existence,” that is, of mind-independent being. For someone to be a judge, a priest, or a teacher, he must first be someone who exists. Hence the quality of being a judge, a priest, etc., is a second intention, and thus, part of mind-dependant being. But, apart from these properties belonging to the man as part of his individual being, they are “exercised not only subjectively but also in the objective order”:

According to their being in terms of the ens reale/ens rationis distinction, they are cognition-dependant characteristics; yet the belong to the judge in his actual objective existence as a functioning member of society. (Deely 2001: 353)

And so does the belonging of somebody to specific cultural groups such as Christians, Muslim, New Age, etc., Deely goes on to say. Within ens reale, we thus seem to have recuperated not only the general structures of the Lifeworld, but also the different soci-cultural lifeworlds (or Umweltten, as Deely says). In the classification on the next page, Deely (2001: 354) also lists as ens rationis able to transfer to the domain of ens reale such “cultural identities” as “writing material, book, statue,” as well as “estate, guildhall, commons, prison, inn, etc.” This seems to bring us back to what I earlier, in an extension of Gibson, called the “cultural affordances” found for instance in the game of chess. But there is an ambiguity here: “writing material,” if it implies such things as “pen” and “paper” is comparable to “inn,” in the sense that certain “physical” configurations identify something as being a pen or not a pen, a paper or not a paper, an inn or not an inn, etc. But “writing” is something else: it is a realisation of a system of signs. To identify something as a “book” certainly meant very different things in Antiquity, in Ancient China or Mexico, and at present. But most books also contain (at least some specimens of) signs known a writing. As for a statue, to identify is as such may only mean to see, as some people have claimed about the Berekhat Ram figure, that it is a piece of stone modified by purposeful actions executed by human beings; but to the extent that it also means identifying the Berekhat Ram figure as the semblance of a woman, the identification of the piece of stone as a sign is implied.

However subtle the scholastic scheme of interpretation, it seems to me that other distinctions have to be made. About the inn and the pen, we may say what Searle (1999: 154) observes (in passing, unfortunately) about the chair and the knife, that their capacity to perform the particular function is “built into their physics.” Searle opposes this condition not only to language, but also to money and (in other passages) to chess.
have already argued above, against Searle as well as Saussure and Deacon, that chessmen are more similar to the chair in this respect, and so is money, as well shall see shortly. Indeed, something is a chair to the extent that it possesses properties that are capable of going through the “filter” which is the concept “chair.” The only real difference between chairs and knives, on the one hand, and chessmen and money, on the other hand, is that the latter only serve their function in very limited domains of the Lifeworld, chess and the exchange of goods, respectively. Unlike signs, chairs and chessmen are not given a materiality just to carry a message. Chessmen are instruments, which serve a purpose, though only on the chessboard.

To illustrate this, I will turn to some more recent confusions of different kinds of meaning, due to Lévi-Strauss and Jakobson. According to Lévi-Strauss (1958: 329), there are three vast circulations going on in the world: the circulation of words, of merchandises, and of women. They are studied, in turn, by linguistics, economy, and social anthropology. Jakobson (1990: 19–20, 460–461) took this idea up and extended it: the three circulations concern messages (not only verbal signs), commodities (which comprise goods and services), and mates (men or woman as the case may be). The sciences that study these phenomena are semiotics, economy, and social anthropology in conjunction with sociology. The latter addition is perhaps not circumstantial: Lévi-Strauss is thinking about the kind of societies studied by anthropology, in which friendly relations are established between tribes by one tribe giving wives to another, which then may give wives to a third one, until, in the end, the first tribe receives wives back from one or other tribe in the chain of exchange. In the societies studied by sociology, on the other hand, the circulation would rather consist in one man and one woman given themselves up to each other (or so the rhetoric goes). Jakobson and Lévi-Strauss agree that these sciences studying circulations are all part of some more general science which they call the study of communication, but Jakobson also emphasise that they all imply the presence of language or other signs, so that, in the end, in may seem that this more general science is semiotics itself.59

In an early work, Dan Sperber (1982) has taken exception to these parallels, arguing that, while circulation is a constitutive factor of the kinship system, it is only an accidental property of language, which is essentially a repertory of messages; and when information has circulated for a sufficient time, we will all be in possession of it, but a woman or a horse which is exchanged is lost for the donor; and while language signifies by means of a code, women only acquire meaning by means of the attention being directed to them.60 It is easy to agree with the general drift of
Sperber’s argument, but sometimes he is widely off the mark. To begin with, a language that does not circulate (i.e., is not used in any acts of communication) is not much of a language; in fact, it is what we call a **dead** language (like Latin, or Hebrew until it was reborn). On the other hand, the circulation of women is certainly not constitutive of **women**. In fact, I think that, in the kinship system, women do not signify at all; it is the **act of exchanging** them that carries meaning. And this is certainly a difference to the exchange of signs, in which the latter carry at least the primary sense, which the exchange serves to convey. In fact, it is easy to imagine a way in which a woman, arriving from one tribe to another, does carry meaning in herself: speaking another language, having different customs, etc., she may appear as a “non-text” (that is, as *Alius*, stranger), to the members of the receiving culture. Indeed, she may even carry meaning as the individual person she is: even after reducing the message to make translation possible, as Lotman (1979: 91) so nicely puts it, the message may still contain indications for reconstructing the personality of the other (cf. Sonesson 1987, 1992a: 91). All these terms of course refer to “second intentions,” because they ascribe properties to the woman (or “predicate” them of her).

Suppose, however, that it is really the woman (or, more generally, the mate) as such which is the message. This would presumably make her into a kind of “natural meaning,” in Grice’s sense, similarly to the way in which red spots mean measles, or clouds mean rain, as opposed to the “non-natural meaning,” epitomized by language (and, I suppose, money). In this view, there is an identity between cause and expression, on the one hand, and effect and content, on the other hand, the cloud being both the cause and the expression of the rain; or between cause and content, on the one hand, and effect and expression, on the other hand, the read spot being both the expression and the effect of measles. Non-natural meaning, as in language, on the other hand, relies, in the conception of the Greeks, on the recognition of someone having the purpose to communicate something, on this purpose being recognize, and so on. But what would the woman mean in this case? I suppose something like “effect of an exchange having taken place.” This would then seem to be an instance of those strange *ens rationes* that end up being also *ens reale*. One may still doubt that it is a sign.

Interestingly, however, in his later manifestation as a Gricean, Sperber, writing together with Deirdre Wilson (Sperber and Wilson 1995 [1986]: 53–54), denies the existence of two kinds of meaning: there is a continuum between that which Grice calls natural and non-natural meaning. In doing so, however, Sperber & Wilson seems to reduce all meaning to “relevance,” without there being any principle to the relevance, which
amounts to some kind of “natural meaning” which includes the manifest-
ation of purpose. On the contrary, I think there must be a principle de-
termining what is relevant also in what Grice (1989) would call natural
meaning: the cloud only means rain to those who know about the rela-
tionship between clouds and rain, and who for reason of the Lifeworld
choose to ignore other causes. Red spots of a certain type only mean mea-
sles to those who know about the symptoms of measles, and who do not
care to take other causes or effects into account. The woman means “ef-
fect of an exchange with another tribe” only to those who are familiar
with this kind of exchange pattern, and who think this is the only (or
most) relevant aspect of the woman in question.

If the woman of the mate exchange is really a message, then her circu-
lation as a message in dependant on her circulation as a material object.
But signs do not have to circulate, in this material sense at least, in order
to be signs. They certainly have to cover the space between the addresser
and the addressee, but this does not have to be a space in the real world,
however small. And signs may travel from very far (and many signs have
undoubtedly done so in time as well as space) without being able to func-
tion as signs, if there is no common system of interpretation.

Communication in the material sense (in the sense of the current spatial
metaphor) really implies that something which leaves one place is not
there any more when it arrives at a second place: this is true of the train,
as well of the letter which it may transport, and even of content of the lat-
ter, but not of course of the units of which the message is made up. The
circulation of women (and of mates generally) as well as of commodities
suppose a double movement from one place to another: one tribe gives
women to another tribe and receives women back (or a man and a
woman “give themselves up” to each other); and when receiving a horse,
I give money or perhaps a donkey back. But the exchange of signs is not
necessarily double; it does not even necessarily imply any spatial move-
ment in the Lifeworld. A television picture or a web page is transferred
from afar but they are not perceived to move in space. It seems rather
absurd to speak of the meaning of a fresco painting being transferred by
circulation — though there is of course a movement of the photons from
the rocky surface to the eyes of the observer. A fresco painting is an ex-
ample of a sign that would certainly not remain at its place of origin if it
were transferred to a museum. Indeed, it is an instance of a sign system
where it is the addressee that has to seek out the message, rather then
the opposite. However, there is a sense in which a picture postcard or a
reproduction of Mona Lisa will remain at the point of origin while being
sent of to some distant place: as a type, if not as a token (cf. Sonesson
1992a: 91). Thus, circulation, like accumulation, has more to do with the
kind of temporal and spatial artifact in which the sign is embodied then
with the sign function as such.

Apart from Lévi-Strauss, the author most responsible for the identification
of “two basic modes of human behavior . . . the production and cir-
culation of goods (in the form of commodities) and the production and
circulation of sentences (in the form of messages)” is no doubt Rossi-
Landi (1983: 65), who calls these two modes “non-verbal” and “verbal
communication,” respectively. It is interesting that, in addition to circula-
tion, Rossi-Landi attends to parallels between production, not accumula-
tion, as Lotman suggested. However, on both counts, the comparison
seems flawed from the beginning: the term “non-verbal communication,”
which is a misnomer already in its common usage to refer to gesture, fa-
cial displays, paralanguage, and the like, is here extended so as to include
practically everything in the world which is not verbal communication,
such as politics, economics, law, fashion, cuisine, etc. Curiously, Rossi-
Landi still opposes these “verbal and non-verbal signs” to “non-signs.”
However, the only basis of the comparison seems to be the fact of ex-
change (which, as we have seen, is not necessarily a fact as far as real
signs are concerned). It might indeed be profitable, as Rossi-Landi claims,
to analyze commodities in the terminology of signs, and vice-versa, but
such a comparison would have to attend also to their difference. It is, in
fact, easy to agree with Rossi-Landi (1983: 68) that “a commodity is a
commodity, rather than a mere product, because it is a message” (his
italics) — but this is so, exactly because something has to be added to
the production of a good, in order to make it into a commodity. In the
end, Rossi-Landi (1983: 71) actually knows this, because he notes, with
reference to the Lévi-Straussean woman, that, apart from being a mes-
sage, she is “extra-verbal and also extra-signs.” He goes on to observe
that, “the corporeity of, for instance, roast chickens, lies in the fact that
they can be eaten” (which I take to be his extra-sign, which would corre-
spend to a Gibsonean affordance), but, in addition, chicken is also “upper
class food in one country and everyday, if not actually cheap fare, in
another” (which I suppose are instances of his non-verbal signs but which
I would rather describe as cultural affordances). But if it is true, as Rossi-
Landi says, that “we must distinguish between the production and con-
sumption of the body and the production and consumption of the sign,”
then it does not seem that material production, consumption, and circula-
tion have much to teach us about the parallel functions (to the extent that
they exist) in signs.

The comparison between money and signs was made already in Saus-
sure’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 in-
stance of goods, conventionally taken to be the equivalence of any other
kind of goods. In this sense, we should expect it to obligatorily circulate
in a spatial sense, as goods do, not only optionally, as is the case with
signs. This is of course no longer true, when a money transaction can be
made by pressing some buttons on the Internet page of the bank or the
Internet store. Within a very different tradition, money is one of the in-
stances of “institutional facts” most thoroughly discussed by Searle
(1995: 32, 37; 1999). Money is in Searle’s view a kind of “status func-
tion” (“X counts as Y in C”), just as chess and language, that is, it is a
“language-” or “mind-dependant fact,” whether it is commodity money,
which may constitute 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 we noted above, sim-
ply a privileged type of commodity. As for fiat money, as presented by
Searle, it still has some kind of embodiment, in a Husserlean sense, but
the materiality of Internet transactions seems to be considerably subtler.

In the posterity of Saussure, the most recent instance of the money met-
aphor seems to have been offered by Alf Hornborg (1999, 2001a, 2001b),
who continues to consider money to be some kind of sign, although, in
my view, he gives very good reasons for abandoning this identification.62
Hornborg suggests that what has happened to money historically could
be seen as a continuing conversion of signifiers into signifieds, gold stand-
ning for exchange value (to which it is indexically related), paper money
standing for gold, and electronic money standing for paper money. This
description is true enough, but it raises the question what the next step
may be. However, Hornborg’s further discussion seems to indicate that
all money, at least in Western society, is fundamentally deprived of mean-
ing, which makes it into a very curious sign indeed. According to Horn-
borg (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.63

It soon becomes clear, however, that Hornborg is really thinking about
something very different, which, with Benveniste’s (1969) term, may be
called the domain of validity of the system, that is, the limited content resources. According to Benveniste, verbal language seems to be able to talk about everything (it is a “pass-key language,” as Hjelmslev said), while other semiotics resource are more limited in what they may be about; pictures, I have suggested, must make do with everything visible, or everything having visible homologues. The expression resources are what Benveniste calls the mode of operation, that is, sounds or, more exactly, phonemes, in language, and static and bi-dimensional visuality in pictures. Terms such as domain of validity and mode of operation can easily be generalized beyond signs to instruments.

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). 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. To this may be added a peculiar “mode of operation,” in Benveniste’s (1969) sense, that is, a limitation of expression resources, because, as Hornborg (1999: 153) notes, quoting Polanyi, “‘only quantifiable’ objects may serve as money.” If love is only to be exchanged for love, then, I take it, love would not be money, because it is not quantifiable.

The correlate of money being able to stand for everything it 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. 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. Hornborg also claims that money cannot be a “symbol” in the Saussurean sense, because there is not even a remnant of natural connection between signifier and signified. But Hornborg must be wrong about this: in fact, Saussure (1973: 115–116) does not say that coins and words
may be exchanged for unlike units, such as commodities and concepts, respecti-
vely, as Hornborg quotes him to say, but for work and concepts,
and he goes on to contrast the natural relationship in the first case with
the arbitrary one in the second case (which should not be surprising since
Saussure always tends to single out the arbitrariness of language).
Clearly, Saussure has an idea of the “true value” of things, measured in
the amount of work, as we know it from Ricardo and Marx. As Marx
recognized, however, this does not really describe the way money has
been functioning in Western society over the last few hundred years. Still,
I think there is some truth to Saussure’s observation: as a special kind of
exchange of commodities, money is basically of the same kind as that for
which it is exchanged. But the signifier is not really of the same kind as
the signified. I may take some money for my work instead of the food I
really need, but I would hardly accept the signifier “food” in place of its
signifier.
Like the woman of the mate exchange, money only signifies in a sec-
ondary way, because it stands for the act of exchange of which it is a
part. The circulation of mates and the circulation of goods are really first
of all circulations, and then they may be made to signify the fact of circu-
lation. Even though a sign that does not circulate is not much of a sign,
circulation is not constitutive of sign-hood. On the other hand, while the
sign character is constitutive of language, it has a very limited manifesta-
tion in Rossi-Landi’s chicken and Hornborg’s money, and perhaps none
in Lévi-Strauss’ women.

4.2. Signs in and out of the system

In recent intellectual history, system character as a specific property of
(some) signs re-emerges in the work of Terrence Deacon (1997: 69), but
with reference to Peirce instead of Saussure. There is a double irony to
Deacon’s plea for Peircean semiotics, as opposed to Saussurean “semio-
logy.” Not only does he impute to Saussure the very conception of
language which Saussure was out to criticize, but he ascribes to Peirce a
conception of the symbol which, in a strict sense, is found nowhere in his
work and which, in a loose sense, would really apply to all signs. Con-
trary to Deacon’s self-understanding, his semiotics is really Saussurean
at heart.

As anybody who has ever read a single paragraph of Saussure knows,
his bête noire was — in the very terms that Deacons turns against him —
the theory that words could be seen “as labels for objects, or mental im-
ages, or concepts” (1997: 69). Saussure uses the same term (“étiquette”)

as Deacon to criticize this theory. He would heartily agree with Deacon that word meaning cannot “be modelled by an element-by-element mapping between two ‘planes’ of objects.” Yet this is exactly the reproach that Deacon addresses to Saussure. In fact, Saussure (or the students who put together his *Cours* posthumously) may be responsible for the simple drawing of a circle divided into two halves, the signifier and the signified, but he also observed that such a conception was a gross oversimplification, because what really creates meaning in language is what he called “values,” that is, the relations between signs, within an edifice where no terms are positive, and everything depends on everything else. Indeed, Deacon (1997: 70) sounds properly Saussurean when he says, “the correspondence between words and objects is a secondary relationship, subordinate to a web of associative relationships of a quite different sort, which even allows us reference to impossible things.”

In contrast, Peirce claimed no such thing. When Deacon (1997: 96) says that symbols do not form “one-to-one associations” but “many-to-one-associations” and “one-to-many-associations,” Saussure would certainly agree. This is the very meaning of “structuralism,” the linguistic tradition that Saussure is supposed to have initiated. Peirce, however, never discusses this issue. It is true that Peirce maintains that the three parts of the sign may themselves be made up of signs, that is, that the representamen, the object, and the interpretant can be dissolved into new signs, which themselves are made up of signs, and so on indefinitely. But nowhere does he tell us that such chains of signs are not linked by “one-to-one-associations.” More crucially, he does not maintain that this model applies only to symbols, let alone linguistic signs. As far as can be gathered from the Peircean canon, the model applies equally well to icons and indices.65 Indeed, it is the Saussurean tradition, rather than the Peircian one, which has permitted Eco to oppose the thesaurus model of meaning to the dictionary model. But even in Eco’s version, the model applies to all kinds of signs.

In the light of this close correspondence between Saussure’s and Deacon’s conception of language, it is not surprising that when defining a concept of language which goes beyond the linguistic system, they independently come up with the same examples, such as games, norms of etiquette, and ceremonies. In these cases, the system character of the signs seems to be fundamental to their meaning. But it is not true that this system character translates to all signs, nor to all symbols in the Peircean sense. Indeed, this has always been a problem for Saussurean “semiology,” as practised by such French structuralists as Barthes.

The description of system character of language is later rephrased by Deacon (1997: 83) as “possibilities of combination.” Commenting on the
Rumbaugh experiments with chimpanzees, Deacon points to the difficulty of teaching somebody the impossibility of certain combinations. Language has a great number of combinatorial possibilities, but how is a poor ape to learn that “banana juice give” is not one of them? It is impossible to train what is not to be done. Therefore, in order to be able to use a system, one must at some point recode indexical relations as symbolic ones. There are what Deacon (1997: 92, 95) calls “a symbolic threshold,” where the individual gains an insight permitting the reorganization of the whole system.

Deacon’s combinatorial possibilities are reminiscent of the two aspects of the language system, described by Saussure, and later termed the syntagm and the paradigm by Hjelmslev. The syntagm is the set of signs appearing after each other in a combination of signs. The paradigm is the set of signs that may be substituted for each other at the same place in the syntagm. It is possible to generalize these terms, so that the syntagm is any set of signs appearing together, regardless of temporal and spatial relationships, whereas the paradigm consists of all signs that can be substituted for each other. Thus, the syntagm is made up of conjunctions, and the paradigm of disjunctions. Such a model applies very well to language and to games such as chess, as well as to restaurant menus and clothing, as Barthes has shown. However, as I have demonstrated elsewhere (cf. Sonesson 1992a, 1992b), pictures as such do not have any paradigms and syntagms, although depicted objects (such as clothing) may be organized in that way, as may pictorial styles (the variety of colors permitted, different kinds of perspectives in different parts of the painting, as in Russian icons, cf. Uspenskij 1976; etc.). There are, however, other kinds of visual signs, which are not properly speaking pictures, which could be said to contain paradigms and syntagms, or at least the former: naval flag codes, graphic signs for washing instructions (such as those current in Sweden), traffic signs, etc. On the other hand, while complete gesture systems such as ASL certainly have syntagms and paradigms (which is why contemporary linguists insist on calling them “languages”), that is hardly true about many other kinds of gestures, for instance, emblems such as the V-sign.

It might be supposed that all sign systems have syntagms and paradigms. We have seen that some kinds of semiotic resources, in which iconic relationships are dominant, such as pictures, do not have system character in this sense. However, it does not follow that, as Deacon (1997: 100) maintains, “there can be no symbolization without systematic relationships.” If symbolicity is to be defined, as in Peirce conception, by the lack of both iconic and indexical motivation, then this does not imply anything about the system character of the signs. It is of course conceiv-
able that there is some kind of “universal” which says that all signs that
are constituted by means of symbolic relations are also organized into
systems. It may even seem reasonable to argue this point: if signs are not
held together either by iconicity or by indexicality, they may need to form
part of a system in order not to lose their meaning. Or the other way
round: if they are held together by a system, they do not need iconicity
or indexicality.

Nevertheless, it is easy to show that this is not the case: 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 sym-
bol. 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. A
lot of real world symbols are like that. 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 sys-
tem. On the other hand, the absence of a flag on the admiral ship does
signify that the admiral is not onboard (cf. Prieto 1966: 43). 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 symbolicity and systematicity are independent variables, then there is
a series of empirical questions that may be formulated about them. If all
symbols do not form part of sign systems, then is it at least true that all
sign systems are made up of symbols? Perhaps semiotic resources of the
kind in which iconic and/or indexical grounds dominate do not form
sign systems. Then there is the historical issue: do we perhaps need to
learn symbols first in the context of sign systems, before we can use them
independently, unlike what happens with icons and indices? These are all
empirical questions, which should be possible to investigate. Perhaps a
new meaning could be given to the idea often expressed by the Tartu
school, which has maintained that verbal language is primary in relation
to the “secondary modelling systems,” if the latter domain, since it in-
volves systems, is restricted to symbols. In that case, language learning
would really be a “semiotic threshold,” which is important not only as
such, but also for the new possibilities it opens up.

Even if we cannot now resolve any of these issues, one fact deserves to
be pointed out: in my examples of symbolic signs which do not rely on
system character, the symbolicity was created by an explicit convention,
in one case suggested by one person to another, in the second case codi-
fied within certain cultures. It would seem that only the second alternative
is possible as a foundation for sign systems. Some *ens rationis* cannot go it
alone. They have to be built together to some kind of complex *ens reale.*
4.3. Signs as portable memory

Students of prehistoric pictures (such as White 2000) often suggest that creators of such works must have been capable of language. In fact, not much can be concluded on the basis of the depictions having come down to us: even though pictures, by their nature, must have been made of material which conserves the markings on the surface, they might at first have been created on surfaces (such as sand) which only preserve them for a short time. And it is not easy to establish any clear-cut relation between language capacity and the sophistication of the depictions (whatever that is). There are, however, more fundamental reasons for supposing pictures to be later in development than language: they suppose a record that is independent of the human body; and they require us to see a similarity within an overarching dissimilarity. Here we will be concerned with the first property.67

Semiotics is often styled as a science of communication. However, if, unlike rhetoric and hermeneutics, it is concerned with the resources by means of which meaning is conveyed from the sender to the receiver, the properties of these resources become as important as the way they may be transferred. Within semiotics proper, the Tartu school has observed that the accumulation of information as well as of merchandise precede their interchange and is a more elementary and more fundamental characteristic of a culture. According to Lotman (1976), material objects and information are similar to each other, and differ from other phenomena, in two ways: they can be accumulated, whereas for example, sleep and breathing cannot be accumulated, and they are not absorbed completely into the organism, unlike food, instead remaining separate objects after the reception. It is interesting to note, that in this respect, Lotman would not seem to agree with von Uexküll and his followers in biosemiotics, because the kind of “information” which is taken in by the animals within their Umwelt (and certainly by the cells) appears to be entirely absorbed at the end of each cycle.

In another way, however, Lotman’s claim is problematic, for it does not take into account the material resources necessary for making up (most) signs. Although Lotman pinpoints the parallels between merchandise (and therefore, by extension, at least as Lotman seems to understand the term, material objects), he treats the sign as pure information (perhaps because he thinks mainly about verbal texts, notably in their oral form, where the material base is extremely mutable), without which the parallel would have been pointless. Clearly, however, signs are also material objects, and therefore subject to the kind of circulation and accumulation attributed by Lotman to merchandise. More obviously than lan-
guage, a picture is as much a material object as a piece of information, as
much an artifact as an object of perception. This is why we can accumu-
late pictures in a double sense: as material things, in the safe-deposit box
of a bank, or like experiences in the mind. In both senses they maintain a
certain distance with respect to the body. Thus far the parallel holds. Yet
Lotman’s analogy is arguable in the opposite sense, too: food which he
opposes to merchandise and information may be a kind of merchandise,
too, and it is just as apt to be accumulated *qua* merchandise as all other
kinds; and breathing is an activity or perhaps rather a process, and pro-
cesses can never be accumulated, not even the processes of transferring or
accumulating (although they can obviously be converted into tapes and
records), if not as processes themselves (which may, contrary to what
Lotman maintains, suppose an incorporation of sorts into the organism,
such as in the case of gesture). In saying that both merchandise (and by
implication material objects in general) and information may be cir-
culated and accumulated, it seems that Lotman does not say very much.
The real question is perhaps in *which way* and *to what degree* informa-
tion and material objects may be accumulated (and circulated).

Some of the characteristics that Lotman attributes to information are
reminiscent of those which are mentioned by Masuda (1980), one of the
first propagandists of information society, but in some respects Masuda
appears to say something very different: in his view, information is not
consumable, no matter how much it is used, and it can be transferred to
a new place without disappearing from the point of origin; it is not accu-
mulated if it is not used as is the case of material goods but, on the
contrary, by being used increasingly and being integrated with other in-
formation. Where Lotman pinpoints parallels between merchandise and
information, Masuda insists on their differences, observing that informa-
tion, contrary to material objects, may be transferred to new places with-
out disappearing from their point of departure, as well as being used
without being dissipated and spent; and where Lotman argues that infor-
mation stays separate from the organism, Masuda claims it is integrated
with other information, which could be taken to refer to a process taking
place in brain structures, but also, more reasonably, could be expressed in
terms of semantic, or more broadly, semiotic, structures.

Against Masuda as much as against Lotman it is possible to object that
even the most elusive kind of information must be incarnated in some
type of material substance, quite apart from the fact that all access to
the information in question depends on some material apparatuses called
computers, hard discs and compact disc player. In the world of ideas the
content of a book exists indefinitely; but in reality, it evaporates with the
last paper copy that moulders away or the last person that dies or forgets
the content. It could be argued, however, that while the first case is feasible in the case of books (and of language systems that disappear when the last speaker dies — or, rather, when the last two speakers do), only the second case applies to pictures. Pictures must really be conserved in a material form independent of the human body.\textsuperscript{68} Today, that material form may very well be a computer record. But also computerized information is dependant on the wear and tear of the units of storage such as compact discs and hard discs.

In this sense all information goods are temporarily limited — even though some limitations can be of relatively long duration. Roland Posner (1989) distinguishes two types of artifacts: the transitory ones (as the sound of a woman’s high-heeled shoes against the pavement) and enduring ones (as the prints that the woman’s shoes may leave in clay, in particular if the latter is later dried). The transitory artifacts, in this sense, also have a material aspect, just as the lasting ones; they only have the particularity of developing in time, which is why they cannot be accumulated without first being converted. Normally, it is Posner’s transitory artifacts whose development in time causes them to seem somehow “less” material (which is of course nonsense but must be taken seriously in the Lifeworld). It is easy to understand that thinkers of the Enlightenment like Diderot and Lessing could conceive of language (which they tended to imagine in its spoken form) as a “more subtle material” than the picture that endures in time (at least until air is let into the prehistoric caverns or car exhaust is allowed to devastate the frescoes of a later time).

Strictly speaking, the sound sequence produced by high heels against the pavement, and other transitory artifacts, can of course be accumulated (as opposed to being converted into an enduring artifact, which is the case of the sound tape), in the form of the (typical) leg movements producing this sound, that is, as a mimetic record, accumulated in the body, but still distinct from it, since the movements can be learnt and imitated, and even intentionally produced as signs of (traditional) femininity. Posner’s example of an enduring artifact is interesting in another way: the cast of prints left by the woman’s high heels is of course an organism-independent record, just as the marks of a Roman soldier’s sandals found in prehistoric caves, and the hand-prints on cave walls. Another case in point may very well be the so-called Berekhat Ram figure, which, if it is not the likeness of a woman, as has been claimed with very little justification, could be the result of abrasion produced by regular movements indicating the intervention of a human agent (that is, “anthropogenic” movements). This suggests that the first organism-independent records are indexical, rather than iconic, in character. However, even if objects like
these were independent objects already in prehistory, there is nothing to
disprove that they were perceived as signs, that is, as expressions differenti-
ated from contents, before pictures were so perceived.

Harold Innes (1972 [1950]) differentiates all cultures according as they
favor more lasting storage media which are difficult to transport, such as
stone tablets, or media which are less enduring, but easier to transport
like the papyrus. In other words, it could be said that some media are bet-
ter for conserving information in time, while other do a better job of sus-
taining it in space — which could also be expressed in Lotman’s terms by
pointing out that some media provide mainly for accumulation and
others for circulation. But, again, it may be better to ask what degree
and kind of accumulation and circulation pertain to different storage
media.

An even more fundamental question, however, may be what this phe-
nomenon called information is. We have supposed so far (as Lotman cer-
tainly did) that it can be identified with what we have called meaning, and
perhaps even more specifically with signs. Unlike Masuda, most propa-
gandists of the society of information, also called the knowledge econ-
omy, have not tried to explicate their terms. Clearly, however, the term
“accumulation,” used by both Masuda and Lotman, as well as the term
“storage media,” employed by Innes, suggests that we are somehow con-
cerned here with what can be preserved, not, as material objects, in a
storehouse, but in memory. Individual memories, however, may well be
accumulated (and integrated), but not transferred. In order to be both ac-
cumulated and transferable, it seems, memory must be social: we know it
as tradition (in the sense of hermeneutics), as rumour, but also as collect-
ive memory. Another name for tradition (and rumour) is history —
which may also comprise prehistory.

According to Donald’s (1991, 2001) conception of evolution, many
mammals, who for the rest live in the immediate present, are already ca-
pable of episodic memory, which amounts to the representation of events
in terms of their moment and place of occurrence (cf. Figure 6). The first
transition, which antedates language and remains intact at its loss (and
which Donald identifies with homo erectus and wants to reserve for hu-
man beings alone) brings about mimetic memory, which corresponds to
such abilities as the construction of tools, miming, imitation, coordinated
hunting, a complex social structure and simple rituals. This stage thus in
parts seems to correspond to what we have called the attainment of the
semiotic function (though Donald only notes this obliquely, in talking
about the use of intentional systems of communication and the distinction
of the referent). Yet, it should be noted already at this point that while
all abilities subsumed in this stage seem to depend on iconic relations
(perceptions of similarity), only some of them are signs, because they do not involve any asymmetric relation between an expression and the content for which it stands.

Only the second transition brings about language (which, Donald muses, may at first have been gestual) 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. As I have suggested above, this is the stage at which signs tend to form systems. 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 eternally 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. Here, then, we reach the stage, the existence of which I suggested above, in which signs can be accumulated outside, and in a way independently, of individual subjects.
4.4. The schemes of perception and memory

In recent time, the notion of scheme has met with a rare popularity among writers associated within artificial intelligence, cognitive science, and linguistics, but the history of the term, and, to some extent, the notion goes much further back in the scholarly literature. The notion of scheme has been applied to memory, perception, and action, as well as to the ways in which perception is anticipated in memory and built up from action.

According to Rumelhart and Norman (1978: 41), schemes are “active, interrelated knowledge structures, actively engaged in the comprehension of arriving information, guiding the execution of processing operations.” Examples given by these authors, as well as by others within AI, are stories, typical behavior sequences such as visits to restaurants, menus, etc. Also the cognitive psychologist Neisser (1976: 51) employs the term, with reference to the work of Minsky and Goffman, who, however, in the discipline of artificial intelligence and sociology, respectively, use the term “frame” to designate the same or similar phenomena; but it seems clear from the context, that the term “scheme,” as employed by Neisser, is also akin to “hypothesis-testing” as discussed in earlier perceptual psychology, and to the notion of “set” in social psychology:

A scheme is that portion of the entire perceptual cycle which is internal to the perceiver, modifiable by experience, and somehow specific to what is being perceived. The scheme accepts information as it becomes available at sensory surfaces and is changed by that information; it directs movements and exploratory activities that make more information available, by which it is further modified. (Neisser 1976: 54)

Here, then, is first of all preparatory to perception. This definition should remind us of the double facet of the scheme, as it is conceived by Piaget (1967b: 20, 25): that is, assimilation and accommodation. At first, the organism perforce assimilates stimuli to a pre-given scheme, but at the same time the scheme is modified, as it accommodates to the outer environment. In Piaget’s view, to grasp an object with both hands constitutes, to the five- to six-month old child, essentially a scheme of assimilation, an incorporation of the outer world into the self, but in this same scheme, there are also factors, such as the distance of operation, which must be accommodated to the size of the object, which means adapting the inner representation to the world.70

Both Neisser and the exponents of the AI approach also refer to the work of the social psychologist Bartlett (1932), who used the notion of
scheme in his studies of memory, notably in order to explain the successive modifications which a story stemming from an alien culture were subjected to, as the experimental subjects were asked to recount it within increasing temporal distances. The scheme is to Bartlett “the setting which makes perceiving possible,” but also, more dynamically, an “effort after meaning” (1932: 32, 44); more precisely, it is “an active organization of past reactions, or of past experiences, which must always be supposed to be operating in any well-adapted organism’s response,” with the result that responses do not occur in isolation, but “as a unitary mass” (1932: 201).

Bartlett himself claims his employment of the term was inspired by the usage of the physiologist Head, who applied it to body consciousness (cf. Bartlett 1958: 146), but in the original work, he also alludes to the psychologist Janet, as well as to the sociologist Halbwachs, and these references seem more directly to the point, both because the latter authors evoke the notion of scheme in the context of a discussion of memory, and because they do so, like Bartlett (in particular in Bartlett 1923), to emphasize the part of social construction in memory. Janet’s (1928: 284) indications on this matter are, to be sure, very brief: he notes that many people are in the habit of using imaginary spatial arrangements, i.e., a schéma tiré de l’espace, where they place information they would like to remember, in the same manner as we enter an important date in the calendary grid furnished by our diary. The example he gives is an ancient Nahua map (i.e., the exodus of Totomihuaca, Puebla, Mexico), which he shows to be a history book, where the imaginary paths form a scheme on which to append the events worthy of notice. Here, then, we are already concerned with an organism independent artifact, which however also serves as a series of interrelated hints for reconstructing the memory in the mind (going, notably, from deployment in space to action in time).

As a loyal follower of Durkheim, Halbwachs (1952 [1925], 1968 [1950]) also insists on the projection of memory onto tangible space but he is even more emphatic when it comes to the social character of the act of recollection:

En réalité, c’est parce que d’autres souvenirs en rapport avec celui-ci subsistent autour de nous, dans les objets, dans les êtres au milieu desquels nous vivons, ou en nous-mêmes: points de repère dans l’espace et le temps, notions historiques, géographiques, biographiques, politiques, donnés d’expérience courant et façon de voir familières, que nous sommes en mesure de déterminer avec une précision croissante ce qui n’était d’abord que le schéma vide d’un événement d’autrefois. (Halbwachs 1952 [1925]: 38–39)
This is already the scheme as conceived by Bartlett; and it already serves as a lattice of pegs on which individual facts may be affixed.

The tradition from Bartlett has been taken up again recently, not only inside AI, but also in cognitive psychology and linguistics. Kintsch (1974, 1977) has resumed the memory experiments along the same lines, and has, together with van Dijk (1978), demonstrated, with the aid of summarizing tasks, that “story grammars” are particular cases of schemes. Also taking his point of departure from Bartlett, Chafe (1977) shows how, for instance, the chunk of experience labelled “my childhood” is verbalized through a number of steps, after being broken down into “subchunks.” Rubin (1995: 21) uses Bartlett’s concept of scheme, enriched by the recent tradition in cognitive science, to analyze oral tradition, separating “scripts” which have both expression and content, and “story grammars,” which only contain high-level contents. More fundamentally, from our point of view, Rubin (1995: 70) also observes that there are also schemes that are found exclusively on the level of expression, such as rhyme and rhythm. He goes on to observe that there has been a tendency in scheme research to deny the possibility of “surfaces schemas,” opposing superficial phenomena to gist. But, as Rubin rightly claims, there is an ambiguity in the term “meaning” as used in Bartlett’s phrase “effort after meaning.” Rubin here rediscovers our distinction between signs and meanings in a broad sense (referring, in the latter case, to Gestalt psychology):

In a general sense, it [meaning] denotes everything which is important or structured in stimuli. In a specific and technical sense, it denotes gist as opposed to form, semantics as opposed to syntax and phonetics, or underlying propositional structure as opposed to surface structure. The general sense includes all form of organization, the specific technical sense does not. (Rubin 1995: 72)

A quite different tradition is, as it appears, represented by the phenomenologist Schütz (1974 [1932]), whose only indication of sources is a negative one, insisting that he is not concerned with the schema concept familiar from the writings of Kant. A scheme of our experience (ein Schema unserer Erfahrung), as Schütz’s wording more precisely goes, is a context of meaning within our lived experience, which grasps the objects of our experience which have been constituted in our lived experience, yet does not make manifest the way in which the lived experiences have been constituted into objects of our experience. (Schütz 1974 [1932]: 109, my translation)

In other words, a series of earlier “polythetic acts” are now reconceived “monothetically.” Once constituted in this way, these schemes are, as it is
later explained (1974 [1932]: 111), applied to the interpretation of other experiences. We are reminded of the characterization of Halbwachs and Bartlett, according to which the schemes stem from earlier actions and are applied to later experiences. This is clearly the same procedure which Husserl and Gurwitsch called *formalization*, and which the second compared to what Piaget describes as “abstraction from the action” (as opposed to “abstraction from the object”); and it obviously related to the notion of *sedimentation*, which I have already adapted from Schütz. In later works, Schütz (1967: 299, 327–328), describes the sign as made up of four different schemes, thus containing the sediments of experiences deriving from different spheres of existence.

In the theories of Bartlett, Piaget, Halbwachs, and Schütz, as well as in recent AI, the scheme thus seems to be a (more or less) static result of earlier actions, which in turn is applied to present actions in order to interpret them. In so doing, they connect present actions and/or objects (and perhaps also earlier and later instances) into a coherent whole. For all of these thinkers, however, with the exception of Piaget (and the AI researchers who are at least not very clear about it), schemes are not the results of individual experiences, but of experiences inscribed into a social context. In scholastic terms, *ens rationis* are transformed into *ens reale*, which are not of a physical kind. But, at the same time, this mind-independent being acquires system character — something that only appears to be possible given a social grounding.72

In an earlier work (Sonesson 1988), relying on the work of Bartlett, Piaget, Halbwachs, Janet, and Schütz, I determined that the scheme might be understood as an overarching structure endowed with meaning, which, with the aid of a relation of order, in the form of syntagms and/or paradigms, joins together a set of in other respects independent units of meaning; and it is constituted out of earlier experiences, i.e., they are sediments of lapsed sequences of behavior (although at much higher levels of abstraction for Piaget than for Bartlett and Schütz); and, more specifically, they are socially constituted, i.e., the actions from which they derive, and/or their results, arise in interaction with other members of the *socium*, and thus possess a least some amount of intersubjective validity, inside the limits of a particular society. Each scheme contains principles of relevance which serve to extricate from each ineffable object such features as are of importance relative to a particular point of view (this is Piaget’s *assimilation*, and the principle of *abstractive relevancy*, according to Bühler 1934); and it also supplies properties missing from the ineffable objects, or modify the objects so as to adapt them to the expectancies embodied in the schemes (this is another aspect of Piaget’s notion of *assimilation*, and what Bühler terms *apperceptive supplementation*; also, it is in-
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4.5. Collective memory and the "tragedy of culture"

The notion of collective memory, if not that of scheme, has recently been taken up again by James Wertsch, in relation, in particular, to the work of Bartlett. Wertsch, however, conceives an opposition between the static conception of memory attributed to Halbwachs and a more dynamic idea of "remembering" for which he makes Bartlett responsible. But if
schemes are the result of actions and are applied to actions, this opposition does not make sense. Not only is the dynamic aspect present in Halbwachs’ work, as Wertsch (2002: 21) himself remarks, but the static aspect is incorporated into that of Bartlett, by means of the notion of scheme. This, however, leads to Wertsch having qualms about collective memory being some kind of super-mind separate from that of individuals. Instead he favors something that he calls a “distributed version of collective memory.”

To understand the human Lifeworld, however, it is necessary to posit at least two kinds of social memory, on of them being similar to the Saussurean language system, which is a Durkheimean notion, and the other comparable to the Saussurean parole, which is said to derive form Gabriel Tarde’s idea of conversation. There is nothing mystical about the former: as Husserl (1962a: 365–386) pointed out in the case of geometry, abstract systems are dependant for their existence on some kind of material incarnation, but cannot be entirely reduced to the latter. From the Bakhtin circle to pragmatics, there has been an unfortunately tendency to reduce sociality to dialogue, or more generally, joint action. But there is more to society than interaction. If we start out from the Ego, there clearly are different kinds of alterity: that of the other person (alter), that of the environment (alius), and that of the sign system itself (aliquid).

Having recourse to the metaphor of the three common types of personal pronouns to describe analogies between persons and cultures, Peirce originally put them in place of what was later to become the three fundamental categories of Firstness, Secondness, and Thirdness. But Peirce did not identify the second person, as one may at first naively expect, with Secondness, but with Thirdness. In his view, the second person was the most important, not the first: “all thought is addressed to a second person, or to one’s future self as a second person” (quoted from Singer 1984: 83–94). In terms that Peirce took over from Schiller, the first person stood for the infinite impulse (Firstness), the third person for sensuousness (Secondness), and the second person for the harmonising principle (Thirdness). Peirce called his own doctrine “Tuisim” (from “Tu,” as opposed to “Ego” and “It”), and he prophesied about a “tuistic age,” in which peace and harmony would prevail. So the Peircean other is a friend and collaborator; he is not the spirit that always says no, the devil in a Biblical sense.

It is striking that not only Peirce, but also the late Cassirer and Popper came up with threefold divisions of “what there is.” If one of these instances can be identified with subjectivity, then all three thinkers would seem to agree that there are two kinds of alterity. Even though both Peirce and Cassirer, at times, identified the triads with the personal pro-
nouns, it does not seem that they were thinking about exactly the same thing; nor was Popper.

The most general sense of alterity seems, at last according to some definitions, to be contained in Peirce’s notion of Secondness: like Berkeley, Destutt de Tracy and Maine de Biran before him and Sartre after him, Peirce identifies our sense of reality with resistance, that is, “this sense of being acted upon, which is our sense of the reality of things” (EP 2: 4)

A door is slightly ajar. You try to open it. Something prevents. You put your shoulder against it, and experiences a sense of effort and a sense of resistance. These are not two forms of consciousness; they are two aspects of one two-sided consciousness. It is inconceivable that there should be any effort without resistance, or any without a contrary effort. This double-sided consciousness is Secondness. (EP 2: 268)

This explains that in Peirce’s early trichotomy, using the three personal pronouns, it is the third person, and not the second person, which corresponds to the later notion of Secondness. But this only becomes self-explanatory, when we remember that, to Peirce, the other is never someone who stands opposed to the Ego, certainly not as in the Hegel-Sartre tradition, but not even in the more general sense of the Bakhtinian conception. Indeed, the second person is a harmonizing influence.

The basic problem, however, is that Alter is thus given the function later assigned to Thirdness. But this means the sign as such, which later becomes the incarnation of Thirdness, has no part to play in the earlier conception. Like the pragmatic models I have criticized elsewhere, it thus presents a situation of communication in which speaker, hearer and referent encounter each other without any mediation. Indeed, like pragmatics, as well as the Bakhtin circle, this model tends to reduce the sign system to the interaction with the other (cf. Sonesson 1999). There is thus no other alterity than the second person (which is not really an other, because he is in harmony with the Ego) — and that of the exterior world.

As far as I know, Peirce never put his later trichotomy in relation to the three pronouns, but if he had done so, I think he should have arrived at a quite different conception. If Firstness remains akin to “the infinite impulse,” then both the Ego and the Alter would basically be of this kind. But as an Alter, as partner in a dialogue, Alter would already be a kind of Secondness, just as Ego would be to Alter. In this sense, just as the outside world, the sphere of reference, Alter is something which resists us, and which we resist. But even the sign, which is of the nature of law, and thus Thirdness, must partake of Secondness, because all semiotic structures impose constraints on our possibilities of dialogue, and, in the end, of being.
In this interpretation, the trichotomy is roughly similar to Popper’s (1972) more generally well-known conception of the “three worlds,” with a different numbering: the first world corresponds the third person, the sphere of reference, and both the first and the second person pertain to the second world. The third world, however, is of the same general kind as Peircean Thirdness: it involves the kind of generality that is the result of organism-independent representations. In the sociology of the early twentieth century, as well as in latter-day Marxist writings, this is known as objectification or reification: the transformation of relations between people into objective facts, often ending up becoming artifacts standing on their own. We here recognize those *ens rationis*, which become *ens reale*, without necessarily becoming physical. In a late book, Cassirer (1942: 113) argued, against Simmel more than against the Marxists, that such processes of objectification were not only negative phenomena, not only a “tragedy of culture”: rather, they represented the origin of culture.

When later on, in his *Nachlass*, Cassirer defines the three *Basisphänomen* in terms of the three pronouns, objectification is mentioned only in passing, but it seems essential to the whole conception. The first person, the “Monas,” also characterized as “Leben,” is no doubt close to the “infinite impulse” of Peirce (which is not so strange, because, while Peirce starts out from Schiller, Cassirer refers to Goethe). More explicitly than in Peirce’s discussion, the second person is not characterized in itself, but precisely as being second to a first: it involves “Wirken” and “Zusammenleben,” all of which it can only be in relation to a first person. However, it is also “Wirkung und Gegenwirkung,” just as the Peircean Secondness, which, as we have seen, does not concern the second person. The third person, finally, does not correspond to something “out there,” but to the to the world of our objectifications, epitomized by “Werke” (cf. Figure 7).

The latter terms seem to be equivalent to the notion of *opus* that plays an important part in the theory of Augusto Ponzio (1993; where it seems to derive both from Rossi-Landi and Levinas): it is a kind of exteriorisation of the self (and perhaps also its relations to the other). Indeed, Ponzio talks about the other as being only an instance of “relative alterity.” “Absolute alterity,” on the other hand, seems at times to involve the material world, at times the world of signs or *opus*. Both descriptions are, in my view, correct. Both the material world and the world of objectifications impose much more severe constraints on our personal being than the other person as such; they are, so to speak, much less negotiable in the form of dialogue.

The suggestions made by Peirce as well as the late Cassirer concerning the basic categories (of the situation of communication if not of being)
are fragmentary and difficult to analyze. Nevertheless, even our superficial considerations may offer some insights of value to semiotics generally and cultural semiotics in particular. From the point of view of cultural semiotics, three categories of understanding seem to be insufficient. It may be necessary to distinguish the relationship between persons (Peirce’s ticism, the Bakhtinean dialogue, etc.) from the thing character of signs (“Werk”/opus/reification). And the latter must be kept separate from the resistance offered by the material world. Starting out from an egocentric definition, however, everything else turns out to involve differentiations within the sphere of alterity. They all partake of the real, Peircean resistance, ens rationis transformed into ens reale.

4.6. Four ages of understanding in evolution and development

Donald’s theory of human evolution really posits four different kinds of “cultures,” which he also characterizes as different “representational strategies.” When introducing the first “culture,” epitomized by a strategy of episodic representation, Donald (1991: 148) evokes Tulving’s

Figure 7. Comparison of the similarities and differences between the early Peirce (in terms of pronouns) and the late Cassirer (numbered terms)
A well-known notion of episodic memory, which corresponds to a recollection of events, often in a narrative form, and involving the time and place of the event as well as associated emotions. Episodic memory, in this sense, is a kind of declarative memory, of “knowing-that,” as opposed to procedural memory, the “knowing-how” (cf. Figure 8).

According to Donald, humans and apes and probably many other mammals share the capacities for both procedural memory and episodic memory. Since Donald (1991: 149) characterizes the behavior of animals living in episodic culture as being “unreflective, concrete, and situation-bound,” and as a mode of “living entirely in the present,” one would expect this term to describe no strategy of representation, and thus of memory, at all, but at the very most the protentions and retentions of consciousness. However, Donald goes on to quote Tulving’s concept of episodic memory, referring to its insertion in space and time, and he observes that, while procedural memory is common to all animals, episodic memory is shared only by some mammals, notably apes and birds. Episodic memory therefore already is a quite sophisticated property of mind. While memory of this kind would seem to give rise to the use of signs in the form of notae as conceived by Leibniz and finding its apotheosis in the calendar, a memory device discussed by Halbwachs, it clearly

<table>
<thead>
<tr>
<th>Type of memory</th>
<th>Type of accumulation</th>
<th>Type of embodiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Episodic</td>
<td>Attention span (event in time/space)</td>
<td>—</td>
</tr>
<tr>
<td>Mimetic</td>
<td>Action sequence co-owned by Ego and Alter</td>
<td>Own body</td>
</tr>
<tr>
<td>Mythic</td>
<td>Transient artefact co-produced by Ego and Alter</td>
<td>In the interaction between Ego and Alter</td>
</tr>
<tr>
<td>Theoretic</td>
<td>Enduring artefact co-externalised by Ego and Alter</td>
<td>External in relation to Ego and Alter</td>
</tr>
</tbody>
</table>

Figure 8. Semiotic stages of development, according to Donald, relation to the semiotic function and the different principles
Donald’s episodic stage is thus an type of understanding preceding the emergence of signs, still continuous, from this point of view, with meaning as found in perception. Similarly, we will see that the sign, which pertains to the second age of understanding, only come to its own somewhere in the middle of Donald’s mimetic stage.

Mimetic culture starts out with the emergence of “conscious, self-initiated, representational acts, which are intentional [i.e., in the sense of deliberate, not in that of object-directed] but not linguistic” (1991: 168). The examples given by Donald are such things as gesture, dance, ritual, mime, play-acting, and (precise) imitation, but also tool use (or perhaps rather the social generalization of tool use) and skill. Curiously, Donald (1991: 170) claims to have derived his idea of mimesis from the literary theorist Eric Auerbach, who wrote a history of realist literature with this very title — although Donald observes that what Auerbach discusses is not pure mimesis in his terms. It is not clear, however, that this is Donaldean mimesis in any sense. Rather, it would have been more fitting to refer to the sense of the term mimesis in Antiquity, not perhaps as used by Plato to describe the relationship between perceptual reality and the world of ideas, but rather to one of the usages to which the term in put, mainly by Aristotle’s, as the representation of action by action, different from (verbal) narration or diegesis.

In fact, in his early book, Donald (1991: 168–169) opposes mimesis to mimicry and imitation, both of which are said to be quite common in animals but lacking “a representational dimension.” Though the import of this claim is not clear, it could be taken to mean that mimicry and imitation, in this sense, lack differentiation. In Donald’s (2001: 260–261) later book, however, “(precise) imitation” is an instance of mimesis. Perhaps the difference between imitation as referred to in these two passages could be taken to involve, on the one hand, the very early stage of more or less automatic imitation in the infant discovered by Meltzoff (such as sticking out the tongue to one who does just that, and other instances of “neonatal mirroring”), and, on the other hand, a more explicit capacity for imitation which matures much later (cf. Gallagher 2005; Mandler 2004; also see Donald 2001: 264). Interestingly, imitation, in this advanced sense, is claimed by Piaget (1967 [1945]) to be the origin of the semiotic function. Yet, it would seem that imitation, even in the latter sense, is not necessary what we have describe above as a sign.

Or perhaps the different understanding of the place of imitation in Donald’s two works could be referred to the distinction made by Tomasello (1999) between imitation of the goal, of which he believes apes to be
capable, and imitation of the means, which is a capacity Tomasello would
like to restrict to human beings, although he later on (in Tomasello et al.
2005) recognizes its presence in at least some apes. Indeed, Donald (1991:
168–169) claims imitation “is found especially in monkeys and apes.” At
first it may seem strange that imitating the goal is presented as being eas-
er than imitating the means by which the goal is achieved. But no doubt
it is less demanding to recognize the interest of the aim (getting the
banana) than the interest of the steps requisite for realizing the goal. At
another level, it is like attending to the content, not the expression, of a
sign. Indeed, it is an instance of quite ordinary Lifeworld behavior.

Not only is the means by which a goal is realized not identical, though
in some sense parallel, to a sign relation, but the imitation of such an act
is not properly speaking a sign. As Searle (1995: 40–41) points out, while
anthropology texts routinely attributes fundamental importance to the
emergence of tool use in human society, they tend to ignore the first im-
position of meaning by means of collective intentionality, which, on the
face of it, seems a much more important dividing line.74 Why, one may
wonder, would tool use be part of mimetic culture, and why would skill
in general by such a part? One may wonder whether these types of behav-
ior are not simply “routine locomotor acts” or “procedural memory”
which Donald (1991: 168) elsewhere takes pains to separate from mime-
sis. No doubt Donald (1991: 171) would answer that they are different
because they comply with the criteria for mimetic acts in being “inten-
tional” (that is, voluntary) “generative” (that is, analyzable into compo-
nents which may be recombined into new wholes)75, and “communicative”
(or at least, as we shall see “public”), having reference (“in mimesis
the referential act must be distinguished from its referent,” that is, in our
terms, there must be differentiation), standing for an unlimited number of
object, and being auto-cued (produced without external stimulus and
therefore being the earliest form of “thinking”). As we have seen, genera-
tivity is a property of many kinds of meaning, which are not signs. How-
ever, it is not clear in what sense tool use and many other kinds of skill
are “communicative,” and therefore, in which way they have reference
and stand for an unlimited number of objects.

After introducing “communicativity” as a criterion of mimesis, how-
ever, Donald goes on to say:

Although mimesis may not have originated as a means of communication, and
might have originated in a different means of reproductive memory, such as tool-
making, mimetic acts by their nature are usually public and inherently possess the
potential to communicate. A mimetic act can be interpreted by others who possess
a sufficient capacity for event perception. Given the pre-established primate ca-
pacity for event perception, the presence of mimetic skills would inevitably lead to
some form of social communication. (Donald 1991: 172)

In view of this, I would say that tool use and other kinds of skill as
such are not mimesis, because they are not communicative, but they are
“public,” and they lend themselves to imitation — which leads to gener-
alization of tool use and skill in society. This is where they become differ-
ent from routine acts and procedural memory. They are socially shared.
But this is only possible if the act can be separated from the unique tool
user and transferred to another user. That is, the act as token must be ab-
stracted to a type in order to be realized in another token. What is shared
is the type, in other words the scheme of interpretation, which defines the
principles of relevance. In this sense (not in the sense of reference), a sin-
gle mimetic act may correspond to various events.

It is therefore by means of imitation that the “extension of conscious
control into the domain of action” (2001: 261) may be obtained. But the
act of imitation is in no way a sign. If I see somebody use a stone as a tool
to crack open the shell of a nut, I may do the same thing, not to bring
into mind the act of the other person I have observed, but to obtain the
same effect. I attempt to realize the same act as he did, that is, to open the
shell up, so that I can take out the nut and eat it. Instead of producing an
expression that is non-thematic but directly given which refers to a con-
tent that is thematic but indirectly given, I am realising a new instance
of the category of acts consisting in cracking open a nutshell. Like Tom-
asello’s apes, I may of course try to obtain the same effect without attend-
ing to the adequate means, which would produce a failed act of imitation.
Or, I may merely simulate the outer actions of cracking the shell open,
without letting them have a sufficient impact on the physical environ-
ment, in which case I may either be engaged in symbolic play, play-
acting, or simply practicing the movements.

Imitation may thus be said to be differentiated, in the sense of separat-
ing the mediator and that which is mediated, but it is not asymmetric, nei-
ther in the sense of focus, nor in that of directness. Indeed, it is really the
type that is mediated by the token. This also means that the purpose of
the act of imitation is not to present the original act to another subject
(or even to oneself). Bentele (1984) in fact argued against Piaget that im-
itation does not manifest the semiotic function, but is a prerequisite for it:
indeed, it will function as a sign only to the extent that it is taken to refer
back to the imitated act, instead of just being another instance of the
same kind. The same observation should apply to “symbolic” play, and
is in fact made by Bentele in another context: the toy is a sign, he claims,
only to the extent that the child takes it to represent the real thing, which
cannot be true, for instance, in the case of a toy lion if the child has no experience of the real animal. In fact, the extent of the knowledge of the child may not be the relevant factor, but rather the attitude taken by the child: according to the degree of fictionality of the play world, i.e., its separateness from the real world, which is grasped by the child (cf. Winner 1982; Gardner and Wolf 1983) the lion may be made to instantiate a real lion act or to present into to the other children.

Acts of imitation in this sense have two interesting properties: they are "public," in the very broad sense characterized by Donald, i.e., they may be perceptually, often visually, inspected; and they can be copied by means of the observer’s own body, with or without some additional implement such as a stone. In both these ways, imitation is different from episodic memory; and it is different from procedural memory in being a public record. Like in procedural memory, the record is located in the own body, but it can only function as memory to the extent that it is somehow separable from the body as such. While being in the body, it is not of the body. In fact, this can only be so, to the extent that some memory traces are instantiated in other bodies as well as in the own body. This supposes a distinction between token and type (that is, relevance) preceding that of the semiotic function. It is the process by which ens rationis is transformed into ens reale.

Jordan Zlatev (in press a, in press b; Zlatev et al. 2005) who has adapted Donald’s concept of mimesis and extended it to child development, talks about “bodily mimesis” as being based on a cross-modal mapping between “exteroception (i.e., perception of the environment, normally dominated by vision) and proprioception (perception of one’s own body, normally through kinaesthetic sense)” (Zlatev in press b). This supposes a principle of relevance for realising the mapping and it would also seem to require a record of this mapping in the body. However, since this is also a property of what Zlatev calls proto-mimesis (which would include, for instance, “neonatal mirroring”), such a principle of relevance must be capable of being innate and/or resulting from a direct stimulus instead of auto-cuing.

Real mimesis (as opposed to proto-mimesis), according to Zlatev, would in addition require a number of properties which I have already introduced in the definition of the sign: the signifier and the signified should be differentiated (with reference to my discussion of this concept); the subject of the act has the intention (in the sense of purpose) “for the act to stand for some action, object or event for an addressee (and for the addressee to recognize this intention)”; and the act is not conventional-normative, nor does it have system character. However, if schemes of interpretation are normally applied as a matter of course, although they
may in principle be made conscious, then, as I have already hinted above, it is better to define the sign from the point of view of the addressee: the addressee takes the addresser to use the expression with the purpose of representing the content to the addressee and he takes the addresser to have the purpose that this purpose shall be recognized. I obviously take representation to be explicated with what I have called double asymmetry above.

Mimesis is dyadic or triadic. Only cross-modal mapping and differentiation is necessary for dyadic mimesis, such as action imitation, shared attention, and mirror self-recognition. Triadic mimesis also requires declarative pointing, iconic gestures and full joint attention. Mimetic acts that are conventional and/or systemic such as sign language are post-mimetic. Here Zlatev also places ordinary spoken language. Dyadic mimetic acts are thus still not signs. The differentiation they suppose is that between Ego and Alter, not necessarily, it seems, between expression and content. If however the own body is made to imitate the action first perceived on the body of the other, differentiation of expression and content here coincides with differentiation of self and other. It is, however, important to note that these are two different kinds of differentiation, for, first, this explains why the emergence of the sign function can only take place within mimesis, and, second, it raises the question how this double differentiation is then narrowed down to that between an expression separate from the body and a corresponding content.

In describing ordinary language as post-mimetic, Zlatev would seem to reject the third stage posited by Donald, the mythic stage, which is dominated by language. Yet in terms of memory, as Donald originally expressed it, language is certainly different from mimesis. Language may reasonable be thought to have originated as a kind of mimetic device, being different at first, perhaps, because it does not rely any more to any appreciable extent on iconic and/or indexical relationships. Once it evinces system character, however, at least of the magnitude present in human languages, it acquires an existence of its own. What ever else has system character, language certainly does. It thus initiates the third age of understanding, signs organized into coherent systems.

In a way, language only appears to require the presence of at least two human beings to exist, who somehow maintain it between them, and when these two speakers die, the language also dies. And yet a language, while it exists, seems to be something more than its speakers. The manifold relationships between its terms must subsist somewhere, in a place that cannot be identified with any individual mind. As Searle observed, language itself is the foremost language-dependant fact. Language is not accumulated in the body like mimetic memory, nor as individual
facts in the single historically situated mind, as is episodic memory. More
than mimesis, it has at the same time a systemic and a normative exis-
tence, which goes beyond individuals. In this sense, it is clearly a con-
straint imposed on the individuals, as is Popper’s “objective world”
(World 3), a structure that puts up resistance to the individuals, in the
Peircean sense. Already in its oral form, as conversation and tradition, it
is part of collective memory, as Bartlett recognized (but Wertsch some-
how ignored), initiating, as Donald (2001: 298) points out, the “collectiv-
ity of mind.”

Husserl’s (1962a: 365–386) description of the origin of geometry may
be taken as a case in point. Geometry starts out from the acts accom-
plished by the land surveyors, which is a kind of skill or even tool use,
and therefore pertaining to mimetic culture, being subject to imitation,
though never becoming signs in themselves. Indeed, it may be added
that, at first, the acts of land surveying may well have been inextricable
parts of more global acts involving the practice of agriculture. They have
to be imitated, and thus typified, in order to become part of mimetic cul-
ture. Acts of land surveying may be sedimented in the form of surveyor’s
maps. Husserl, however, is more interested in the way the general quanti-
tative relationships of space are abstracted out, giving rise to the mathe-
matical speciality known as geometry. Geometry, like language, has an
existence, beyond all the fields it may be used to survey, in the abstract
system of quantitative relationships we call geometry, as soon as it can
be conveyed at least from one addressee to another (who may be
the same person at another point in time). It gains in independence be-
coming a coherent system where everything works together, as in the
Saussurean concept of language, unknowingly taken up by Deacon
(2003) in terms of “semiotic constraints.” Yet, like language, as Husserl,
recognized, geometry retains only a precarious existence, a long as it can-
not be materialised outside the minds of its users. Geometry, as it hap-
pens, can be externalized, both as lines and figures, and as mathematical
notation. This is the beginning of what Donald calls theoretic culture. It
coincides with the fourth age of understanding, which evinces organism-

visuographic markings first appear, according to Donald (1991: 276,
2001: 305f, with Marshack’s engraved rib from Pech de l’Azé in France,
which is however an isolated instance (if it is anything at all). It is fol-
lowed up later by purposeful arrangements of objects in ritualistic set-
tings, as well as by pictorial representation epitomized by cave paintings.
The existence of pictures allows language to be given a visuo-graphic rep-
resentation, which we know as writing (but which would also include geo-
metrical notation). Writing and pictures together permit the emergence
of science, which is independent of individual minds not only as representation, but also, at least in its aspiration, as referent.

Ivins (1953) pointed out that it is the reproducibility of pictures (as in Floras, for instance) that makes them into scientific instruments. In this sense, in their capacity of being permanent records, pictures are not, as art historians are wont to say, unavoidably unique, but, on the contrary, are destined for reproduction. Indeed, they permit repeated acts of perception, as do no earlier memory records. The development of the capacity for reproducing the record itself has a long history recently giving rise to xylography, photography, and the computer picture. However, it is important to realize that, even when marked out in the sand (as were Archimedes’ circles), pictures are spatially, though not temporally, organism-independent artifacts. This also applies, of course, to the writing in the desert sand imagined by Searle. Of course, no spatial record can be entirely outside of time. Drawings and writings in the sand simply have a very limited temporal life span. This still allows them to be objects of repeated acts of perception. Indeed, according to the Antique story, Archimedes, on being surrounded on the beach, told the soldiers not to disarrange his circles. To finish his accounts, he needed to perceive them again. To have the status of theoretic records, therefore, pictures simply have to be spatially organism-independent; to be available to our archaeology, however, they also must be temporally organism-independent.

Episodic memory is most clearly disembodied. It may refer to a bodily act, but it is unable to generalize this movement beyond a particular moment and place, and thus it does not give rise to any kind of independent embodiment. Mimetic memory still accumulates in the own body, but it only becomes such, to the extent that what is recorded in the body also exists elsewhere, in at least one other body, which supposes generalisation or, more exactly, typification, the creation of a type referring to different tokens instantiated in different bodies. Typification, in this sense, does not require the semiotic function, but is probably a prerequisite for it. Mythic memory (which I would prefer to call linguistic memory or perhaps, as Donald sometimes does, semantic memory) is different again: it has a separate existence, but, like some kind of real-world ectoplasm, is requires the collaborative effort of at least two consciousnesses (which no doubt have to be embodied) for this existence to be sustained. Transitory artifacts, as verbal language or (as Posner would have it) the sound of high-heeled shoes on the pavement, acquire a body only to the extent that a sender and a receiver agree roughly on what they are. Only theoretic memory has a distinct body of its own: it subsists independently of the presence of any embodied consciousness, because it is itself embodied. It
has acquired the ability to persist independently of human beings. Of course, without anybody around to perceive it, organism-independent records are not of any use. Without any human beings present, they are really worse off than the famous acorn falling from a tree without anybody around to hear its sound.

4.7. Summary

Saussure rightly emphasised the system character as well as the social nature of language, which serves to single out language from most other kinds of signs. But in the work of Saussure, and in particular in that of his followers, these two characteristics of language strangely appear to be contradictory to each other. In fact, only society can explain system character. But system cannot be generalized to all signs. And society is also at the origin of another type of signs, embodied signs, which can exist independently of human beings, but not of a common Lifeworld. If perception is the first stage of understanding, and the sign function is the second, sign systems must be considered the third, and embodied signs the fourth. From perception over signs and sign systems to embodied signs, there is ever enmeshment of relationships. Signs that are embodied may by accumulated and thus transferred in time and space. Accumulation, as Lotman said, is just as important to signs as communication. The picture, just as any other sign, may be seen as a memory device, a tool for accumulating information. As such, it is at least more complex to produce (though not necessarily to interpret) than verbal language, since, unlike oral language, but similarly to writing, it supposes the presence of organism-independent vehicles of representation. Following Merlin Donald, pictures are precursors of theory in phylogeny, and thus perhaps, as others have suggested, also in ontogeny. The model of communication, which poses an analogy between the conveyance of information and transport in space, is problematical on any account, but particularly so, in the case of pictures. Also pictures have types, distinct from their tokens. As shown by the act of imitation, which is a precursor to the sign in the mimetic stage, the separation of type and token is a condition of possibility for the sign, but is also presupposed by meaning in the wider sense. It is born as ens rationis, but survives as ens reale. This is also true of the sign, though it contains further relations. At least in the Peircean sense of resistance, sign systems and embodied signs are even more real, the latter to the point of becoming at least partly physical.
5. Final interpretant

In *Four ages of understanding*, John Deely is considering four phases in the history of human thinking. In Antiquity, there is no concept of sign, as we understand it today, neither as conceived the Augustinian nor by Poin-sot, simply because it has occurred to no one that such diverse phenomena may have something in common. The Latin Age, to the contrary, is very much preoccupied with the development of a concept of sign, which, at the end of the Latin Age, comes to comprehend all kinds of meaning, including perception. In modern philosophy, which starts out at the same time as modern (natural) science, contemporaneous with the Late Latin Age, the concept of sign tends to lose its importance. Thinking appears to be contained entirely in the mind, without relation to what it is thought about. Beginning with Peirce, the contours of the post-modern age can be divined in which the wide concept of sign comes to the fore again. In contrast, Saussurean semiology is a false start, because it regresses to something akin to the Augustinian notion of sign.

In this essay, I have projected the four ages of understanding from socio-history to phylogeny and ontogeny, suggesting that, in the child, as well as in the human species, perception is a kind of meaning given at the start, signs are acquired much later, after which follow signs systems and organism-independent artifacts. These are all relationships only given to the mind, but having different kinds of reality. In arguing for this interpretation of the ages of understanding in evolution and development, I have relied on conceptions elaborated by Piaget, Husserl, Donald, and many others. In so doing, I have apparently shifted the terrain of the debate. But only in appearance. For, if we now return to the ages of understanding, as understood in intellectual socio-history, it is clear that Post-modernity, if we should really follow Deely is using such as maltreated term, cannot be a return to the Latin Age, but much go beyond that period as well as Antiquity and Modernity. The accumulated insights of all the giants preceding us, to use a metaphor of the Latin Age, will come together to show us that there is not just one concept of sign, but multiple meanings to account for. And there will no doubt be a Fifth Age of Understanding which will have something of its own to add. The final interpretant will never arrive. But many of the dynamical interpretants are here to stay.

Notes

* Many of the ideas presented here were developped as part of the SGB project at the Faculty of Humanities at Lund University, as well as in the still ongoing European
Union project SEDSU. I wish to thank the members of these projects for stimulating discussion.

1. Cf. Peirce’s (EP 1: 6) examples (which are, strange to say, binary) of the comparison between “ground” and “correlate” (which are terms we will turn to below): p versus b, man versus woman, etc.

2. Sonesson (1989) used this is an argument (together with logical ones) against the conventionalist critique of iconicity formulated by Eco, Goodman, and others.

3. Cf. Deregowski (1972, 1973, 1976) also for the following anecdotal material.

4. Most of the experimental literature is really concerned with a third problem: our ability to discover, not that something is a picture, but what it is a picture of. Moreover, most of the experiments have been devoted to an investigation of the extent to which Non-western people are able to decode the depth cues inherent in Western linear perspective, which would seem to presuppose as the logically primary task, the study of their willingnessness to take pigment patterns on paper to represent three-dimensional objects of the world. Cf. the reviews of this literature in Deregowski 1972, 1976, 1980, 1984; Kennedy 1974; Pick and Pick 1978; Jones and Hagen 1980. In this sense, Deregowski (1984: 20) rightly distinguishes the problem of identifying the percept corresponding to an object in a picture, the epitomic ability, and the problem of recognizing depth, the eidolic ability.

5. No doubt DeLoache talks about “representation” in the sense in which the term is often used in cognitive science, but then this is precisely the problem, as we shall see later in this essay.

6. There are in fact several problems with DeLoache’s work, notably because the relation between the picture and the thing depicted in not only linguistically demonstrated beforehand (as pointed out by Callaghan and Rankin 2002), but also indexically predetermined, both because the object is pointed out (a gesture) and because it is placed in the neighborhood of the picture.

7. Unfortunately, Elkins (1996) uses this case study to argue for the post-structuralist point that “close readings” are impossible, which is trivially true, if this is taken to mean that all details can be observed using no system of relevancies at all, but is disproved, on a more reasonable interpretation, by Elkins own work, producing a “closer reading” than that of Marshack (cf. Sonesson 1996).

8. A more interesting interpretation of Peirce, however, may be that he was not really interested in the sign in our sense. We will turn to that view in the next main section.

9. It might sound here as if classical cognitive science has brought to fruition the “post-modern” view reestablishing the broad sign definition of the Latin Age, as anticipated by Deely (2001). However, representation, which is a term with a long history in philosophy and psychology taking on many different senses, is largely an undefined term in cognitive science. Deely would probably criticize cognitive science making the same reproach as he makes to Locke and the British empiricists generally, that they treat the whole domain as being that of “ideas.” In so doing, I take it, they fail to see the relational character of this domain (on which more will be said below).

10. Sonesson (1989, 1992a) certainly stands in that tradition, and, as I discovered very recently, so does Krampen (1991), who appears to be the only semioticians, apart form the present author (and to some extent, from Bentele 1984), who has taken an interest in Piaget’s notion of semiotic function.

11. Not all of Piaget’s examples of the semiotic function may really be of that kind, even applying his own criteria. Cf. Sonesson (1992).

12. Krampen (1991: 14) fails to see the problem here, perhaps because he quotes Piaget in an English translation, which renders the French term “indice” (that is, “index”) by the location “signs or pointers.”
13. This also brings Trevarthen to challenge the inclusion of imitation among the aspects of the semiotic function. As we now know, mainly due to the work of Meltzoff, there is a very early stage of more or less automatic imitation in the infant, different from the explicit capacity for imitation, which matures much later. Cf. Gallagher (2005) and Mandler (2004).

14. Piaget also insists a lot on the individual character of the symbol and the social one of the sign. Therefore, Krampen (1991: 18–19) is clearly wrong in identifying Piaget’s “symbol” with Peirce’s icon and Piaget’s “sign” with Peirce’s symbol.

15. According to some current conceptions, this would not necessarily be true in prehistory: chimpanzees and early humans appear to be unable to make use of tracks in their hunting behavior, if cognitive archaeology is to be trusted (Mithen 1996: 73). Actually, Mithen’s examples suggest that apes are able to interpret auditory signs of the hunted animals, but will not even recognize the animal itself if presented with it visually, which suggests indexicality is not involved at all in this distinction. Indeed, many animals “lower” on the evolutionary scale are obviously able to interpret traces. According to this conception, the development of “art,” i.e., picture signs, is an even later accomplishment of human prehistory (Mithen 1996: 150).


17. I am using “indexicality” here (just as “iconicity”) in the sense of something which is necessary for a sign being an index (or an icon), but which, analogously to the quotation from Peirce below, cannot function “as a sign until it is embodied.” See, in particular, Sonesson 1992a, 1993a, 1993c, 1994a, 1994b, 1998a, 2000b, 2001a, 2001b, 2003a.

18. Other pieces of valid criticism may be levelled against Piaget, as discussed in Sonesson (1992b): the point that meaning emerges ontogenetically well before the attainment of the semiotic function (as expressed notably by Trevarthen) is essential to the following argument. The observation, made experimentally by Gardner et al., that the semiotic function is not attained in different media, and in different respects, at the same age, is important, but has nothing to do with the functional definition of this stage of development.

19. And it has nothing to do with Hjelmslev’s criteria for something being a sign, the possibility of separating expression and content into smaller parts independently. See Sonesson (1992a).

20. It could be said, as I have pointed out elsewhere (Sonesson 2000b) at least about divination, that these signs became interesting not as signs of Nature, but because they were conceived as messages from some kind of Super-Subject; but this is not the essential point at present.

21. See the next section about the time characters of different kinds of signs.

22. This is the confusion that has permitted numerous structuralists to claim the presence of “double” or even “triple articulation” in many kinds of semiotic resources. Something more will be said about propositional attitude later on in this essay.

23. I have taken this description of Fodor’s aims from Bermúdez (2005) who gives other arguments, but of course not this one, against Fodor’s theory.

24. Eco (1984, 1998, 1999) gives several other arguments for this claim, which I have shown to be invalid in Sonesson (2003b, 2007).

25. None of this is said explicitly by Peirce, but it is my way of making sense of his numerous definitions. Thus, there is a metaphysical postulate here according to which the first element in a series is always simple, the second one is twofold (and not two simply elements, but one element and a relation), and the third is always threefold (two of which
are relations). Of course, each second element may be expanded into further secondary elements, and each third element can take on new third elements.

26. This is of course not the sense in which we have talked about a double asymmetry. What is symmetrical in the relation between expression and content is the fact that some modifications of the expression have consequences for the content, and vice-versa — what is known after Hjelmslev as commutation.

27. If intentionality has anything to do with “intensions” in the scholastic sense, however, it apparently pertains to “second intentions,” i.e., the things as known, while the first intentions would rather correspond to what we nowadays consider to be the extension (but the actual distinctions are really more complex, as Deely [2001: 470] points out).

28. Reed (1996) notes some parallels between Gibson and the American pragmatists (without, however, referring to Peirce!). “Constructionism” should be understood here as in perceptual psychology, in opposition to Gestalt psychology and ecological psychology, not in the sense of Piaget or Vygotsky.

29. This concept, as well as contemporary biosemiotics, will be thoroughly discussed in the next section.

30. Whether it also has something to do with the Vygotskyan concept of mediation is something that cannot be discussed here. May it just be noted in passing that the Vygotskyan concept of mediation seems to reduce to language-dependence and, perhaps in a few instances, dependence on other semiotic resources that are signs in our sense, such as pictures.

31. And so, it appears, must Searle (1992: 127) have done, when describing “a dozen structural features” (many of which we will encounter below in their Husserlean form) of consciousness, or else it must be true that it is sufficient to turn your look inwards, towards consciousness itself, in order to discover all the invariants of Husserlean phenomenology.

32. This model of time consciousness was used in theatre semiotics, and in literary semiotics, by members of the Prague school, notably by Mukarovsky.

33. A similar point is made by Gurwitsch (1979: 104) in terms of roles.

34. When latter-day constructionists such as Hoffman (1998) start formulating general laws, they do not seem to be so far from Gibson as the imagine. On the whole, however, Hoffman’s laws seem to apply to pictures, rather than the perceptual world, more like those of Kennedy (1974).

35. One may recognize, in the first two cases, Frazer’s (1993 [1922]: 11) two principles of magic, according to the laws of contact and similarity. Even more obviously, the three cases are reminiscent of indexicality, iconicity, and symbolicity (in that order).

36. In formulating his laws of ecological physics, Gibson (1982: 218) claimed that, contrary to what is often thought, children do not spontaneously believe in magic. At least some kinds of divination would clearly be contrary to these principles of ecological physics. According to Piaget, of course, children do go through a magic stage, and anthropologists apparently have found many adults believing in magic, too, even though the cases quoted in the first section of the essay concerning magical interpretations of pictures do not seem to be authentic. Still, the Lifeworld of everyday praxis, in which instrumental and other goal-related actions take place, may have to be distinguished from the ideological Lifeworld.

37. Thus, like Ames’s famous chair seen from a peephole, one possible noema of the cube may be simulated, without there being an object which gives rise to further, coherent noemata of the same object.

38. To Gibson, however, these invariants are mathematical, though not expressible in present-day mathematical language. Pending the invention of this mathematical system, however, it is difficult to make sense of this claim.
39. In this sense, the picture can never be a noema: whereas one noema will imperceptibly fade into another, the pictorial surface has clearly fixed limits. The frame, however, may interrupt lines that are easily continued in imagination.

40. This is the double sense of the notion of norm, which I have discussed in Sonesson 1996a, etc.


43. I have presented the Lebenswelt as a particular kind of Umwelt in earlier papers of mine, before realising that Deely (2001) had also made this comparison, without however entering a discussion of the import of the Husserlean notion.

44. It will be observed that we are here simply equating the triadic, or Peircean, conception of the sign with the so-called dyadic, or Saussurean, one, in accordance with the interpretation suggested in the first section of this essay.

45. This was independently noted by Søren Brier (2001).

46. Some schemes incorporate (some of) the results of their own use on ineffable objects, and are themselves changed in the process, which is what Piaget calls accommodation, and perhaps what Lotman calls “internal recoding.” Cf. Sonesson (1988: II.1.3.3).

47. My reason for saying so is that Uexküll insists that the three properties to which the tick reacts form a whole, or an experiential world, to the animal. This is the sense in which the Umwelt is a subjective concept. Cf. Brier (2001). In denying the robot an Umwelt, Emmeche (2001) also puts his emphasis on the experiential whole. Not being a biologist, I have some difficulty seeing why we have to suppose any connectedness between the features to which the tick reacts.

48. Gurvitch is right, I believe, in suggesting that this thematic structure translates to language (and no doubt also to other semiotic resources), as most clearly illustrated in the transposition of the functioning of pronouns from the perceptual world to discourse (cf. Gurvitch 1985); it is unfortunate, however, that he fails to attend to the difference in structuring occasioned by the semiotic function.

49. Differences in the structure of attention have been discussed in very different quarters already, although at a much higher level separating human beings and apes, as well as children of different ages (cf. Tomasello 1999; Tomasello et al. 2005; Zlatev 2002, 2003).

50. Searle (1995) makes a distinction, which appears to be similar, between “intension-with-an-s” and “intention-with-a-t.” The very same distinction was made in Sonesson 1978.

51. In this sense, propositional attitudes are intensional. If I think about, or even perceive, the Evening Star, this is not the same thing as thinking about, or perceiving, the Morning Star, although the Evening Star and the Morning Star happen to be the same celestial body, Venus. Although there is thus referential (extensional) identity, the two terms cannot be exchanged with meaning being preserved.

52. It may also in some ways return to the expression, or to the form of the content, which is what Jakobson calls the poetic function and Mukarovsky terms the aesthetic function.

53. Formulations like these are normally made using the expression “having the intention,” but I will avoid this expression and similar ones here, in order not to confuse intention in the sense of purpose with intentionality.

54. The problem is of course that “we intentionality” is no explanation, but a term for something which has to be explained.
55. I am certainly not out to deny the existence of a real world, which is a thesis Searle (1995) rebukes in the second part of his book. I am simply not convinced that the descriptions stemming from physics, considered as a natural science, are closer to this real world than are those of ecological physics.

56. As so often, we find picture interpretation to be taken as the prototypical case of perception.

57. As for what goes before even the ens reale, "being as first known," which Deely (2001: 355) likens to William James' "blooming buzzing confusion," it could just as well be identified with Saussure's and Hjelmslev's "amorphous mass" which forms the basis for the structural divisions. According to phenomenologists inspired in Gestalt psychology, such as Gurwitsch (1964), as well as more recent psychologists involved with child development, such as Mandler (2004), this is not something that can actually be experienced.

58. Another disadvantage of Searle's criterion is that if what defines signs is that their function cannot be seen "from the physics," then there would be no iconic signs.

59. In fact, Jakobson's position as far as the different sciences goes is much less clear-cut than I suggest here; cf. the passages referred to above. Rossi-Landi (1983: 73) actually claims economics is a part of semiotics.

60. This would correspond to the notion of meaning as relevance discussed in the section above.

61. In the sense of the semiotics of culture, as understood by the Tartu school. Cf. further on the discussion of Ego, Alter, and Alius. This may be to suppose too much heterogeneity between tribes that exchange women; it applies much more properly to women or men marrying into another society at the present time.

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

63. A sign system having only one sign, as Prieto (1966: 43) argued, would be for instance be 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.

64. 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.

65. Perhaps there is some justification for Deacon's view, for after all there is a famous quotation from Peirce, according to which "symbols grow" — which would seem to exclude icons and indices from similar regeneration.

66. In fact, perhaps only paradigms are required. At least on the level of complete units, traffic signs do not allow for any (or only a few) combinations, although they certainly offer a series of choices (cf. Posner 1989; Sonesson 1998c).


68. They can, however, be preserved as the capacity for reproducing them, that is, as the sequences of repeatable actions, which is an instance of Donald's mimetic memory (for which see below).
69. In a similar way, Metz (1990) has claimed that a photograph, but not a film, could become a fetishist object, in the Freudian sense, precisely because the former has more of a material character. All cases considered by Innes are of course enduring artifacts, as is the photograph (while the case of the film is more complex); it is only that their capacities for accumulation and communication respectively are more or less emphasised.

70. Piaget sometimes makes a distinction between the scheme and the schema, which we will ignore here.

71. However, he seems unaware of the fact that a long tradition concerned with such an "art of memory" was prominent all through the Middle Ages and the Renaissance; cf. Yates (1966); Gomez de Liano (1982).

72. In a less precise way, the term "scheme" is also employed by the art historian Gombrich (1960), when considering the historical development of styles, and by the philosopher Goodman (1968), in a discussion of the origin of metaphors.

73. Indeed, it was only recently that Clayton and Dickinson (1998) showed that western scrub-jays remember where they cached different food types and discriminatingly recovered them, depending on the perishability of the item and the amount of time that elapsed since caching, which seems to suggest they are able to remember the "what-where-and-when" of specific caching events in the past.

74. Searle actually talks about the "imposition of functions" in a sense that seems considerably wider than our sign function. Prieto suggested signs were special instances of tool use, and Eco reduced tool use to the general case of meaning relationships. As I have argued elsewhere (Sonesson 1989a: 133), I think both these theories are unfounded, though signs and tools have in common being defined by something outside of themselves, that is, they are allo-functional.

75. Such as having syntagms and paradigms, in Hjelmslev’s sense, transferred by Barthes to things like clothing and menus.

76. Zlatev (in press a) defines "mimetic schemas" as "categories of acts of overt or covert bodily mimesis." This seems to be compatible with my characterization of schemes, in particular as the mimetic schemas are said to be not necessary conscious but accessible to consciousness.

77. This terminology is not Peircean, but derives from studies of child development. I believe there is an interesting analogy to be made, but I have no place to develop it here.

78. The notion of "symbol," as the term is used by Piaget, also seems to confuse these both senses of differentiation, as we have noted above.

References


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Sonesson, Göran. 1993c. The multiple bodies of man: Project for a semiotics of the body. *Degré* 74, d–d42.


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