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Semiosis and the elusive final interpretant of understanding*

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12 *Abstract*

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

27
28 *Keywords:* *sign; intentionality; picture; Umwelt; phenomenology; ecolog-*
29 *ical psychology.*

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

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1 **1. Preamble**

2
3 Though this was no doubt not the intention of the thinkers of the Latin
4 Age, nor of Peirce, the term “doctrine” today suggests a finished body of
5 knowledge with no opening into the future. But, as all semiosis, the brand
6 that studies semiosis is undoubtedly a continuous enterprise. In an old
7 book of mine (Sonesson 1989: I.1.), I proposed to conceive of semiotics
8 as a series of entangled strands of problem areas making up a continuous
9 discussion extending through the ages, which could only be grasped *a pos-*
10 *teriori* by taking a retrospective view of (some restricted part of) this
11 mesh, thus permitting semiotics to be defined and thus applied to new
12 areas and issues. In this sense, semiotics is a tradition, as this is conceived
13 by philosophical hermeneutics (as all sciences are), within which the
14 scholar first must be situated before he can undertake to rework it and
15 extend it. It seems to me, that, in many of his books, and of course most
16 explicitly in *Four ages of understanding*, John Deely has positioned him-
17 self in this way within the tradition of the Latin Age, reinitiating a dia-
18 logue that had come to a standstill almost half a millennium ago. He is
19 not only in the business of telling us what thinkers such as Augustine,
20 Aquinas, Fonseca, Poinsot, and many others had to say about signs and
21 meanings, but he is offering up their contribution for new discussion and
22 elaboration. In so doing, Deely makes an immense contribution to con-
23 temporary semiotics.

24 The whole of this essay will show how much I had learned from Deely.
25 And yet, if this were all, I would have nothing to add and should have to
26 remain silent. However, if Deely certainly fills in a blank in the official
27 history of philosophy, in particular that strand that leads on to semiotics,
28 it seems to me that his version of the story contains other gaps, the filling
29 in of which is of equal importance to semiotics. Most obviously, it is
30 rather difficult to accede to the version according to which the Modern
31 Age, which (as Deely himself emphasizes) creates the (natural) sciences,
32 is merely a “dark age” of philosophy (outside of what was then “natural
33 philosophy”). Moreover, while Deely is no doubt right, in a literal sense,
34 in claiming that the final chapter of Locke’s *Essay* did not beget any fol-
35 lowers, it remains true that Condillac and his disciples in the “ideological
36 school,” who started out talking about “ideas,” as Locke does in the rest
37 of his book, later on came to conceive the same issues more in terms of
38 signs, to the point where a late ideologue such as Degérando entitles his
39 most important book, much in the manner of Poinsot, “On signs.” It is
40 also difficult to accept that, between the Latin Age and the Postmodernity
41 initiated by Peirce (as Deely defines it) and after the failed attempts of the
42 early Moderns, nothing of value happens in philosophy. I do share some

1 part of the disappointment with “modern philosophy” voiced by Deely,
2 in particular with the more recent varieties of it, such as neo-positivism
3 and neo-pragmatism, but I would like to single out another big hollow
4 in the official philosophical tradition, at least as it is taught in Northern
5 Europe, which is not filled in by Deely, one that should be occupied by
6 Husserlean phenomenology, as it was continued by such thinkers and
7 Gurwitsch, Schütz, and Ricœur, and which in many ways is parallel to
8 the Peircean conception (as no less a Peirce specialist than Savan has
9 admitted), and also serves to complement it (and certainly more than
10 Heidegger does). Later on, in this essay, I will endeavor to demonstrate
11 the accuracy of this claim.

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

29 Not only do I think that scientific endeavors must also be a part of the
30 semiotic tradition that we have to rework, but I also believe that scientific
31 questions, such as those involving the evolution and development of dif-
32 ferent semiotic resources, must be at the forefront of our inquiries. While
33 we should not let ourselves be spellbound by science to the point of aban-
34 doning the tradition of semiotic theory, I do think we have to take into
35 account the theories as well as the problems handed down to us by pro-
36 ponents of the social and human sciences. This is why, contrary to Deely
37 and some of the thinkers of the Latin Age, I believe we have to distin-
38 guish meanings and signs. Only in this way can we account for the simi-
39 larities and differences in the ways in which different meanings mean. Of
40 course, this claim is pointless, as long as the notions of sign and meaning
41 have not been defined. Yet, numerous semioticians (from Eco to Grei-
42 mas) have rejected the notion of sign without even asking the question

1 what it is, just as, within cognitive science, latter day proponents now re-
 2 ject the notion of representation.

3 Whatever the reason Fonseca and/or his predecessors may have had
 4 (as recounted by Deely 2001: 391) for distinguishing signs properly speak-
 5 ing and signs in a broader sense, there is nothing intrinsically nominalist
 6 in making such a distinction. Being myself an *ancient combattant* in the
 7 battle over nominalism (as in my critique of Goodman, essential to my
 8 whole critique of the iconicity critique; cf. Sonesson 1989, 1995), I would
 9 certainly not condone such a stratagem. To me, this distinction simply is
 10 necessary for taking account of both the similarities and the differences
 11 between signs and meanings. Perhaps, then, we should use “sign” for the
 12 general concept, as Peirce and Deely would seem to argue, and pick some
 13 other term for the more particular concept. However, it seems to me that
 14 if we apply Peirce’s rules for the ethics of terminology, according to which
 15 we should not change already established terminology, the term “sign”
 16 would now have to be used in the more restricted sense, just as it would
 17 shortly after Augustine wrote about it, and contrary to what was true at
 18 the end of the Latin Age. Of course, I am not thinking here so much
 19 about the first rule which condemn the use of arbitrary terms, nor of
 20 course about the prescription to follow scholastic usage if possible (and
 21 the whole of Deely 2001 shows that there is more the one usage within
 22 scholastics itself), but on the recommendation not to use terms which
 23 “interfere with any existing term” (cf. *EP* 2: 263–266; Deely 2001: 662).

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

40 However, if a structure only consists of negative terms, as Saussure
 41 once claimed, then structuralism will be tantamount to nominalism. In
 42 an early work, his 1942 lectures at the New School of Social Research in

1 New York, Jakobson (1976) observed that Saussure's description could
2 only apply to phonemes, and certainly not to words (an insight that con-
3 trasts sharply with his own later work, notably his acceptance of Lévi-
4 Strauss' self-understanding; cf. Sonesson 1989). If everything is a sign,
5 or an idea, or a representation, this is different to the extent that these
6 terms have to be differently defined. The trouble is, most of those who
7 have based their theories on these terms seem to take their meaning for
8 granted, and what they take for granted is often very different in each
9 case. As Deely shows us, some of the thinkers of the Latin Age did give
10 fairly clear characterizations of the notion of sign. At least the narrow
11 concept of sign, which will be used here, can be further spelled out by
12 attending to what thinkers such as Husserl and Piaget have had to say.

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

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

34

35

36 **2. The emergence of pictures and other semiotic resources within the** 37 **ages of understanding**

38

39 The different ages of understanding, as envisaged by Deely, take place
40 within the small span of world history starting out in Greek Antiquity,
41 which is commonly known by the human race simply as History. At least
42 explicitly, the passages from one type of understanding to another only

1 involve a very small part of this history, culture or, more precisely, meta-
2 culture, the thinking about (the nature of) culture. In any case, it is part
3 of what Vygotsky has termed socio-history. But socio-history is only one
4 of the perspectives one may take on history, in the broad sense. There is
5 also development, or the changes gone through by any infant on the way
6 of becoming adult, and evolution, the modifications allowing the emer-
7 gence of (say) human beings out of other animals.

8 Child development was described by Piaget, more explicitly than by
9 Vygotsky, in terms of different “ages of understanding.” On Piaget’s ac-
10 count, the child goes through a number of different stages, enhancing its
11 capacity for understanding. Of particular importance in the present con-
12 text, however, is Piaget’s claim that, on the border between sensorimotor
13 thinking and concrete operations, around eighteen months of age, the
14 child learns to master the semiotic function, which involves not only
15 language, but also, notably, drawing and symbolic play. Piaget does not
16 deny that the child experiences meaning before this age, but only with the
17 attainment of the semiotic function can it conceive meaning as something
18 differentiated into a signifier and a signified. Taking a cue from Husser-
19 lean phenomenology, I will add that a double asymmetry must exist be-
20 tween the entities entering into the semiotic function.

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

34 It will be argued in the following that at least some meanings, such as
35 words, pictures, and (some) gestures, are signs in a specific sense, in which
36 this is not true, for instance, about percepts in general, nor about specific
37 types of percepts, such as animal camouflage, clothing, body parts, (every-
38 day) behavior, the order in which courses are served in different cultures
39 (menus), spatial distances such as those studied in proxemics, cultures in
40 relation to other cultures such as these are studied in semiotics of culture,
41 the “functional cycle” as displayed by animals and other organism and
42 conceived in biosemiotics, and so on. Gesture, language, and pictures

1 appear to be specifically human (excepting some highly enculturated
2 apes): they emerge rather late in ontogeny as well as phylogeny.

3 All this suggests that there is also continuity between meanings and
4 signs. The story told by John Deely helps us pinpoint this continuity.
5 But first we must demonstrate the difference.

6

7

8

9 2.1. *The picture beyond difference and identity*

10

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

25 James Gibson (1971, 1980) has claimed that, while all animals perceive
26 surfaces, only humans are able to see surfaces as having reference. In
27 other words, pictures have “referential meaning”; they contain invariants
28 for surfaces but also for the objects referred to. Gibson thus appears to
29 have a somewhat implicit concept of the picture as being a sign. Julian
30 Hochberg showed that a child nineteen months old who had never seen
31 a picture could readily interpret it, whether it was an outline drawing or
32 a photograph, if he/she were familiar with the objects depicted (Hoch-
33 berg and Brooks 1962).² But Hochberg did not investigate whether the
34 child saw the picture *as a picture* or as an instance of the category of the
35 depicted object — a picture of a bird as a bird, etc. For the picture to be a
36 sign, both similarity and difference have to be involved.

37 Commenting on this experiment in a later text, Hochberg (1972: 70–
38 71) himself observes that there either must be an innate capacity for inter-
39 preting pictures, or that such an ability must develop at an early stage,
40 and then not from pictorial experience itself, but from the ordinary expe-
41 rience of the world. This result, and Hochberg’s conclusions, are remark-
42 able. To begin with the former, it is obviously incompatible with any

1 theory, such as that of Goodman or Eco, according to which a picture
2 acquires its meaning simply by being “appointed” to be the sign of an
3 object (as noted in Hochberg 1978b: 235). What is interesting about
4 Hochberg’s conclusions is that the most “obvious” alternative is not
5 even considered, i.e., that no interpretative capacity at all would be
6 needed, because the object and its picture are simply “similar.” But of
7 course this is no serious alternative since there is no similarity between
8 the picture and its object, except from the point of view of a very super-
9 ficial phenomenology. If lines on paper are taken as equivalent to the
10 edges of the object, Hochberg (1978b: 236) notes elsewhere, this is a fact
11 about the viewer, not about the light at the eye.

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

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

39 There are two difficulties at issue here: the difficulties of relating the
40 picture to its object and that of distinguishing the two. Sometimes, it
41 seems, the problems consists of finding out that *the picture is not identical*
42 to what it shows. The moment after having taken to flight at the sight of

1 the pictured elephant, the members of the tribe visited by the explorer
2 Lloyd discovered their mistake and returned laughingly to the front of
3 the screen. Of course, the difference between the elephant and its picture
4 was neither unimportant nor obvious to them; but in a moment of poten-
5 tial threat, they were certainly wise to react on insufficient evidence. Since
6 perception seems to start relatively high up on the ladder of abstraction
7 (as showed a long time ago by German *Ganzheitspsychologie*, cf. Sander
8 and Volkelt 1962, and more recently by Mandler 2004), it is indeed prob-
9 able that, in a moment of stress, only very gross similarities will be noted,
10 even those that are not ordinarily category-defining. The other story,
11 where photographs of white women are treated as real people, is rather
12 implausible; if not some magical equivalence is meant, then perhaps this
13 behavior must be understood as a kind of social deference to the white
14 men who showed the pictures. Again, more research would be needed to
15 go beyond these anecdotes.

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

36 The Ancient Greek painter Zeuxis is famous for having depicted a
37 bunch of grapes in so illusory a manner that even the birds were fooled.
38 Commenting on Pliny's well-known story, Gombrich (1963: 5-6) claims
39 this was no great feat of Zeuxis' since, as ethology has shown, animals
40 react to very gross similarities. However, the pigeons studied by Cabe
41 (1980) would apparently not follow suit as the other birds launch their at-
42 tack on Zeuxis' grapes. Most experiments purporting to demonstrate the

1 ability of some animal species to interpret pictures have neglected to investigate whether the animals are also able to tell the difference between
2 the picture and its object; but Cabe (1980: 335), who makes this observation,
3 tells us he has taken pains to ascertain that the pigeons of his experiments
4 possess the later capacity (1980: 313–314). If his is correct in his interpretation,
5 the pigeons are aware of both a similarity and a difference.
6 Indeed, at least the capacity for perceiving the similarity is taken for granted
7 in a number of experiments where perception in pigeons (and some monkeys and apes)
8 is studied by means of exposure to pictures (cf. Fagot 2000). However, none of these
9 articles taken into account the difference between the picture and the depicted object.
10

11
12 More recent experiments have shown that even children five months of age
13 look longer at a doll than at its picture (DeLoache and Burns 1994). However,
14 it does not follow, I believe, that the children see the picture as a picture.
15 Indeed, nine-month olds, but not eighteen-month olds, try to grasp the object
16 depicted as if it were a real object (DeLoache 2004); whatever the difference they
17 perceive, then, it does not seem to involve signs as opposed to objects. It seems
18 to me that, just as in the case of the pigeons, this may simply show that the
19 picture and its object are seen as being different, but not necessarily as constituting
20 a sign-vehicle and its referent. The real doll is perhaps seen as a more prototypical
21 instance of the category of dolls; or, alternatively, the real object may be more
22 interesting because of having more perceptual predicates.
23

24 Just any similarity and difference it not enough to make a picture sign, however.
25 That paper is the kind of stuff of which signs, and in particular pictorial signs,
26 are made, was not obvious to Herskovits' puzzled woman; and to the Me', this
27 material was so interesting in itself that it absorbed all interest; coarse cloth,
28 however, was easier to conceive in this humble part, though even now, time was
29 needed to discover what was depicted, perhaps because the sign function itself
30 had to be discovered. If we suppose the Hochbergian child to understand, not
31 only that given pigment patterns on paper have something to do with the shoe,
32 the doll, and the Volkswagen of the real world, but also that the former are
33 signs for the latter, and not the reverse, then it will not be enough for the
34 child to have learnt from his experience with objects of the world that the edges
35 of objects have properties which are shared by contours drawn on paper, or
36 to be innately predisposed to react to these common properties (cf. Hochberg
37 1978a: 136). He must also have acquired, probably from experience in his
38 particular Occidental Lifeworld, some notion of the relative low ranking on the
39 scale of prototypical Lifeworld things of a material like paper, which directs
40 his attention, not to what the pigment patterns on the paper are as "selves,"
41 but to what they stand for (cf. Sonesson
42

1 1989; 1992a; 1993a; 1996a; 2000a, 2001a, forthcoming). And perhaps he
2 must also possess some idea of a meaningful organization, which relieves
3 him from the task of finding a meaning in inkblots, in the dirt on the
4 road, in the stains he makes with his dinner on the tablecloth and in the
5 clouds.

6 Familiarities with paper or cloth are facts of particular cultures. Paper,
7 which is too prominent to the Me' to serve as a sign-vehicle, traditionally
8 carries this function in Western culture. But Sonesson (1989) suggested
9 that there would probably also be *universals* of prominence: thus, for in-
10 stance, two-dimensional objects are felt to be less prominent than three-
11 dimensional ones and may thus more readily serve as expressions. In this
12 sense, it is not true that the object is its own best icon, as is ordinarily
13 claimed — at least if iconic means iconic sign. Indeed, iconicity stands in
14 the way of the sign function. The objects of the common sense world
15 are three-dimensional: much less is required for a two-dimensional ob-
16 ject to be able to represent one of these objects than for another three-
17 dimensional object to do so (cf. Sonesson 1989, 1992a; 1993a; 1996a;
18 2000a, 2001a, forthcoming). This is precisely what is suggested by De-
19 Loache's more recent experiments with children: not only is the picture
20 understood later than language in these experiments, around two-and-a-
21 half years (DeLoache and Burns 1994, etc.), but scale models are under-
22 stood even later, at three years of age, half a year after pictures (De-
23 Loache 2000). As noted also by DeLoache, this contradicts what is
24 expected by common sense. But it is reasonable, if the issue is separating
25 the sign and its referent.

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

36 In all DeLoache's experiments, the task is, in one way or other, to find
37 a hidden object by using information contained in a picture or a scale
38 model. According to the standard procedure, the experimenter and the
39 child are at first outside the room in which the child is to search for the
40 toy. The child cannot see the picture or scale model and the room at
41 the same time. The experimenter tells the child that she will hide the
42 toy in the room and then come back and ask the child to search for it.

1 She returns to the child and points out the appropriate location in the
2 picture/scale model telling it “This is where Snoopy is hiding in his
3 room. Can you find him?” If the subject fails in the first search it is once
4 more shown the picture and given more explicit prompts. Twenty-four
5 month olds do not pass the retrieval test, but thirty-month olds do; there
6 is no difference in performance using photographs or line drawings. How-
7 ever, when the whole procedure is conducted verbally, children pass the
8 test already before twenty-four months old; and when a scale model is
9 used, only thirty-six month olds pass it.⁶

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

23 If understanding pictures is as difficult for children as DeLoache sug-
24 gests, then we should not expect animals to be able to do so. I have al-
25 ready proposed some alternative explanations for the behavior of Cave’s
26 pigeons. On the other hand, primatologists, as mentioned at the begin-
27 ning of this essay, tend to take for granted that the apes to which they
28 are trying to teach language already understand pictures. There are only
29 a few regular investigations of apes looking at pictures and scale models.
30 Itakura (1994) reports that enculturated chimpanzees can interpret line
31 drawings; Kuhlmeier and colleagues (Kuhlmeier, Boysen, and Mukobi
32 1999; Kuhlmeier and Boysen 2001, 2002) have even shown their chim-
33 panzees to understand scale models. It is difficult to know what to make
34 of these results, already because these apes are all enculturated, which is
35 to say that they are trained in many of the semiotic resources that in or-
36 dinary circumstances are peculiar to the human Lifeworld. Moreover, it
37 should be noted that, while the children were introduced to a model of a
38 room that they had never seen before the training-phase, the apes were
39 confronted with a model of their own familiar environment. In addition,
40 a lot of facts about the subjects and the experimental procedure are not
41 clear from the articles. At present, it would therefore be premature to
42 draw any conclusions about the abilities of the great apes in this domain.

1 It is clear, however, that, in order to understand the peculiarity of the
2 picture, we need a concept of sign that can account for the difference and
3 similarity between perception and pictures, on the one hand, and of pic-
4 tures and scale models on the other.

5 Archaeology should ideally be able to tell us something about the ori-
6 gin of pictures in the prehistory of human beings. However, those arti-
7 facts that clearly *are* pictures, such as the well-known Ice Age rock carv-
8 ings, are products of a very recent prehistory indeed, and this even holds
9 true, in view of the length of prehistory, of those artifacts that, perhaps
10 less convincingly, are claimed by some archaeologists to be pictures or
11 other kinds of man-made artifacts, such as, notably, sculptures and calen-
12 dars (such as the Berekhat Ram figure and Marshack's putative calendar;
13 cf. Bahn 1998; White 2000; Elkins 1996, 1997). No matter how early such
14 artifacts are in the end shown to be, however, there is no way of establish-
15 ing that no pictures existed before them. The first drawings may not have
16 been made on rocks, but perhaps on sand, on clothing, or on human skin,
17 and on other highly perishable materials.

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

28 Indeed, Marshack uses a microscope to detail the sequences of differ-
29 ently disposed strokes that are found on the Bâton from Le Placard,
30 Charente, arguing (as quoted by Elkins 1996: 189; 1997: 60) that the
31 strokes must have been purposefully made, since the sequence of figures
32 appears odd, deviating from a near-regularity, and thus, he supposes,
33 they cannot be purely ornamental, but must be some kind of notation
34 representing a lunar calendar. If there is some justification for this claim,
35 it can never come from the scrupulous observation by means of a micro-
36 scope realized by Marshack, contrary to what the latter claims, but must
37 stem from the comparison of the configuration of the strokes on the bone
38 with another system of organization, independently known to us, the
39 sequences of lunar phases. If such a correlation between the inscription
40 on the bone and the lunar system is successfully made, there is every rea-
41 son to suppose the inscription to be purposefully created (cf. Sonesson
42 1996b). The problem, however, is that the only reason for taking the

1 scheme of interpretation corresponding to the lunar phases to be known
2 to man during the Upper Palaeolithic is the very success of this correla-
3 tion. Two, otherwise unjustified suppositions thus rely on each other for
4 their substantiation.

5 There are actually two problems here: one is that Marshack claims to
6 observe something without the aid of any scheme of interpretation; the
7 other is that the scheme he eventually introduces does not account for
8 his putative observations. In fact, in spite of his microscope, as Elkins
9 (1996) has shown, Marshack has failed to observe numerous details of
10 the configuration appearing on the bone, which makes it less probable
11 that a correlation may be made to the lunar calendar, and thus that the
12 inscriptions are intentional.⁷ It is of course possible that Marshack's lunar
13 calendar is identical to the principle of pertinence used by prehistoric
14 man, however implausible that may seem from his observations. From
15 the point of view of pictorial semiotics, von Däniken's (1973) claim that
16 certain pre-technological images show wristwatches seems at least as well
17 substantiated as Marshack's lunar scheme (Sonesson 1994a).

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

35

36

37 2.2. *The sign within the two classical traditions of semiotics*

38

39 In semiotics, it often seems as the only game in town consists in showing
40 that the concept of sign needed is provided by Peirce but not Saussure, or
41 perhaps sometimes the reverse. For those who want to go on playing this
42 game, what follows will be doubly disappointing: not only will I claim

1 that the conceptions of Saussure and Peirce are not as different as they
2 may seem; but I will also submit than neither of them, on their own, is
3 able to resolve our problem. It remains true of both the main traditions
4 of semiotics, the Saussurean and the Peircean one, that, if we suppose
5 they aim at accounting for the sign, considered as a new “age of under-
6 standing” in phylogeny as well as ontogeny, they have never really of-
7 fered any definition of it; and the same thing no doubt applies to the
8 notion of representation in cognitive science.⁸ This goes a long way to
9 explaining why many semioticians (such as Greimas, Eco, etc.) have re-
10 jected the sign, without much of an argument, and why the second gener-
11 ation of adepts to cognitive science (such as Lakoff, Johnson, etc.) now
12 seems to be doing the very same thing with respect to the notion of repre-
13 sentation. There might however be good reasons for retaining the notion
14 of sign (or representation) for some kinds of meanings, while denying its
15 application to other instances. So before we even ask ourselves whether
16 there truly is such a thing as the sign, we have to be clear about what it
17 is. This involves not only deciding the criteria for analyzing a phenome-
18 non of meaning into separate parts, but also those allowing us to posit
19 an asymmetrical relation between these parts: not only does the expres-
20 sion have to be separate from the content, but the former should stand
21 for the latter, not the reverse.

22 It should be clear by now why we need such a concept of sign: the pic-
23 ture has been shown to be something difficult to grasp, both to small chil-
24 dren and to non-human animals, because it supposes the consciousness
25 of a difference as well as of a similarity. Perception and other direct acts
26 of consciousness are not difficult in this way: they appear to be fairly
27 straightforward to children and animals alike, rather early on in the de-
28 velopment of the former. This also applies to some unconscious or semi-
29 conscious conclusions drawn from perceptual premises, as we shall see. In
30 the concept of representation of classical artificial intelligence, as well as
31 of a lot of contemporary cognitive science, simple acts of perception and
32 sign consciousness are inextricably confused. Although Saussure’s con-
33 cept of sign was no doubt unambiguously restricted to meaningful entities
34 comprising two relata that were clearly differentiated from each other and
35 related by an asymmetrical relation, French structuralists such as Barthes
36 and Greimas later on apply semiotical terms to objects of meaning
37 that could hardly be conceived to fulfill these requirements, such as
38 food, clothing, and the world of perception (cf. Sonesson 1989). As John
39 Deely (2001) has shown, philosophy written in Latin during the Middle
40 Ages and in the following centuries long hesitated between a restricted
41 definition of the sign, derived from the works of the church father Augus-
42 tine, and a much broader one, according to which the contents of

1 consciousness should be considered signifiers for which the things of the
2 perceptual world were the signifieds, finally opting for the latter solution
3 in the work of Jean Poinsot in the early seventeenth century. Deely thinks
4 the dissolution of this all-embracing concept of sign was a serious failing
5 of early Modern philosophy.⁹ My view, however, is that this conceptual
6 tightening of the sign concept is a clear gain coming out of latter-day phi-
7 losophy, although it must be regretted that the reasons for narrowing
8 down the sign concept were never clearly brought out. This should in no
9 way be construed as a nominalist stance, as it might have appeared dur-
10 ing the Latin Age, as Deely shows (cf. Sonesson 1989, 1995). On the con-
11 trary, it is precisely because signs and percepts are so different, although
12 they also have something in common, that they must be terminologically
13 separated.

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

37 There are several ways to read Peirce and, conceivably, Saussure: one,
38 very common one, consists in looking upon these writings as a devout
39 Christian approaches the Bible, as the source of all truth, even that dis-
40 covered since the time of writing, using some often very subtle operations
41 of interpretations to extract it. A procedure similar to this one may actu-
42 ally be justified, if the aim is not to develop an adequate semiotic theory,

1 but simply to establish what the teachings of the founding fathers really
2 were. Another approach, which is not the one I am going to preconize ei-
3 ther, is, of course, to read Peirce and Saussure as that rival potentate, the
4 Devil, is supposed to read the Bible, by inverting the meaning of every
5 line: this may at first appear to be a purely fictional possibility, but I do
6 think a procedure very much like it was applied by the French structural-
7 ists as well as Eco in the sixties and the seventies of the last century, less
8 perhaps to Saussure and Peirce, but more to one of the most eminent fol-
9 lowers of the first, Hjelmslev (cf. Sonesson 1989).

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

34 It should be clear, then, that we cannot be interested here in discover-
35 ing "what Peirce really said"; rather we will be making use of his con-
36 cepts to the extent that they fit with what has since then been established
37 by semiotical reasoning and psychological findings, and we will criticize
38 and revise them accordingly. On the other hand, there can be no doubt
39 about Peirce being a very profound thinker (though perhaps not in every
40 paragraph he wrote), so I really think we should try to do him full justice.
41 When there are several possible interpretations of his works, and when
42 different passages contradict each other, we should choose the one most

1 favorable to him — from the point of view of present-day semiotics. Al-
2 though I love Peirce very much, I love truth even more: so while some
3 things I say in the following may be false as interpretations of Peirce, I
4 still think they are valid as components of contemporary semiotic theory.

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

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

30 On the other hand, there is certainly no denying that the Peircean sign
31 is triadic, but these triads are then subdivided, where that which is of the
32 nature of Secondness has two parts, and that which is of the nature of
33 Thirdness has three parts. If all these distinctions are criterial, Peirce's
34 definition actually has six levels. If the triadity of the Peircean sign really
35 had involved something like the expression, the content, and the real
36 world (as many have been fooled by Ogden and Richards to think), then
37 it would have been present also in the Saussurean conception, the third
38 item appearing as that which is explicitly excluded from consideration
39 (and which is then reintroduced by most post-Saussureans). It rather
40 seems as if the distinction between the content and the referent were mim-
41 icked in Peirce's work by that between the immediate and the dynamical
42 objects, so when we add the interpretant, we end up with four objects.

1 However, just as there are two objects, there are three interpretants (but
2 only one representamen), so there are really six instances of the sign alto-
3 gether. Using another kind of reasoning, one may instead add the utterer
4 and the interpreter, and then end up with a pentagram (cf. Dines Johan-
5 sen 1993). Indeed, some unpublished passages in Peirce's manuscripts (for
6 instance, *MS 318*, quoted in Jappy 2000) seem to suggest that the object
7 is simply the content as conceived by the addresser, and the interpretant
8 is the same content as it appears to the addressee (cf. discussion in Sones-
9 son 2003a). If object and interpretant correspond to something akin to
10 speaker's meaning versus listener's meaning, then the communication
11 models (notably that of the Prague school) also account for it. If the in-
12 terpretant has something to do with the notion of "ground" appearing in
13 Peirce's early texts, then it figures prominently in the Saussurean tradition
14 in the form of the distinction between form and substance, mentioned be-
15 low. This last interpretation is favored, in my view, by Peirce's (*EP 2*:
16 269) contention that "Thirdness [e.g., interpretants] is found whenever
17 one thing brings about a Secondness between two things [e.g., the relation
18 between representamen and object]."

19 For our purpose then, we will say that the Saussurean sign is made up
20 of expression and content (signifiant/signifié), which both can be sepa-
21 rated into form and substance — and it is separated from reality (the refer-
22 ent). "Form" here is that part of the expression that cannot be changed
23 without giving rise to another content, and vice-versa; "substance" is all
24 the rest. The Peircean sign consists of expression (representamen), content
25 for the initiator of the sign (object) and content for the target of the sign
26 (interpretant). The sign "tends" towards reality. This is why the "dynam-
27 ical object" is closer to reality (and further from the original sign situa-
28 tion) than the "immediate object"; similarly, the "dynamical interpre-
29 tant" is closer to reality (and further from the original sign situation)
30 than the "immediate interpretant"; but even further from the sign situa-
31 tion is the "final interpretant" which is only virtually present. Perhaps it
32 would be more correct to say that the object is that which influences the
33 creator of the sign so as to create it, while the interpretant is that which
34 influences the receiver so as to interpret it. Then the different kinds of ob-
35 jects and interpretants would be phases of this process.

36 There are no doubt some real differences between Saussure and Peirce,
37 however. Saussure is really only interested in the linguistic sign whereas
38 Peirce wants to characterize all possible signs. Peirce sometimes seems to
39 extend the sign so far that it covers everything. Peirce's concepts can only
40 with difficulty be separated from a specific philosophical conception of re-
41 ality. Peirce's model seems to be more involved with the contact between
42 the sign and reality, while Saussure is concerned with their difference.

1 But they have one thing in common: none of them really tells us what a
 2 sign is. It often seems as if anything that has three (or two) parts would
 3 thereby be a sign. It is true that this is a problem less with the Saussurean
 4 than with the Peircean conception, since Saussure is adamant about pos-
 5 ing verbal signs as the best instance of the category. But everything obvi-
 6 ously hinges on what kind of relationship there is between these two or
 7 three parts. This is no doubt implicit in terms such as “expression” and
 8 “content.” But if the concept of sign should be of any use, that which is
 9 implicit has to be spelled out.

10

11

12 2.3. *From pebbles to feathers: The notion of differentiation*

13

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

26

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

41

42 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

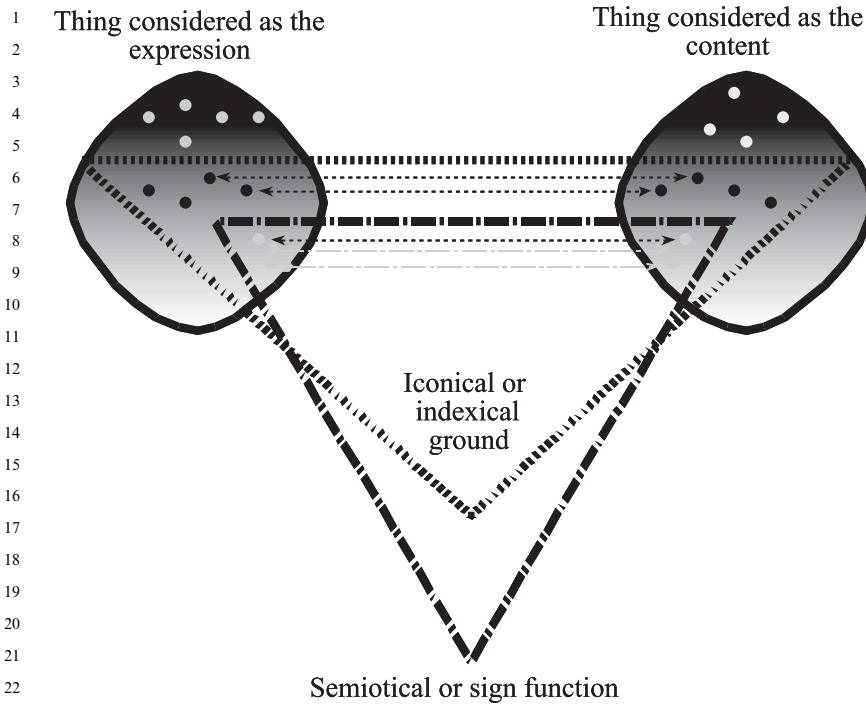


Figure 1. The sign as a mapping between different spaces, based on different principles of relevance, iconical and/or indexical ground and the sign function. The points are properties of the two things thus put into relation. The arrows are mappings between such properties.

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

1 signified. Indeed, Piaget argues that the child's experience of meaning an-
2 tedates the semiotic function, but that it does not then suppose a differen-
3 tiation of signifier and signified in the sign (see Piaget 1967 [1945], 1967a,
4 1970).¹¹ The notion of differentiation, which is normally overlooked, is
5 fundamental in my view. In fact, Vygotsky (1962) also observes the differ-
6 ence between differentiated signs and other meanings, but he lacks the ter-
7 minology for capturing the distinction.

8 In several of the passages in which he makes use of this notion of semi-
9 otic function, Piaget goes on to point out that "indices" and "signals" are
10 possible long before the age of eighteen months, but only because they do
11 not suppose any differentiation between expression and content.¹² In this
12 way, Piaget really anticipates the critique formulated by Colwyn Tre-
13 varthen (see Trevarthen and Logotheti 1989), according to which the
14 child is attuned to meaning, not only from birth, but in fact already at
15 the end of the foetal stage: cooperation, and the capacity to pick up
16 others' meanings, is somehow built into the organism. Clearly, meaning
17 is here used in a more general sense than that characteristic of the semi-
18 otic function, that is, the sign, as I have tried to develop this notion taking
19 my hints from Piaget and Husserl: it includes perception, particularly of
20 an interpersonal kind.¹³

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

27 The signifier of the index, Piaget says, is "an objective aspect of the sig-
28 nified"; thus, for instance, the visible extremity of an object that is almost
29 entirely hidden from view is the signifier of the entire object for the baby,
30 just as the tracks in the snow stand for the prey to the hunter. But when
31 the child uses a pebble to signify candy, he is well aware of the difference
32 between them, which implies, as Piaget tells us, "a differentiation, from
33 the subject's own point of view, between the signifier and the signified."
34 Between "indices and signals," on the one hand, and full signs, on the
35 other, moreover, Piaget places "symbols," understood more or less along
36 the lines of Saussure. These "symbols" are already differentiated, Piaget
37 claims, but their parts are still somewhat "adherent." In addition, this
38 adherence seems to apply as least as much to the relation between the
39 subject and the semiotic resources he or she makes use of as to the rela-
40 tion between the signifier and the signified.¹⁴

41 Piaget is quite right in distinguishing the manifestation of the semiotic
42 function from other ways of "connecting significations," to employ his

1 own terms. Nevertheless, it is important to note that, while the signifier of
2 the index is said to be an *objective* aspect of the signified, we are told that
3 in the sign and the “symbol” (i.e., in Piaget’s terminology, the conven-
4 tional and the motivated variant of the semiotic function, respectively) ex-
5 pression and content are differentiated *from the point of view of the sub-*
6 *ject*. Curiously, this distinction between the subjective and objective
7 points of view is something Piaget seems to forget about in the following.
8 We can, however, imagine this same child that in Piaget’s example uses a
9 pebble to stand for a piece of candy having recourse instead to a feather
10 in order to represent a bird, or employ a pebble to stand for a rock, with-
11 out therefore confusing the part and the whole: then the child would be
12 employing a feature, which is *objectively* a part of the bird, or the rock,
13 while differentiating the former from the latter *from his point of view*.
14 Only then would he be using an index, in the sense in which this term
15 is employed in semiotics, that is, as true sign. In terms of socially better-
16 established signs, a similar example would be the bull’s head used to indi-
17 cate, above a market stand, that beef is sold there. Although in France,
18 for example, sculpted heads of bulls or horses are employed outside the
19 relevant shops, it is still possible to find real heads used in traditional
20 markets in some countries.

21 The hunter, on the other hand, who identifies the animal by means of
22 the tracks, and then employs them to find out which direction the animal
23 has taken, and who does this in order to catch the animal, does not, in his
24 construal of the sign, confuse the tracks with the animal itself, in which
25 case he would be satisfied with the former. Indeed, if the tracks are not
26 differentiated from the animals having produced them, they cannot be
27 read as signs, but only as a part of the complex situation of which the
28 animal is a part. Both the child in our example and the hunter are using
29 indices, or indexical signs, where the “real” connection is transformed
30 into a differentiation in the sign.¹⁵

31 On the other hand, the child *and the adult* will fail to differentiate the
32 perceptual adumbration in which he has access to the object from the ob-
33 ject itself; indeed, they will identify them, at least until they change their
34 perspective on the object by approaching it from another vantage point.
35 And at least the adult will consider a branch jutting out behind a wall
36 as something that is non-differentiated from the tree, to use Piaget’s ex-
37 ample, in the rather different sense of being a proper part of it.¹⁶ In the
38 Peircean sense an *index* is a sign, the relata of which are connected, inde-
39 pendently of the sign function, by *contiguity* or by that kind of relation
40 that obtains between a part and the whole (henceforth termed
41 *factorality*). But of course contiguity and factorality are present every-
42 where in the perceptual world without as yet forming signs: we will say,

1 in that case, that they are mere *indexicalities*. Perception is perfused with
2 indexicality.¹⁷

3 An index, then, must be understood as indexicality (an *indexical* rela-
4 tion or *ground*, to use an old Peircean term) plus the sign function. Anal-
5 ogously, the perception of similarities (which is an *iconic ground*) will
6 only give rise to an icon when it is combined with the sign function. I
7 therefore cannot agree with Deacon (1997: 76) when he claims that cam-
8 ouflage in the animal world such as the moth's wings being seen by the
9 bird as "just more tree" are essentially of the same kind as those "typical
10 cases" of iconicity we are accustomed to call pictures. As always, there
11 are passages in Peirce's work that may be taken in different ways, but it
12 makes more systematic and evolutionary sense to look upon iconicity and
13 indexicality as being only potentials for something being a sign that still
14 have to be "embodied," as Peirce suggests regarding another division of
15 signs:

16
17 A *Qualisign* . . . cannot actually act as a sign until it is embodied; but its embodi-
18 ment has nothing to do with its character as a sign. A *Sinsign* . . . involves a quali-
19 sign, or rather, several qualisigns. But these qualisigns are of a peculiar kind and
20 only form a sign through being actually embodied. (*EP 2*: 291)

21
22 An indexicality, then, is not a sign; it is simply the perception of two
23 things being connected. It will be a sign only once these items are experi-
24 enced as being detached from each other. The foot touching the earth is
25 an indexicality; the traces left on the soil is an indexical sign. The branch
26 of the tree that is still part of the tree is an indexicality; in the theatre,
27 however, where it is cut off from the tree, it may well be an indexical
28 sign for it. Strictly speaking, iconicity, in Peirce's understanding of the
29 term, is not even a relationship; but once two iconicities are experienced
30 together, they form an iconic ground, which is a relation, but still not a
31 sign. It is the experience of bark on one place being similar to bark higher
32 up or lower down; or of the tree being similar to another tree. A picture
33 of a tree, however (or even a tree on a theatre scene) is an iconic sign
34 (cf. Sonesson 2003a and Figure 2).

35 While the introduction of the notion of differentiation is a substantial
36 accomplishment on the part of Piaget, he unfortunately never spells out
37 its import. As I have mentioned above, he defines it in terms of the sub-
38 ject's point of view, but then uses examples in which the disconnection
39 already exists objectively. The sense of objectivity and subjectivity em-
40 ployed here should of course be related to the common sense world (that
41 is, the *Lifeworld*) in which human beings stake out their life. Indeed, what
42 Piaget is concerned with is precisely the "construction," in his terms, by

	<i>Firstness</i>	<i>Secondness</i>	<i>Thirdness</i>
	Impression	Relation	Habituation /Rule
<i>Firstness:</i> Principle	Iconicity	—	—
<i>Secondness</i> Ground	Iconic ground	Indexicality = indexical ground	Symbolicity = symbolic ground
<i>Thirdness</i> Sign	Iconic sign (icon)	Indexical sign (index)	symbolic sign (symbol)

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

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 pictures 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 differentiation 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 Piagetean) 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, differentiation 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 signified. 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 opposition between the two items being subjectively, rather than objectively,

1 separate from each other. It is here that, probably without knowing
2 it, Piaget is the most Saussurean — and, at the same time, most true to
3 Deely’s Latins. I am thinking about the passage in which Saussure says
4 that semiotic resources are points of view taken on material things (and,
5 we could add, on the world generally). It is in becoming a standpoint on
6 the world than the sign separates out from the world. This is the origin
7 of what Deely (2001), following the Latins, calls “mind-dependent” (*ens*
8 *rationis*) versus “mind-independent being” (*ens reale*). Interestingly,
9 Searle (1995), who talks about “language-dependant” and “language-
10 independent facts” in what appears to be a similar sense, sometimes slips
11 into the alternative terms referring to the mind (and more so in Searle
12 1999), although he would certainly deny having read any philosophy ear-
13 lier than Austin. In the next section, I will suggest that this division is
14 incomplete.

15 Nor should differentiation be identified with displacement as defined
16 by Hockett (1977), which (rightly, no doubt) appears as one of the “de-
17 sign features” of language in most introductory textbooks.¹⁹ As in the
18 case of the tracks left by the hunted animal, displacement may be a con-
19 sequence of differentiation. But differentiation only comes on its own
20 when the sign is in *presence* of its referent, for then it allows us to con-
21 strue reality in different ways (“subjectively,” as Piaget would have said),
22 picking out that which is relevant, and ignoring, or downplaying other
23 features.

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

37 When the sign, whether it is a stretch of discourse, a picture, or
38 an animal track, is present along with the referent, however, the signi-
39 fied allows us to refocus the referent, in other words, to present it in a
40 particular perspective. For this is requires independence: that is so say,
41 a body of its own. Thus, the notion of differentiation itself needs to be
42 clarified.

1 2.4. *Different ways of “connecting significations”*

2
3 The notion of differentiation has certainly not been satisfactorily defined
4 in these pages: expression and content, I have suggested, do not go over
5 into each other in time and/or space, and they are perceived to be of dif-
6 ferent nature. To get any further, both phenomenological and experimen-
7 tal investigations are in order. Some clarification of this issue when be
8 given when we attend to the Augustinian-Husserlean tradition for the def-
9 inition of the sign. All we can do at present is pointing out the contrast
10 obtaining between signs and other kinds of meaning.

11 Each time two objects are perceived together in space, there is *contigu-*
12 *ity*; and each time something is seen to be a part of something else, or to
13 be a whole made up of many parts, there is *factorality* (as defined in
14 Sonesson 1989). According to Husserl, two or more items may enter into
15 different kinds of “pairings,” from the “paired association” of two co-
16 present items (which we will call *perceptual context*), over the “appresen-
17 tative pairing” in which one item is present and the other indirectly given
18 through the first, to the real sign relation, where again one item is directly
19 present and the other only indirectly so, but where the indirectly pre-
20 sented member of the pair is the theme, i.e., the center of attention for
21 consciousness (cf. Husserl 1939; Luckmann 1980).

22 Whereas the items forming the sign are conceived to be clearly differ-
23 entiated entities, and indeed as pertaining to different “realms” of reality,
24 the “mental” and the “physical” in terms of naive consciousness, the
25 items of the *perceptual context* continuously flow into each other, and
26 are not felt to be different in nature. In fact, both content and expression
27 of the sign are actually “mental” or, perhaps better, “intersubjective,” as
28 classical Saussurean linguists would insist; but we are interested in the
29 respect in which the sign user *conceives* them to be different. Piaget’s no-
30 tion of differentiation is vague, and in fact multiply ambiguous, but, on
31 the basis of his examples, two interpretations can be introduced: first, the
32 sign user’s idea of the items pertaining to different basic categories of the
33 common sense Lifeworld; and, in the second place, the impossibility of
34 one of them going over into the other, following the flow of time or an
35 extension in space.

36 Suppose that, turning around a corner of the forest path, we sud-
37 denly catch a glimpse of the woodcutter lifting his axe over his shoulder
38 and head. This experience perfectly illustrates the flow of indexicalities
39 which do not stop to become signs: it is sufficient to observe the wood-
40 cutter in one phase of his action to know what has gone before and
41 what is to come: that he has just raised his tool from some lower
42 level, and that at the next moment, he is going to hit the trunk of the

1 tree. If we take a snapshot of one of the phases of the woodcutter's
 2 work, we could use it, like the well-known traffic sign meaning "road-
 3 work ahead," as a part for the whole or, more oddly perhaps, as a
 4 phase signifying contiguous phases. There has been a radical change
 5 from the flow of indexicalities occurring in reality, for not only is
 6 there now a separation of expression and content "from the point
 7 of view of the subject," but this separation has been objectified in the
 8 picture. The picture is a sign, in the sense of it having a signifier which
 9 is *doubly differentiated* from its signified, and which is *non-thematic*
 10 and *directly given*, while the signified is *thematic* and only *indirectly*
 11 *present*.

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

27 As Manetti (1993) has shown, divination, together with medical symp-
 28 toms, were the first semiotical phenomena studied; and they all have the
 29 form, as later formalized by the Stoics, that if something is the case (p),
 30 then something else is also the case (q).²⁰ Indeed, this was that which to
 31 Antiquity, before Augustine, was known as a sign (*semeion*), which what
 32 we would call linguistic signs were not (cf. also Deely 2001). Indeed, a lin-
 33 guistic signifier (or a pictorial one) is not readily conceived as an effect
 34 permitting as to conclude to the cause, identified with the signified. Our
 35 wood-cutter, surprised by the ash falling down (p), may well conclude
 36 that Vesuvius is erupting (q); but at this very moment, this is a continu-
 37 ous phase of a complex event sequence, in which one phase foreshadows
 38 another, not a sign, in the sense of a signifier being differentiated from a
 39 signified. More precisely, in Husserlean terms, it is a protention occurring
 40 in the here and now of the woodcutter, pointing forwards to the next im-
 41 mediately following moment, and through that the moments to follow.
 42 To the archaeologist, on the contrary, the carbonized body of the wood-

1 cutter is a true sign, not only a logical implication. It is to some extent
2 outside of time and space.²¹

3 Something like Husserl's criteria are required, but perhaps not suffi-
4 cient, in order to separate the sign function from other dyadic relations
5 between (more or less) differentiated members. It is possible, no doubt,
6 to conceive of the sign as some kind of mapping between "mental
7 spaces," as suggested by Fauconnier (1994: Fauconnier and Sweetser
8 1996), but this is not of much use as long as we have no criteria for
9 separating the sign from all other instances of such mappings listed by
10 Fauconnier, such as counterfactuals, analogy, metaphors, metonymy,
11 propositional attitudes, modalities, pragmatic terms, frames, models, and
12 so on. This is of course not to deny that some valuable generalizations
13 may be stated at this level.²²

14 Another case in point is one of the arguments employed by Fodor to
15 posit the existence of a "language of thought": that in order for us to be
16 able to redescribe common sense psychology in terms of brain function-
17 ing, there must be something material, parallel to the expression of lan-
18 guage that in the brain corresponds to the neural pathways, which is re-
19 lated to something mental, parallel to the content of language. Indeed,
20 Fodor's argument relies on expression and content of the "language of
21 thought" being isomorphic, that is, highly iconical, so that whatever is
22 said to happen to the expression also can be said to happen to the con-
23 tent, but I am not concerned with this specific claim here. Whatever the
24 merit of this argument, the comparison of the relationship between brain
25 anatomy and consciousness in terms of expression and content is falla-
26 cious. The neural pathways are not that which is immediately given but
27 not in focus, and consciousness is not indirectly given but in focus. Be-
28 tween neural pathways and thinking there is no doubt some kind of
29 causal relationship, no matter how we choose to construe it; but there is
30 no semantic relation. Indeed, the expression of a sign is not even material,
31 considered as a form (in Saussurean terms).²³

32 Eco (1984: 216–217) has repeatedly denied that the mirror is a sign: in-
33 stead of standing *for* something it stands *before* something: the mirror im-
34 age is not present in the absence of its referent, is causally produced by its
35 object, and is not independent of the medium or channel by which it is
36 conveyed.²⁴ Indeed, in his most recent work, Eco (1998: 22; 1999: 371)
37 extends this description to some phenomena, notably television, which
38 most people would naturally consider to be pictorial signs. With reference
39 to our more precise concept of sign, I really see no reason to deny the sign
40 character of the mirror: something that is comparatively *more direct* and
41 *less thematic*, the mirror image, stands for something that is *less direct*
42 and *more thematic*, the object in front of the mirror; and the person or

1 thing in front of the mirror is clearly *differentiated* from the image in the
2 mirror.

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

14 The mirror and the picture, just like verbal language, have in common
15 being founded on a differentiation between two units which are *asymmet-*
16 *rical in a double sense*, first because one of the units is more immediately
17 accessible to consciousness than the other, and second because the second
18 units is more in focus than the first. This is not true of all kinds of con-
19 junctions of “mental spaces,” nor does it apply to Fodor’s “language of
20 thought.” The kind of asymmetry involved here is of course not at all op-
21 posed to the symmetry permitting the listener to recover the same signi-
22 fied from the signifier that prompted the speaker to choose it in the first
23 place, or the possibility to look up the French equivalent of an English
24 word in a dictionary, as well as going the inverse way.

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

34 2.5. *The ground as a principle of relevance*

35 To go from the concept of iconicity to the iconic sign, as well as from in-
36 dexicality to the indexical sign, we have to ponder the meaning of a no-
37 tion, sporadically, but often significantly, used by Peirce, i.e., the notion
38 of *ground*. As applied to signs, I will here suppose, iconicity is one of the
39 three relationships in which a representamen (expression) may stand to its
40 object (content or referent) and which can be taken as the “ground” for
41
42

1 their forming a sign: more precisely, it is the first kind of these relation-
2 ships, termed Firstness, “the idea of that which is such as it is regardless
3 of anything else” (CP 5.66), as it applies to the relation in question. In
4 one of his well-known definitions of the sign, a term which he here, as
5 so often, appears to use to mean the sign-vehicle, Peirce (CP 2: 228) de-
6 scribes it as something which “stands for that object not in all respects,
7 but in reference to a sort of idea, which I have sometimes called the
8 *ground* of the representamen.”

9 Some commentators have claimed that here Peirce is talking about
10 some properties of the expression, whereas others favor the content. Ac-
11 cording to one of Peirce’s commentators, Greenlee (1975: 64), the ground
12 is that aspect of the *referent* that is referred to by the expression, for in-
13 stance, the direction of the wind, which is the only property of the refer-
14 ential object “the wind” of which the weathercock informs us. Although
15 Greenlee does not say so, this would seem to make the ground into that
16 which separates the “immediate object” (that part of the content which is
17 directly given through the sign) from the “dynamical object” (roughly,
18 the referent, i.e., meaning connected to the content but not given in the
19 sign but present in other past or future signs). On the other hand, Savan
20 (1976: 10) considers the ground to consist of the features picked out from
21 the thing serving as *expression*, which, to extend Greenlee’s example,
22 would include those properties of the weathercock permitting it to react
23 to the wind, not, for instance, its having the characteristic shape of a
24 cock made out of iron and placed on a church steeple.

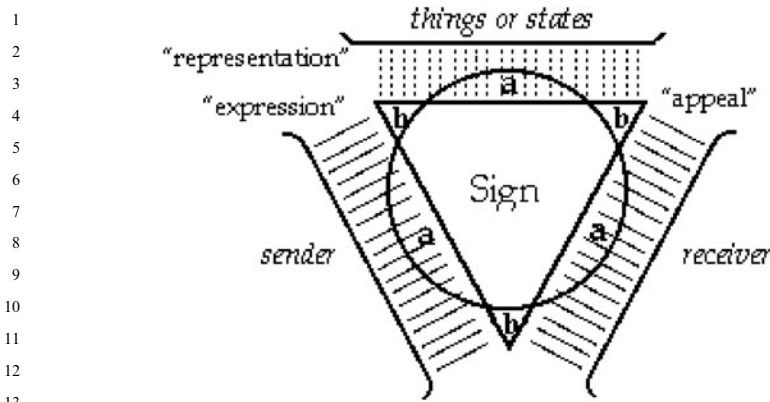
25 If we have to choose between Greenlee’s and Savan’s interpretations,
26 all quotations from Peirce that have some bearing on the issue would
27 seem to favor the latter. Indeed, Peirce talks about “the ground of the
28 representamen,” and even claims that the representamen is connected to
29 three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

38 Nevertheless, it seems to me that, in order to make sense of the notion
39 of iconic signs, we must admit that both Greenlee and Savan are right:
40 the ground involves both expression and content (cf. Figure 1). Rather
41 than being simply a “potential sign-vehicle” (Bruss 1978: 87), the ground
42 would then be a potential sign. Indeed, if we take seriously Peirce’s claim

1 that the concept of “ground” is indispensable, “because we cannot com-
 2 prehend an agreement of two things, except as an agreement in some
 3 *respect*.” (CP 1.551), then it must be taken to operate a modification on
 4 both the things involved.

5 The operation in question, I submit, must be *abstraction* or, as I would
 6 prefer to say, *typification*. In one passage, Peirce himself identifies
 7 “ground” with “abstraction” exemplifying it with the blackness of two
 8 black things (CP 1.293). It therefore seems that the term *ground* could
 9 stand for those properties of the two things entering into the sign function
 10 by means of which they get connected, i.e., both some properties of the
 11 thing serving as expression and some properties of the thing serving as
 12 content. In case of the weathercock, for instance, which serves to indicate
 13 the direction of the wind, the content ground merely consists in this direc-
 14 tion, to the exclusion of all other properties of the wind, and its expres-
 15 sion ground is only those properties which makes it turn in the direction
 16 of the wind, not, for instance, the fact of its being made of iron and re-
 17 sembling a cock (the latter is a property by means of which it enters an
 18 iconic ground, different from the indexical ground making it signify the
 19 wind). If so, the ground is really a *principle of relevance*, or, as a Saussur-
 20 ean would say, the “form” connecting expression and content: that which
 21 must necessarily be present in the expression for it to be related to a par-
 22 ticular content rather than another, and vice-versa. This phenomena in
 23 well-known from linguistics, where often conventional rules serve to pick
 24 out some properties of the physical continuum, differently in different lan-
 25 guages, which have the property of separating meanings, i.e., of isolating
 26 features of the expression on the basis of the content, and vice-verse. The
 27 difference is, of course, that in the iconic ground, the relation that deter-
 28 mines one object from the point of view of the other is basically non-
 29 conventional (cf. Sonesson 1989: III.1).

30 If the ground is a form of abstraction, as Peirce explicitly says, then it is
 31 a procedure for engendering *types*, at least in the general sense of ignoring
 32 some properties of things and emphasising others, for the purpose of plac-
 33 ing them into the same class of things. And if it serves to relate two things
 34 (“two black things” for example, or “the agreement of two things” in
 35 general), it is a *relation*, and it is thus of the order of Secondness, i.e.,
 36 “the conception of being relative to, the conception of reaction with,
 37 something else” (CP 6.32). All this serves to underline the parallel with
 38 the principle of relevance, or pertinence, which is at the basis of structural
 39 linguistics, and much of semiotics inspired by it (Hjelmslev and Prieto,
 40 notably). But we could take this idea further, adding to the notion of
 41 ground a more explicitly constructive aspect. To many structuralists (the
 42 Prague school notably), relevance is a double movement, which both



14 Figure 3. Bühler's *Organon* model (with "abstractive relevance" and "abstractive supple-
15 mentation")

16
17 serves to downplay non-essential elements and to add others which were
18 anticipated but not perceived: thus, it depends on the twin principles of
19 "abstractive relevance" and "apperceptive supplementation" embodied
20 in Bühler's *Organon* model (cf. Figure 3 and Sonesson 1989: II.4.2.), as
21 well as in the Piagetian dialectic between accommodation and assimila-
22 tion (cf. Sonesson 1988: I.3.1).

23 I would not like to conceal the fact that there are many other passages
24 in Peirce's work (many of which are given by Eco 1998: 44, 1999: 59) that
25 seem to state rather clearly that the ground is Firstness, which means that
26 it cannot be a relation, nor any kind of abstraction, as I understand it,
27 that is, no typification. Deely (2001: 343, 641) clearly condones this inter-
28 pretation. It seems to me, however, that Firstness would be a true descrip-
29 tion of the respective lists of properties of the thing serving as expression
30 and the thing serving as content, but not of the principle establishing the
31 relation between them. Indeed, a quotation from Peirce (*CP* 1.551–1.553;
32 also *EP* 1: 1–10) given by Deely (2001: 642–643), but not commented
33 upon in this sense, seems to suggest that Peirce would reserve the term
34 "ground" for the portion of the expression singled out and use the term
35 "correlate" for the corresponding part of the content. This would how-
36 ever seem to do away with the relational character of the notion involved.
37 Peirce would apparently call the first list of properties "ground" and the
38 second list "correlate," but I would prefer to use the term "ground" for
39 the whole phenomenon, distinguishing, when appropriate, the expression
40 ground from the content ground (cf. Sonesson 2003a).

41 It is perhaps not too difficult to understand how Peirce might have been
42 thinking. Beyond the varying descriptions of Firstness, it appears as

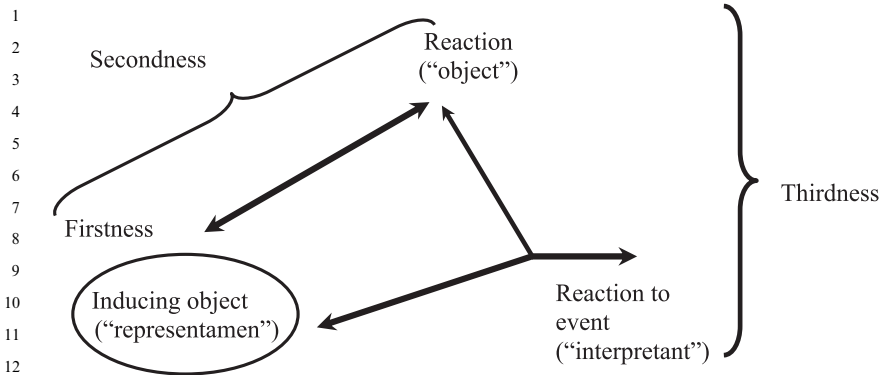


Figure 4. The general model of being as semiosis, according to Peirce

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 series 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.

1 Here clearly we are comparing (which is precisely the word used by
2 Peirce) one item to another, so makes sense to claim that the relationship
3 is produced in one item taking the point of view of the other. But in the
4 sign, as understood here, this comparison is mutual.²⁶

5 It has been suggested by Deely (2001: 343, 641) that the notion of
6 ground is equivalent to what is known in scholastic philosophy as the
7 “formal object.” It may at first seem that this would support my interpre-
8 tation. In fact, however, the formal object turns out to be that which de-
9 scribes the domain to which particular sense organs are receptive: the eyes
10 to differentiated lights, the ears to sound, smell to odours, touch to tex-
11 tures, etc. This is of course a kind of principle of relevance, but a very
12 broad one indeed. Such a notion could perhaps account for “the black-
13 ness of two black things” as an instance of differentiated lights (where
14 the abstraction would separate blackness out from other properties of
15 the hue and of the things to which they apply). But it seems that the “re-
16 spect” in which there is “agreement between two things” would often
17 have to be much more precise to characterize a sign relationship. How-
18 ever, apart from the five external senses, medieval philosophy distin-
19 guished a synthetic sense (called “common sense”), memory, imagina-
20 tion, and estimation. This would seem to open up the application of the
21 concept of formal objects considerably. If formal objects are indeed “ten
22 formally distinct cognitive channels” and may be defined as “whatever is
23 directly and essentially attained by a power and by reason of what what-
24 ever else is attained is attained” (Deely 2001: 344), then it may perhaps
25 have something to do with what I have suggested here, but it remains
26 considerably less specific.

27

28

29 2.6. *Summary*

30

31 Studies of human phylogeny and ontogeny have shown there to be differ-
32 ent kinds of meaning, attained at different points of evolution and devel-
33 opment. It is convenient to employ the term sign, as used originally by
34 Augustine, but more recently, or more precisely, by Piaget and Husserl,
35 to describe a late stage in the development of meaning, characterizing
36 not only language, but also pictures, symbolic play, and at least some ges-
37 tures. Pictures, notably, can be shown to require for their interpretation
38 not only an awareness of a difference as well as a similarity between
39 expression and content, but also a double asymmetrical relationship be-
40 tween the latter. Neither Saussure nor Peirce offers any real definition of
41 what the sign is. Nor is the notion of representation in cognitive psychol-
42 ogy defined. The discussion whether the sign has two, three or more parts

1 has no meaning before we have determined the domain that we are ana-
 2 lyzing and what criteria we will apply to its segmentation. Those who
 3 have rejected the notion of sign or representation, such as Greimas in
 4 semiotics, and contemporary cognitive scientists such as Lakoff and John-
 5 son, have never defined that which they reject. Instead of rejection the no-
 6 tion of sign, we have to clarify it, so as to separate it from other notions
 7 of meaning, which we will call mediations. The sign, in our sense, sup-
 8 poses the concomitant awareness of at least two items, which are *subjec-*
 9 *tively differentiated* from each other, while one of them is *directly given*
 10 but *not thematic* and the other *indirectly given* and *thematic*. The signs is
 11 thus different from other mediations, such as intentionality, in which one
 12 item is both directly given and thematic, while the other is neither, and
 13 implicational relationships, which are not differentiated. In this sense, pic-
 14 tures are signs, but they refer to intentional relations, and they contain
 15 implications.

16

17

18 3. Meanings beyond signs: From *Umwelt* to *Lebenswelt*

19

20 It can hardly be denied that perception is imbued with meaning. But this
 21 does not mean that it is built up of signs. Perhaps the most clearly articu-
 22 lated claim for perception (and the corresponding action) being endowed
 23 with meaning is the functional cycle defined by von Uexküll, the *Umwelt*,
 24 different for every animal species. Although Ernest Cassirer (1942: 29,
 25 1945: 23), the proponent of “symbolic forms,” may have been the first
 26 one outside of biology to take account of von Uexküll, he does not even
 27 mention the fact that, to von Uexküll, the model of the functional cycle is
 28 a theory of meaning. Cassirer’s symbols are like our signs. In philosoph-
 29 ical phenomenology, as described by an unrelenting follower of Husserl,
 30 Aron Gurwitsch (1964: 176–177), perception is said to carry meaning, but
 31 “in a more broad sense than is usually understood,” which tends to be
 32 “confined to meanings of symbols,” that is, our signs. Indeed, as Gur-
 33 witsch (1964: 262) goes on to suggest, meaning is already involved in the
 34 perception of something on the surface as being marks, which then serve
 35 as carriers of meanings found in words. Criticizing other psychologists,
 36 Gurwitsch notes that the carrier of meaning is not part of the meaning
 37 of a sign, unlike what happens in perception. In the end, Gurwitsch may
 38 not be very clear about the difference, but he does explain in which sense
 39 perception is involved with meaning: it is made up of perspectives (*noe-*
 40 *mata*), which are integral parts of bigger wholes. To show this, Gurwitsch
 41 takes recourse with *Gestaltpsychology*. As I have formulated the distinc-
 42 tion elsewhere (Sonesson 1989), perception involves wholes that are *more*

1 than their parts; signs have to do with something which is *something else*
2 than what they stand for. Peirce (*CP* 4.3), of course, ended up recognizing
3 that “to attempt to make the word *representation* serve for an idea so
4 much more general than any it habitually carried was injurious.” “Medi-
5 ation” might be better, he muses.

6

7

8 3.1. *Signs and mediations: The Fonseca-Peirce connection*

9

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

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

37 Deely (2001: 590) suggests that Locke’s last chapter, in which Locke
38 proposes to see all of philosophy, apart from physics and ethics, as a doc-
39 trine of sign, would require the reworking of the whole book, substituting
40 “signs” for “ideas.” It might be argued, however, that if you take the do-
41 main described by the words “signs” and “ideas” and put them together,
42 it does not matter much whether you call all of it “signs” or “ideas” (just

1 as it does not matter much, to reverse a classical Saussurean example,
2 whether the French use “lamb” or “mutton” for both the domains cov-
3 ered by these terms in English — semantically, of course, because phonet-
4 ically, this would be another matter). A reasonable retort would be that it
5 is different to project the model of the sign to the domain of ideas, and
6 the model of the idea to the domain of signs. It is not clear, however,
7 what exactly is the difference between these models. However, the fol-
8 lowers of Locke in France, who certainly took their name from the con-
9 cept of ideas, the “ideological school” (Pincavet 1891; Gusdorf 1966–
10 1985), ended up talking very much about signs (Degérando 1800). Taking
11 a clue from Deely, I will suggest that the sign model, as opposed to the
12 model of ideas, is relational. But that does not mean that all relations
13 are properly construed as signs.

14 As was noted above, the church-father Augustine seems to have been
15 responsible, certainly not for inventing, but for making explicit the com-
16 mon sense notion of sign on which later thinkers, such as Saussure and
17 Husserl (and, at least in his definitions, Peirce) are tacitly building: it is,
18 he tells us (in the convenient paraphrase of Deely 1994: 58) “something
19 which, on being perceived, brings into awareness another besides itself.”
20 Thomas Aquinas already had some misgivings about this definition, with-
21 out ever daring to reject it outright. The followers of Aquinas in Paris
22 may have been somewhat bolder. In a written form that has come down
23 to us, however, we first know this criticism from the works of Pedro da
24 Fonseca, who was active in Coimbra on the Iberian peninsula in the six-
25 teenth century. To Fonseca and his followers in Coimbra, the definition
26 of the sign must be considerably broader: a sign is anything that serves
27 to bring into awareness something different from itself, whether the sign
28 (in the sense of the signifier) itself becomes subject to awareness in the
29 process or not.

30 If the sign itself does not have to be perceived in order for us to come
31 to an awareness of that which is signified, Fonseca described it as being
32 *formal*; but if the sign cannot lead to the awareness of anything at all un-
33 less it is itself perceived, he called it *instrumental* (cf. Deely 1982: 52, 1994:
34 58, 2001: 414). Put in more convenient terms, a sign may either consist of
35 a signifier (expression) that has to be perceived as such in order to usher
36 into the perception of the corresponding signified (content); or it may
37 consist in a signifier that is not ordinarily perceived as such but still some-
38 how serves to mediate the perception of a signified. Thus, Fonseca
39 pointed to an analogy, but also to a distinction, of which at least the
40 latter seems to have been lost even on latter-day semioticians and cogni-
41 tive scientists. If so, this would belie the origin of the distinction in the
42 nominalist ambience (cf. Deely 2001: 390).

1 What is called here an instrumental sign clearly is that which Husserl,
2 following Brentano, has described as the fundamental trait of conscious-
3 ness, *intentionality*, that is the property of being directed to that which is
4 outside of consciousness. Brentano (1885), whose concept of intentional-
5 ity was taken over by Husserl and more recently by Edelman (1992), him-
6 self tells us he derived the idea from scholastic philosophy. Deely (2001:
7 404) claims it was introduced into scholastic philosophy in the twelfth
8 century as shorthand for indicating the essential relationality of psycholo-
9 gical phenomena.²⁷ In fact, when closely considered, Fonseca's obser-
10 vations really go against the grain of the by now familiar identification
11 of our awareness of the world with the sign. It echoes Husserl's as well
12 as Gibson's description of the perceptual act as something that points be-
13 yond itself without itself being present to consciousness (cf. Sonesson
14 1989: III.3.2). Indeed, Deely (2001: 411) argues that to Fonseca, formal
15 signs are not properly speaking signs:

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

21
22 More exactly, in what in here called a formal sign, the "sign" cannot
23 be perceived, if we are go gain a proper awareness of the thing signified;
24 for such an awareness is only possible in what James Gibson calls the
25 "pictorial," and Edmund Husserl calls the "phenomenological," attitude,
26 in which the content of consciousness, and not the thing cognized, be-
27 comes the theme of the mental act. This is exactly what does not happens
28 in the familiar Lifeworld, as but Gibson and Husserl have pointed out.
29 Indeed, the "pictorial attitude," similar to a picture, is "indirect percep-
30 tion," whereas ordinary perception is "direct."

31 When Gibson (1978: 228) observes that, when we are confronted with
32 the-cat-from-one-side, the-cat-from-above, the-cat-from-the-front, etc.,
33 what we really *see* is all the time the same invariant cat, he actually
34 recovers the central theme of Husserlean phenomenology, according to
35 which the object is entirely, and directly, given in each of its perspectives
36 or *noemata* (see Husserl 1939, 1962a, 1962b, 1973; and Sonesson 1989:
37 I.2.2). In a similar fashion, Husserl's favorite example is the cube (or per-
38 haps the die), which can be observed from different sides. In Gibsonean
39 terms, these are "the surfaces of the world that can be seen now from
40 here" (Gibson 1978: 233). Husserl's cube and Gibson's cat instantiate
41 the same phenomenal fact — for it is a phenomenal fact, and not an ex-
42 perimental one, also in Gibson's work.

1 Just as Husserl called into question the conception of his contemporary
 2 Helmholtz, according to which consciousness is like a box, within which
 3 the world is represented by signs and images, from whose fragmentary
 4 pieces we must construct our perceptions (cf. Küng 1973), so Gibson's
 5 strawmen are the followers of Helmholtz, the so-called "constructionists"
 6 (who have recently reemerged within cognitive science, e.g., Hoffman
 7 1998), who claim that hypotheses are needed to build up perceptions
 8 from the scattered pieces offered us by sensation (cf. Sonesson 1989:
 9 III.3.3).²⁸ At least superficially, however, there is an important difference;
 10 for whereas Husserl rejects the picture metaphor of consciousness, by
 11 showing Brentano and Helmholtz to be in error in their very conception
 12 of pictures and other signs because of ignoring the transparency of the
 13 expression to the content (cf. Küng 1973), Gibson (1978) instead empha-
 14 sizes the dissimilarity of the picture from a real-world scene, thus showing
 15 the numerous experiments using pictorial stimuli to study normal percep-
 16 tion to be seriously misguided. And yet, to both Husserl and Gibson, nor-
 17 mal perception gives *direct access* to reality, while Gibson thinks pictures
 18 represent a kind of *indirect perception*, and Husserl (1980) tells us (cf. So-
 19 nesson 1989: III.3.6) that they are "perceptually imagined."

20 To perceive surfaces is a very different thing from perceiving marks on
 21 surfaces, Gibson (1980) maintains. Depth is not added to shape, but is
 22 immediately experienced. In fact, the perception of surfaces, of their lay-
 23 out, and of the transformations to which the latter are subjected, is essen-
 24 tial to the life of all animal species, but the markings on these surfaces
 25 have only gained importance to man, notably in the form of pictures.
 26 The marks, produced by what Gibson calls the *graphic act*, can be depos-
 27 its, traces, lines, or shadows projected on the surface. They may be
 28 produced by finger tracing, drawing, painting, or engraving, with a tool
 29 such as a stylus, brush or pen; or otherwise a simple device, like the ruler
 30 or the compass, may be used, or a complex one, such as the printing
 31 press, the gadgets of photography, or the projector of lantern slides (Gib-
 32 son 1980: xii, 1978: 229). Surfaces have the kind of meaning that Gibson
 33 elsewhere calls "affordances"; the markings on surfaces, however, have
 34 "referential meaning." Without discussing the exact import that should
 35 be given to the term "affordance," we may safely conclude that "referen-
 36 tial meaning" is a property of what we have called the semiotic function.
 37 That is, surfaces do not *stand for* other surfaces, but the markings on sur-
 38 faces may possibly do so. The pattern of a surface and the pattern *on* a
 39 surface are different, and can usually be distinguished by an adult. The
 40 surface on which a "graph" has been executed can be seen underneath
 41 the "graph." However, a surface may be decorated, regularized, textured,
 42 painted, or embellished in other ways without acquiring a referential

1 meaning; and deposits of dirt or blots of pigment may be left on the sur-
2 face without the surface being made to stand for something. The two
3 cases, intuitively describable in terms of the opposition between order
4 and disorder, are not distinguished by children.

5 To Gibson, then, the picture is a surface among other surfaces before
6 becoming a sign. Gibson (1978: 231) observes that, besides conveying
7 the invariants for the layout of the pictured surfaces, the picture must
8 also contain the invariants of the surface that is doing the picturing: those
9 of the sheet of paper, the canvas, etc., as well as those of the frame, the
10 glass, and so on. Although Gibson does not use the term, he clearly de-
11 scribes the picture as a sign, in the strict, Augustinian sense of the word:
12 as a surface that, on being perceived, brings into awareness something
13 beside itself. Gibson never specifies what he means when he claims that
14 surfaces are only seen to stand for something else by human beings, in
15 contradistinction to animals and children. If he meant to suggest that
16 surfaces can never be taken to be something else than surfaces by animals
17 and children he was clearly wrong: we know that even doves may react
18 the same way to a picture as to that which is depicted (cf. Sonesson
19 1989: III.3.1). The difficulty, clearly, consists in seeing, *at the same time*,
20 both the surface and the thing depicted. In other words, in consist in mak-
21 ing a differentiation: in telling the “body” of the sign apart from the
22 “body” of the object to which it alludes.

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

30 In his late life, Peirce realized that all his notions were too narrow: in-
31 stead of “sign,” he reflected, he really ought to talk about “medium” or
32 “mediation” (manuscript quotations given in Parmentier 1985). Also
33 Ernst Cassirer (1942, 1945) sometimes used the term “mediation” (that
34 is, “Vermittlung”) in a more general sense of meaning than “sign” (which
35 he called “symbol”), notably comprising the *Umwelt* ascribed to animals
36 by von Uexküll.²⁹ In the following, we will use the term *mediation* for this
37 general sense of meaning which Fonseca called sign and to which Peirce
38 sometimes also may be hinting.³⁰ Mediation, in this sense, has a least a
39 double aspect, even if we exclude signs: it corresponds to implicational re-
40 lationships such as those called signs by the Stoics, and it also involves
41 intentionality in the sense of Brentano and Husserl. In the former respect,
42 it seems to have something to do with Gibson’s “affordances,” and with

1 Piaget's notion of "connecting significations." Once we have taken a
 2 closer look at the ways in which ordinary perception is imbued with
 3 meaning, however, it will be easier to analyze the notion of intentionality,
 4 as related to what is known, in other traditions, as the psychology of
 5 propositional attitudes.

6

7

8

9 3.2. *The ecology taken for granted: The Lifeworld*

10

11 The idea of a common sense world has reappeared numerous times in
 12 philosophy as well as in the social sciences, sometimes perhaps suggested
 13 independently by different scholars. Husserl posits the Lifeworld so as to
 14 explain the foundation on which the models of the natural sciences are
 15 constructed, both serving as the primary objects studied and transformed
 16 by the model, and as the common sense world in which the scientists are
 17 accomplishing their work: indeed, you cannot treat the accelerator per-
 18 mitting you to study the electrons as being at the same time a bundle of
 19 electrons itself. Students of Husserl such as Aron Gurwitsch, Alfred
 20 Schütz, Maurice Merleau-Ponty, and Herbert Marcuse considerably ex-
 21 tended, not the meaning, but the function of the concept of Lifeworld, us-
 22 ing it to explain social reality itself. We owe to Schütz, in particular, the
 23 description of the Lifeworld as "the world taken for granted." The "com-
 24 mens" characterized by Peirce (*EP* 2: 478) would seem to be a similar do-
 25 main of shared assumptions. When the psychologist James Gibson postu-
 26 lated the world of "ecological physics," so as to explain the possibility of
 27 immediate perception, where the older school of constructionists had to
 28 suppose complex calculations, he does not refer to Husserl explicitly any-
 29 where in his writings, but he often uses the same phrases and examples.
 30 Greimas certainly took the idea of a semiotics of the natural world from
 31 Husserl via Merleau-Ponty. Common sense has always been the basis
 32 of Anglo-Saxon philosophy, from the British Empiricists to the Oxford
 33 school. At long last, however, even this tradition has come to appreciate
 34 the gap, diagnosed by Husserl, between the contemporary natural
 35 sciences and the world of our experience, postulating both a "naive phys-
 36 ics," and a "common sense psychology," which together would seem to
 37 make up the Lifeworld. In a more general sense, what Searle (1995: 127)
 38 calls the "background" would also seem to correspond to the Lifeworld,
 39 as does, if Searle is right about his parallel, a lot of things written by Witt-
 40 genstein and Bourdieu. Coming from a very different tradition, Jakob
 41 von Uexküll introduced the notion of *Umwelt* to serve as some kind of
 42 world taken for granted of the animals — although, of course, in a deeper

1 sense, the tick and his kin do not have choice of taking anything for
2 granted at all.

3 Within semiotics proper, A. J. Greimas (1970: 49) suggested that there
4 could be a cultural science of nature, a *semiotics of the natural world* —
5 which was concerned, then, with the world which is natural to us, just as
6 a particular language is our “natural language” (Swedish, English, Span-
7 ish, German, etc.). This amounts to an attempt to consider the traditional
8 domain of the natural sciences from a human point of view. One of the
9 cases Greimas mentions but does not dwell on is fire, which would nor-
10 mally be considered the subject matter of physics and chemistry. How-
11 ever, if it is reduced to the meaning it has for us, then, depending on the
12 particular culture and context involved it may stand for the ancestral
13 gesture thought to mark the beginnings of civilisation, for the operat-
14 ing force of steel furnaces, for one of the four elements, the universal
15 converter of the alchemists, the conflagration of the neighbor’s house,
16 the infernal flames, the cosy fire place in the country house, the log fire
17 of the barbecue party, the cowboy’s watch-fire, and so on (cf. Sonesson
18 1989: 26–29). When fire appears in a particular culture, in a ritual, a
19 film, or a picture, its presence its probably motivated rather by one of
20 the aforementioned meanings or similar ones than by the chemical for-
21 mula. In some of these cases, fire is a sign, in the others it is a functional
22 object.

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

38 But Greimas was not the first to conceive of a cultural science of na-
39 ture. His semiotics of the natural world, together with Husserl’s science
40 of the Lifeworld, and “ecological physics” as invented by the perceptual
41 psychologist James Gibson are all sciences of normality, of that which is
42 so much taken for granted that it is ordinarily not considered worthy of

1 study (cf. Sonesson 1989, 1994a, 1994b, 1996a, 1997). Another “science
2 of normalcy” is the time geography of Torsten Hägerstrand (1983), which
3 is concerned with general invariants of space and time, which tend to be
4 trivial, rather than exceptional in kind, and which impose restrictions on
5 the actions of individuals. So is of course “naive physics” as conceived in
6 cognitive science.

7 It may seem strange to put together ideas and observations made by a
8 philosopher, a psychologist, and a semioticians; yet these proposals are
9 largely the same; indeed, there are indications that both Greimas and
10 Gibson took their cue from Husserl (the former via Merleau-Ponty).³¹
11 Greimas, Gibson, and Husserl all felt the need for such a science because
12 they realized that the “natural world,” as we experience it, is not identical
13 to the one known to physics but is relative to human beings. Husserl’s
14 Lifeworld as well as Gibson’s ecological physics, but not Greimas’ natu-
15 ral world, takes this level to be a privileged version of the world, “the
16 world taken for granted,” in Schütz’s phrase, from the standpoint of
17 which other worlds, such as those of the natural sciences, may be invented
18 and observed (cf. Sonesson 1989: 26–29, 30–34). Indeed, since he tells us
19 language and the natural world are the two main divisions of semiotic
20 systems, Greimas probably thought of them as equally being representa-
21 tions, not in the wide sense of Fonseca or Peirce, but in that of French
22 structuralism, constructivism in perceptual psychology and classical cog-
23 nitive science. Moreover, while Greimas’ semiotics of the natural world
24 largely seems to be a kind of lexicon of the meaning of things, Husserl
25 and Gibson tried to formulate a set of general principles, which underlay
26 all our doings in the everyday world.

27 It is a basic property of the Lifeworld that everything in it is given in a
28 *subjective-relative* manner. This means, for example, that a thing of any
29 kind will always be perceived *from a certain point of view*, in a perspective
30 that lets a part of the object form the center of attention. As we noted
31 above, Gibson observes that when we are confronted with the-cat-from-
32 one-side, the-cat-from-above, the-cat-from-the-front, etc., what we *see* is
33 all the time the same invariant cat. To Husserl, this seeing of the whole
34 in one of its parts is related to *the etc. principle*, our knowledge of being
35 able, at any one point, to turn the dice over, or go round the house, to
36 look at the other sides. This principle applies to the temporal and the spa-
37 tial organization of the world alike. In time, it accounts for our expect-
38 tancy, at every moment, that life will go on, or that something will
39 change, or something more definite, such as that the dice will turn out to
40 have a certain number of eyes on the hidden sides (the *protensions*), as
41 well as our knowledge that we existed in the moment immediately preced-
42 ing the present one, that the dice did so to, and perhaps also our memory

1 of the sides of the dice we have seen before, and the context in which they
2 dice appeared (the *retentions*).³²

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

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

41 The Husserlean description of regularities also fits in with the notion of
42 *abduction*, which Peirce puts alongside the more familiar procedures of

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

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

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

1 3.3. *The affordances of a game of chess*

2
 3 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
 4 one or the other. But we will begin with the cube. Like any other object,
 5 the cube is necessarily given in perception from a *particular point of view*.
 6 Husserl calls what is seen the object (“Gegenstand”), and the aspect
 7 through which it is seen is termed “*noema*.” In our normal life in the Life-
 8 world, we do not attend to the particular acts and the corresponding as-
 9 pects through which the object is given. While the particular noema by
 10 means of which I presently see the cube only contains three of its sides in
 11 different perspectival deformations, I immediately see it as a cube, com-
 12 plete with its six sides, not as some strange object I hypothesize to be a
 13 cube. Through an act that Husserl calls *reflection*, the phenomenologist,
 14 the psychologist, and the aesthetically-minded contemplator may choose
 15 to attend to the acts of consciousness and their corresponding *noemata* in-
 16 stead, thereby transforming them into new objects with their own noe-
 17 mata. In normal consciousness however, the act will only give a particu-
 18 lar modification to the perception of the object, a tinge of meaning: some
 19 parts of the object appear more specified, others only roughly outlined.
 20 What is just sketched out in one noema may be filled in a number of
 21 others, and the knowledge that we can always go further in the explora-
 22 tion of the object is part and parcel of our perception of the object, as ex-
 23 pressed in the etc. principle. Whereas retentions of already seen sides are
 24 the basis for further exploration, protentions may be specified or rejected
 25 when the earlier unseen sides come into view (cf. Husserl 1939, 1962a,
 26 1962b).³⁷

27
 28 Gurwitsch (1957, 1974), who compared this Husserlean conception to
 29 the “spontaneous phenomenologies” of the Gestalt school, has pointed
 30 to the “Gestalt-coherence” with which the mutually confirming noemata
 31 form the object of perception. Criticizing Husserl because he seems to
 32 consider the object itself as a separate instance, an “X” which is the
 33 bearer of the noemata, Gurwitsch (1974: 254) tells us that the perceived
 34 thing is “*nothing else than the internoematic system itself, i.e., the system*
 35 *of multiple adumbrational presentations and of the properties and qualities*
 36 *exhibited in those presentations.*” Similarly, the predication (“X is red,”
 37 and so on) which Husserl conceived to be a “synthesis,” an adjunction
 38 of new properties, is really an “*analyzis*,” an explication of what is al-
 39 ready contained in the horizons of the perceptual thing.

40 While phenomenology does not have any historical connection to con-
 41 temporary psychologies of perception, as it has to Gestalt psychology,
 42 Gibson (1971, 1978) tells us, just like Husserl, that the object is directly

1 seen, complete with its hidden sides, without any inferences being neces-
 2 sary: even the child will see “the invariant cat.” What assures the identity
 3 of the object through all the differing views we may take on it, is, accord-
 4 ing to Gibson, “the formless and timeless invariants,” reminiscent of the
 5 “common core” in Gurwitsch’s “noematic matrix,” which defines percep-
 6 tual coherence.³⁸ Still closer to the noematic matrix suggested by Gur-
 7 witsch is Gibson’s disciple Hagen (1979, 1980), who maintains that the
 8 existence of pictorial perspective requires the mind to take account of
 9 “the entire family of possible perspective views of an object” (1980: 29),
 10 quite apart from the Gibsonian invariants. According to Gurwitsch’s pro-
 11 found analysis of the notion of perceptual noema, each point of view is
 12 really “*l’appréhension d’un système d’apparences dans la perspective et du*
 13 *point de vue d’un de ses membres*” (1957: 152). This means that each
 14 noema contains the whole object, but in such a way that some parts will
 15 be at the center of attention, given in all their details, while other parts
 16 are perceived marginally and vaguely, only in their general outlines.
 17 There are references (*renvois*; Gurwitsch 1957: 191) from each noema to
 18 all the others, in which what is here merely sketched in may be fully
 19 known. Thus we meet indexicality in another sense, as the continuity of
 20 one view to another — and certainly not as a “sign,” though Gurwitsch,
 21 like Jakobson, uses the word “renvoi.”³⁹

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

32 While both Gibson and Husserl exclude the cultural layer of interpreta-
 33 tion from the Lifeworld, Gibson at least take care to single out what he
 34 calls “affordances” as a kind of meaning distinct from referential mean-
 35 ing, and thus from the kind of meaning conveyed by signs. There is no
 36 proper definition of the notion of affordance in Gibson’s work, but he
 37 gives some suggestive examples: it is the graspability, or the edibility, of
 38 a thing. Graspability can be understood as the aptness to be grasped. Ed-
 39 ibility must be interpreted as the susceptibility of being eaten. These are
 40 inferences that might be said using a phenomenological term, to be “sedi-
 41 mented” onto a object of the Lifeworld: accordingly, an apple, once it is
 42 seen to be an apple, is also perceived as something that may be grasped

1 and then eaten, because these are events being known to have taken place
2 (and “properly” so) with other apples at other times. Therefore, the apple
3 is apt to be grasped and eaten, both in the sense of normalcy and norma-
4 tivity.⁴⁰ While it is possible for graspability to be a property of things in
5 some respect independent of culture, this could hardly be the case with
6 edibility. Anthropological studies are full of examples of things being
7 eaten in some places and considered entirely inedible in other places.
8 And it is easy to think of other meanings that are clearly of the same
9 kind as those mentioned and that are yet culturally specific. We just
10 have to think about the dice. Suppose there is some human culture where
11 die have not been invented: it might yet seem as if the throwability of the
12 dice may be perceived directly by those coming from the proper culture.
13 Similarly, for most people in contemporary Western culture, a computer
14 keyboard has an immediate property of writability (not necessary less im-
15 mediately present than the depressibility of the keys).

16 Of course, the meaning of the dice is not exhausted by its throwability:
17 it means different things, according as different faces with a different
18 number of eyes turn up, and in account of which kind of game it is
19 thrown. This is perhaps even truer of the different items used to play
20 chess. Saussure, it will be remembered, used chess as a ready analogy to
21 language, arguing that any odd set of buttons may be used to play chess,
22 as long as the rules specifying the possible movements of each buttons
23 were known, just as, in principle, any sound may stand for any meaning
24 in a language. Anything is a king, as long as it is permitted to move in the
25 ways a king moves, just as anything (with some exaggeration, no doubt)
26 may be an /a/, as long as it functions as an /a/ in the vowel system. This
27 may be true, but to someone knowing how to play chess, only a chessman
28 looking like the king immediately *affords* the kinds of movement that are
29 allowed to the king in the game of chess.

30 Deacon (1997: 41, 59) goes even further, comparing “rule-governed
31 games,” of which chess must be an instance, together with etiquette rules
32 and music, to language, while excluding “portraits,” claiming that the
33 former, but not the latter, have “symbolic reference.”⁴¹ In fact, if we sup-
34 pose “symbolic reference” to convey the general idea of something being
35 “about” something else, or, equivalently, to stand for something else,
36 then it makes much more sense attributing it to at least some instances
37 of animal communication, and certainly to pictures as used by human
38 beings, than to such things as etiquette, games, and music. Etiquette rules
39 and the rules defining games are not “about” anything at all: they impose
40 restrictions on the behavior allowed. As Deacon (1997: 61) claims about
41 laughter, it is certainly odd to say that etiquette has a meaning, at least in
42 the sense of reference. To shake hands (in a given context) means that

1 you greet somebody; to move a particular chessman means that the queen
2 takes up a new position causing perhaps a checkmate. As I understand
3 the term “etiquette rules” (but Deacon gives us no clue) is does not in-
4 volve something like shaking hands. I would describe this as an interac-
5 tive gesture carrying a meaning just as any other sign. Etiquette rules,
6 however, are those that tell us under which circumstances it is appropriate
7 to shake hands, and when it is not. In this sense, they impose restrictions
8 on the behavior allowed. Indeed, they determine the *cultural affordances*
9 of handshakes.

10 The case of chess, however, is more difficult to deal with. What makes
11 some pieces of wood or other material and a board into a game of chess
12 are the restrictions imposed on the permitted movements of the chessmen
13 and the consequences of certain chessmen taking up particular positions.
14 In fact, as Searle has observed, the rules of chess are not like traffic regu-
15 lations, applying to movements on a board which were hitherto unregu-
16 lated: the restrictions on movement create chess, but traffic regulations
17 do not create traffic. In other terms, the rules of chess are *constitutive*,
18 but the rules of traffic or only *regulatory*.⁴² Clearly, it could be argued
19 that the queen means “able to move in any straight direction as far de-
20 sired,” in a sense in which /a/ does not mean “low, frontal, sonorous.”
21 More to the point, perhaps, chess is really comparable to language at the
22 level of syntax (in Goodman’s sense of the properties of the sign vehicle),
23 that is, as something which may occupy certain positions and not others,
24 as well as something which has some invariant traits, and others that may
25 be exchanged freely. The chessman does not carry a meaning differentiat-
26 ed from its expression, as is the case with language and pictures. Again,
27 the chessman *affords* certain movements — but only in a given culture for
28 which chess is a cultural fact.

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

1 Clark's (1996: 48–49) observation that, in addition to the commonly ac-
2 cepted description of the series of moves made so far, there is also an “an-
3 notated record” in which one move may be characterized from the point
4 of view of one player as “a blunder” or “a bold move,” refers to different
5 intensional levels of description. It does not say anything particular about
6 chess a meaning resource: also a punch on the chin may be redescribed,
7 from the point of view of the agent or patient, as a victory or a defeat.

8 Searle (1995: 43) describes the constitutional rules giving rise to games
9 (and to institutional reality generally) using the formula “X counts as Y
10 in C.” His examples are such things as paper money and chess. To my
11 mind, we may very well say that a chessman (or a button having been
12 substituted for it on the board) *counts as* an item apt to move in certain
13 specified ways on the board. To say that an expression (of a word, a ges-
14 ture, a picture, and so on) counts as its content, however, is fairly mis-
15 leading. Signs may really be surrogates for things, in a way, but they ful-
16 fill different functions than the things themselves. They permit us to take
17 a stand on things, so as to chess, for the purpose of the Lifeworld, the
18 meaning of these things. No chessman, nor even a move by a chessman,
19 really counts as a statement modifying the meaning of the game of chess,
20 let alone that which is outside of the world of chess.

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

26

27

28 3.4. *Von Uexküll on how it feels to be a tick*

29

30 It has been suggested (notably by Smith and Varzi 1999) that the Life-
31 world, understood as above, is simply the niche, in the sense of (non-
32 Gibsonean) ecology, in which the animal known as the human being
33 stakes out his life (cf. Sonesson 2001a: 99). The niche, then, in this sense,
34 is the environment as defined *by and for* the specific animal inhabiting it.
35 In Husserlean language, the niche is *subjective-relative* — relative to the
36 particular species. The precursor of the niche, understood in this way, is
37 the notion of *Umwelt* introduced by von Uexküll, which is today the de-
38 fining concept of the speciality known as biosemiotics.⁴³

39 Uexküll's notion of meaning centers on the environment, the *Umwelt*,
40 which is differently defined for each organism (cf. Figure 5). As opposed
41 to an objectively described ambient world, the *Umwelt* is characterized
42 for a given subject, in terms of the features which it perceives (*Merkwelt*)

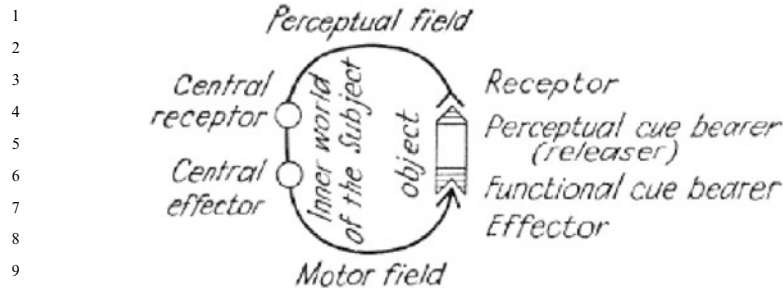


Figure 5. The model of the Umwelt according to Jakob von Uexküll

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

1 of meaning” (*Bedeutungslehre*). In fact, he opposes “animal reactions” to
2 “human responses.” Cassirer may be wrong in not seeing the similarity
3 between signs and other meanings (though he suggests it in passing using
4 the term *Vermittlung*), but he is quite right, I submit, in insisting on the
5 difference.

6 Very tentatively, let us suppose that, in the biosemiotic conception,
7 the features of the world observed by the animal correspond to the sign-
8 vehicle or expression (Peirce’s “representamen”); the object or referent
9 would then be that which causes these features to be present to the ani-
10 mal; and the Peircean interpretant or content would in turn correspond
11 to the pieces of behavior that tend to make up the reaction of the animal
12 to the features in question. There is no point getting lost here in Peircean
13 exegesis: if anything, we are faced with a “formal sign,” as conceived in
14 the Fonseca tradition. As we are using the terms, we would have some
15 kind of *mediation* (Cassirer’s *Vermittlung*), but not a sign.⁴⁴ However,
16 there are, as I will explain in the following, two differences between what
17 is happening in the *Funktionskreis* and what we have here defined as a
18 sign.

19 As Ziemke and Sharkey (2001: 709) point out, it is hard to find the
20 object of the sign, in the ordinary sense of its referent in the “outside
21 world.” What is for us, as observers, three cues to the presence of a mam-
22 mal, the smell of butyric acid, the feel of skin, and the warmth of the
23 blood, do not have to be conceived, in the case of the tick, as one single
24 entity having an existence of its own (a “substance,” in Gibson’s terms),
25 but may more probably constitute three separate episodes producing each
26 its own sequence of behavior. In fact, Ziemke and Sharkey go on to quote
27 an early text by von Uexküll, in which he says that “in the nervous sys-
28 tem *the stimulus itself does not really appear* but its place is taken by an
29 entirely different process” (my italics). Uexküll calls this a “sign,” but it
30 should be clear that it does not in any way fulfill the requirements of the
31 semiotic function. Indeed, expression and content are not differentiated,
32 already because they do not appear to the same consciousness. The buty-
33 ric acid is there to the tick; the mammal is present only to us. In addition,
34 it does not make sense to say that either the butyric acid or the mammal
35 is in focus or not. Nor is there any sense in determining whether the buty-
36 ric acid or the mammal is directly given.

37 What is lacking is real Thirdness: the reaction to the primary reaction,
38 that is, the reaction that does not respond to a simple fact (Firstness), but
39 to something that is already a reaction, and thus a relation (Secondness).
40 Without having to enter into the earlier discussion of differentiation, we
41 see that, even from a strictly Peircean point of view, there is no Thirdness
42 for the tick: it does not respond to any relationship, since it is not aware

1 (even in the most liberal sense of the term) of any second term (the mam-
2 mal) to which the first term (the butyric acid) stands in a relation.

3 In fact, things are even more complicated. In a true sign relation, the
4 mammal is not really the object, in the Peircean sense, for which the bu-
5 tyric acid is the representamen. Or, to be more precise, it is not the “dy-
6 namical object.” At the very most, it is the “immediate object.” It will be
7 remembered that, in Peirce’s conception, while the “immediate object” is
8 that which directly induces the sign process, the “dynamical object” is
9 something much more comprehensive, which includes all those things
10 which may be known about the same object, although they are not pres-
11 ent in the act of inducing. Indeed, the “dynamical object” is that which
12 corresponds to the potentially infinite series of different interpretants re-
13 sulting from the same original immediate object. It should be clear that,
14 for the tick and similar beings, there could be no distinction between di-
15 rect and dynamical object, because there is no room for any further devel-
16 opment of the chain of interpretants. In this sense, Deacon’s (1997: 63),
17 idiosyncratic reading of Peirce, according to which only signs such as
18 those found in human language (his “symbols”) give rise to chains of in-
19 terpretants seem to have some justification — in reality, if not in Peircean
20 theory (cf. Sonesson 2003a). This is true, however, only if one does not
21 separate indexicality and indexical signs, or iconicity and iconic signs.

22 23 24 3.5. *From Umwelt to Lebenswelt by means of the thematic field*

25
26 As I have often pointed out, to account for the distinction between the
27 “immediate object” and the “dynamical object,” we need the concept of
28 *ground*.⁴⁵ The butyric acid, the hairiness, and the warmth form the imme-
29 diate objects of the tick, the mammal as such is the dynamical object. The
30 difference, however, is that there is no way that the tick, unlike human
31 beings, may learn more about the “dynamical object” than that which is
32 given in the immediate one. Meaning here appears as a kind of “filter”: it
33 lets through certain aspects of the “real world” that, in its entirety, is un-
34 knowable, though less so for human beings than for ticks. The Kantian
35 inspiration of von Uexküll is of course unmistakable. Indeed, the filter
36 model can best be expressed in terms of another Kantian philosopher,
37 Karl Bühler, who talked about the principles of “abstractive relevance”
38 and “apperceptive supplementation,” where the first accounts for the ne-
39 glect of such physical properties which are not endowed with meaning,
40 while the second explains the projection of properties not physically pres-
41 ent in perception to the meaningful experience. In fact, Bühler tried to
42 explain such linguistic phenomena as Saussure and Hjelmslev described

1 in terms of “form” as opposed to “substance”: that certain properties of
2 the physical sound may vary a lot without the units of meaning (the pho-
3 neme, the word, etc.) being changed; and that other properties that are
4 not physically present may yet be perceived, because they are expected in
5 the context. It can now be seen that Bühler’s principles of abstractive rel-
6 evance and apperceptive supplementation go much further than the sign
7 (Figure 3). They have been found in the studies of the systems of cooking
8 and clothing realized by Lévi-Strauss, Barthes, and others (as demon-
9 strated by Sonesson 1989).

10 The same general idea is found in the work of the cognitive psycholo-
11 gist Fredrick Bartlett (1932: 32, 44), who introduced the concept of
12 scheme to account for our “*effort after meaning*.” Bartlett used the notion
13 of scheme in his studies of memory, in order to explain the successive
14 modifications that a story stemming from an alien culture was subjected
15 to, as the experimental subjects were asked to recount it from increasing
16 temporal distances; but also in order to explain how one and the same
17 drawing was transformed in later reproductions from memory, in differ-
18 ent ways according as it had been labelled the first time as a pair of
19 glasses or as a dumbbell. The scheme is to Bartlett “the setting which
20 makes perceiving possible,” and, more precisely, it is “an active organiza-
21 tion of past reactions, or of past experiences, which must always be sup-
22 posed to be operating in any well-adapted organism’s response,” with the
23 result that responses do not occur in isolation, but “as a unitary mass”
24 (1932: 201). The last definition (in spite of introducing a socio-historical
25 dimension) is reminiscent of Uexküll’s notion of *Umwelt*.

26 This notion of schemes was used before Bartlett by Janet and Halb-
27 wachs, and it has been taken up later by Piaget, as well as by the phenom-
28 enologist Alfred Schütz. It has of course also become a fundamental con-
29 cept in cognitive psychology, linguistics, and artificial intelligence, but
30 perhaps sometimes with a lower intentional depth. Elsewhere, I have
31 summarized the results of these studies in the following way (Sonesson
32 1988): a scheme is *an overarching structure endowed with meaning, which,*
33 *with the aid of a relation of order, in the form of syntagms and/or para-*
34 *digms, joins together a set of in other respects independent units of mean-*
35 *ing*. Among its further properties, two, in particular, are to be noted
36 here: a) schemes contain principles of relevance which extricate from
37 each ineffable object such features as are of importance relative to a
38 particular point of view (this is Piaget’s assimilation, and the principle of
39 abstractive relevancy, according to Bühler 1934); b) schemes also supply
40 properties missing from the ineffable objects, or modify the objects so as
41 to adapt them to the expectancies embodied in the schemes (this is an-
42 other aspect of Piaget’s notion of assimilation, and what Bühler terms

1 apperceptive supplementation; also, it is involved in what Halbwachs and
2 Bartlett call reconstruction).⁴⁶

3 Returning to modern day biosemiotics, it can be easily shown that
4 what these authors are involved with has nothing to do with meaning as
5 sign function, but very much concerns meaning as relevance, organiza-
6 tion, configuration and/or filtering. In their early joint paper, Emmeche
7 and Hoffmeyer (1991: 4), point out, in criticizing the concept of informa-
8 tion in information theory, that they are interested in “a *difference that*
9 *makes a difference* to somebody.” They go on to say that living beings
10 “respond to *selected* differences in their surroundings” (their italics in
11 both cases). The formulation clearly invokes relevance, and even some
12 kind of filtering device. Later on in the paper, however, when the Peir-
13 cean sign concept is introduced, the DNA-sequence of the gene is said
14 to be the representamen, the protein its object, and the interpretant the
15 cellular-biochemical network. It is difficult to detect any sign function
16 here, in the sense in which we have defined it. According to our authors,
17 the contribution of Peircean semiotics is to show us that “the field of ge-
18 netic structures, or a single gene, cannot be seen in isolation from the
19 larger system interpreted” (1991: 34). This certainly suggests meaning as
20 a whole or a configuration. In a later paper, Emmeche (2002) sets out to
21 show that in the living being function and meaning are the same. This can
22 also be demonstrated, because Emmeche understands meaning in the
23 sense of function: the relation of the part to the whole. But even in this
24 article, there are traces of the filtering concept of meaning: we learn that
25 “the whole operates as a constraint.” Indeed,

26
27 Saying that *cytochrome c* means something to the cell is the same as saying that it
28 has a function. It is not just any molecule. We could well synthesise small proteins
29 and artificially introduce them into the cell. They would be without importance or
30 they would be dysfunctional or, with certain fortuitous strokes of luck, they would
31 actually fulfill some function in the cell. (Emmeche 2002: 19)

32
33 This implies that the meaning of the enzyme “is structural” in the sense
34 that “the cell’s molecules form a system of dissimilarities (like the ele-
35 ments of language in Saussure)” (Emmeche 2002: 20). This is of course
36 true to the extent that there are relevancies in cells, in particular if these
37 relevancies result from a system of oppositions, like those of Saussurean
38 language. From this point of view, everything that is in the cells is also
39 in language. But the opposite cannot be true. There is, of course, no semi-
40 otic function as we have defined it.

41 It may be useful to distinguish two elements which always go together,
42 both in Uexküll’s notion of *Umwelt* and in the concept of scheme (as dis-

1 cussed in Sonesson 1988; 2003a): *organization*, which may derive from
2 structure or configuration, and *relevance*, which may or may not be a re-
3 sult of organization. It is clear that in language, as Saussure understands
4 it, relevance is a result of organization, and more exactly of structure. In
5 Uexküll's notion of *Umwelt*, it rather seems to be a product of the config-
6 uration.⁴⁷ Lacking the competence, I prefer not to pronounce myself on
7 the case of genes.

8 It is useful also to distinguish relevance from filtering, although they
9 have something in common: the picking up a limited set of features from
10 the totality of the environment. However, *relevance*, strictly speaking,
11 does not exclude anything: it merely places some portions of the environ-
12 ment in the background, ready to serve for other purposes. Thus, in the
13 case of language, properties that are not relevant for determining the
14 meaning of the words and the sentence, still may serve to inform about
15 the dialect, or even identify the person speaking (Hjelmslev's "connota-
16 tional language"; cf. Sonesson 1989). Indeed, relevance lets the difference
17 between "immediate object" and "dynamical object" subsist, in the vague
18 sense which they retain in the "scholastic" interpretation of Peirce (see
19 above): that which is directly given, in contrast with that which is poten-
20 tially given for further exploration. Thus, the principles of "abstractive
21 relevance" and "apperceptive supplementation" still apply. In contrast,
22 *filtering* simply crosses out that which is not let through the filtering
23 device.

24 The difference between relevance and filtering no doubt has something
25 to do with the capacity to be aware of the borders of one's *Umwelt*. It re-
26 quires some kind of "metacognition," or, as cognitive scientists are want
27 to say, "a theory of mind." To the tick, to paraphrase Wittgenstein, the
28 limits of its language are the limits of its world, but not so (in spite of
29 Wittgenstein) to human beings. Or rather, the limits of our *Umwelt* are
30 not the limits of your *Lebenswelt*.

31 According to the phenomenologist Aron Gurwitsch (1974a), we may
32 talk about different sociocultural lifeworlds, apart from the common
33 structures of the Lifeworld, which we all share as human beings. Such
34 a socio-cultural Lifeworld would then correspond to a culture, in the
35 sense of cultural semiotics. However, the phenomenologist Alfred Schütz
36 (1967) suggested there are really "multiple provinces of meaning," such
37 as dreaming, religious experience, the art world, the play world of the
38 child, and that esoteric practise we know as science. The peculiarity of
39 the Lifeworld, in this context, is that it offers access to the other worlds,
40 and is accessible to all of them. In this sense, the human *Lebenswelt* is dif-
41 ferent from the *Umwelt* of other animals. Or at least it has the capacity
42 for being different.

1 In Peircean terms, human beings may reach for the dynamical objects
 2 beyond the immediate ones. They may try to transform Nature into Cul-
 3 ture. However, as Wittgenstein observed, even if we had a common lan-
 4 guage game, we would perhaps not have so much to talk about with a
 5 lion. The lion, presumably, does not try to go beyond his own *Umwelt* to
 6 grasp the properties of the objects that lie behind it. There is, so to speak,
 7 no “dynamical object” beyond the immediate one to the lion. And this is
 8 why there may not be much hope for us ever being able to discuss semiot-
 9 ics with a chimpanzee.

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

18 It might therefore be said that what most perspicuously differentiates
 19 the tick from the human being (without prejudging for the moment on
 20 the question where the exact border is to be placed) is the structure of
 21 the field of consciousness: in Gurwitsch’s (1957, 1964, 1985) terms, hu-
 22 man consciousness is made up of a *theme* that is the center of attention,
 23 a *thematic field* around it consisting of items that are connected to the
 24 present theme by means of intrinsic links permitting it to be transformed
 25 into a theme in its own right, as well as other items present “at the *mar-*
 26 *gin*” at the same time, without having any other than temporal relations
 27 to the theme and its field.⁴⁸ The tick of course has access neither to the
 28 thematic field nor to the margin. In a way, this is simply another way of
 29 saying that the tick cannot reach beyond the immediate object. But Gur-
 30 witsch’s analysis breaks up that of Peirce: it implies that, not only is there
 31 no way for the tick to “go on from here” (the Husserlean etcetera princi-
 32 ple), its experience of the here and now is also very limited. In other
 33 words, there is no real “immediate object” to the tick, not only because
 34 it is not opposed to a future more extensive dynamical object, but also be-
 35 cause even in the here and now, what is immediately experienced does
 36 not appear as a thematic structuring, or perspective, on such a dynamical
 37 object.

38 I have suggested, then, that an important difference between human
 39 beings and (some) other animals consists in the thematic structure of
 40 consciousness, or, in other words, the function of attention.⁴⁹ As noted
 41 above, there really are two differences between the way in which ticks
 42 and other lower animals have access to meaning and the human way.

1 The first of these is the thematic structure: there is no immediate object,
2 because there is no dynamical object in relation to which it may be seen
3 as an adumbration. But there is more to it: there is no representamen, ei-
4 ther, if we identify this term with expression, because no distinction can
5 be made between such a representamen and the object, either immediate
6 or dynamic.

7
8
9
10 3.6. *Common sense psychology and intentionality*

11
12 Taking into account the Fonseca tradition, we earlier noted that one kind
13 of mediation (for which I prefer to reserve the term “sign”) consists of a
14 signifier (expression) which has to be perceived as such in order to usher
15 into the perception of the corresponding signified (content); and another
16 one (which following the Brentano-Husserl tradition, I prefer to call in-
17 tentionality) which may consist in a “signifier” which is not ordinarily
18 perceived as such but still somehow serves to mediate the perception of a
19 “signified” (where it may be better to avoid terms as these, ordinarily as-
20 sociated with the sign function, and simply talk about an item ushering
21 into another item). It will be remembered that, according to von Uexküll,
22 “in the nervous system *the stimulus itself does not really appear* but its
23 place is taken by an entirely different process” (my italics). As human
24 beings, as Husserl and Gibson have insisted, we are alternatively con-
25 fronted with the-cat-from-one-side, the-cat-from-above, the-cat-from-the-
26 front, etc., but what we really *see* is all the time the same invariant cat.
27 The tick smells the same invariant butyric acid, period. In the world of
28 the tick, there are no signs, as distinct from the world itself. Differentia-
29 tion has not even started. But there is no noematic matrix either, properly
30 speaking. The noematic matrix involves seeing the whole of the thing, but
31 from a particular point of view. To the tick, the thing and the point of
32 view cannot be separated. In this respect, even intentionality is beyond
33 the ability of the tick.

34 Intentionality as it is understood in the Brentano-Husserl tradition sim-
35 ply involves the directedness of consciousness. Every act of consciousness
36 is about something “in the world,” in a more immediate sense than which
37 this is true about signs. The relation between consciousness and the thing
38 that is the object of consciousness may be called an *intention*. An inten-
39 tion in this sense is not a purpose, although a purpose is a kind of (very
40 complex) intention. Nor should an intention, in this particular sense, be
41 confused with an *intension*, in the sense in which this term is opposed to
42 extension.⁵⁰ And yet, as a linguistic phenomenon, intensional contexts,

1 also known as propositional attitudes, seem to have something to do with
2 intentions.

3 In Anglo-Saxon philosophy and contemporary cognitive science, the
4 notion of common sense psychology, together with naive physics, corre-
5 spond to the Lifeworld, or the *commens*, which we have presented in this
6 section. However, it figures there mainly as a problem, concerning how (if
7 at all) it might be mapped onto scientific psychology. For this purpose,
8 common sense psychology is often formulated in terms of propositional
9 attitudes. In linguistic terms, propositional attitudes are expressions be-
10 ginning with “I think, believe, imagine, etc. that p.”⁵¹ More generally, if
11 someone is said to have a belief that p, then he may be said to have a
12 propositional attitude with reference to the content p (cf. Bermúdez
13 2005: 244). Since the verbs used in the formulation of propositional atti-
14 tudes are by definition mental descriptions, it would seem that they
15 should correspond to intentions. However, if an intention is the fact of
16 consciousness being directed to something in the world, it seems that the
17 object of an intention is a thing (a “substance” or something comparable
18 to a substance such as a nominalized property), but the object of a prop-
19 ositional attitude is a state of affairs (corresponding to a clause).

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

34 We are here at such a subtle level of phenomenology that it is all too
35 easy to go wrong. If the sign consists of two objects, the expression and
36 the content, then it seems that the intentionality of the sign will be di-
37 rected most immediately to the expression, not as a noema, but as the X
38 that is at the center of the noematic matrix. But the intention does not
39 come to a close there. It goes on to the indirectly given object, which is
40 the theme of the sign, the content. Within the content, however, it may
41 stop at the noema of content (also known as the intension), or go on to
42 the center of the noematic matrix (the extension).⁵²

1 There is something curious, however, in identifying common sense psy-
2 chology, if it comes in the guise of a set of propositional attitudes, with
3 what, following Husserl, Gibson, Peirce, and others, I have characterized
4 as the Lifeworld, the world taken for granted. If anything, the Lifeworld
5 is implicit, sedimented knowledge. In Husserlean terms, a propositional
6 attitude is a “judgment,” which stands in direct opposition to the so-
7 called ante-predicative experience, which is at the origin of the structures
8 of the Lifeworld (cf. Husserl 1939). In contemporary cognitive science, is
9 has been argued that the domain claimed by common sense psychology is
10 really made up of such things as frames and routines (cf. Bermúdez 2005:
11 172). This does not seem to be very different from my old argument
12 against Searle (Sonesson 1978): you do not see the marks on the desert
13 sand as writing because you think someone has had the purpose for you
14 to see it as writing, but, on the contrary, because you see it as being a typ-
15 ical instance of writing, you take for granted that there must be some-
16 body (if it can only by God, a ghost, and some other spirit, so be it) that
17 has had the purpose for you to see it as writing (or more, simply, who has
18 brought about that these marks have the semblance of writing, an act
19 which is normally made on purpose).⁵³ This is a scheme of interpretation,
20 sedimented from earlier instances of experience. In this sense, it goes back
21 to earlier judgmental acts, but it normally operates as a matter of course.

22 In his more recent work, Searle (1995: 24) similarly rejects the idea of
23 mutual knowledge (of the type “I believe that you believe that I believe
24 . . .”), instead arguing for what he calls “we intentionality” or “collective
25 intentionality” being a biological primitive, not reducible to a combina-
26 tion of individual intentions.⁵⁴ This is an excellent point, but Searle only
27 applies his insight to what he calls “institutional facts,” identified with so-
28 cial reality. Clearly, the Lifeworld in its entirety reposes on collective in-
29 tentionality in this sense. Yet, this is apparently not what Searle wanted
30 us to understand: according to his idea of “our contemporary world
31 view,” the physical world is not to be understood in terms of “naïve” or
32 “ecological physics,” but as “natural concepts” which are “language-
33 independent” and even “mind-independent” (Searle 1995: 33, 61). This
34 is certainly very different from both Husserl and Gibson, both of whom
35 tend to reduce the Lifeworld to that of everyday physics, although none
36 of them would probably describe the latter as independent of mind.⁵⁵

37 There is however something different in Searle’s new conception, which
38 in some ways is more similar to the Lifeworld, that is, the “background,”
39 defined as “the set of nonintentional or preintentional capacities that en-
40 able intentional states of function” (Searle 1995: 129). It is important to
41 note that, in this definition, Searle takes “enable” to describe a causal,
42 not a logical relationship, as would be the case in propositional attitudes,

1 which Searle seems to identify with intentions. Searle also claims that
2 intentional states are at least potentially conscious, which is not true of the
3 background. The “functions” of the background, however, are reminis-
4 cent of those of the Lifeworld: the background enables linguistic and per-
5 ceptual interpretation, such as adapting a word with a single meaning to
6 different circumstances, or finding the duck or the rabbit in the Wittgen-
7 steinian figure;⁵⁶ it structures consciousness, so that even in the Mexican
8 jungle, we can find the sky and the earth; it organizes sequences of expe-
9 rience into dramatic categories; it structures our preparedness in relation
10 to the activity to which we devote ourselves, as for instance the readiness
11 for other skiers becoming potential dangers when we are skiing; etc.
12 These are obviously things taken for granted, which we have meet before,
13 in the form of the typifications of the Lifeworld, its temporal horizons,
14 the laws of ecological physics, the affordances, the structure of the field
15 of consciousness, and so on. It is not clear, however, why these phenom-
16 ena are said not to be intentional. Clearly, in the sense in which intention-
17 ality means directedness to an object of the world, they remain inten-
18 tional, whether we are actively entertaining them or not. This is why
19 Husserl would count them as instances of passive intentionality. As all
20 sedimented acts, they must be capable of attaining consciousness, at least
21 in a phenomenological analysis. And while they may be, in some sense,
22 causal (which to Searle means “neurophysiological”), it is not at that
23 level that they form the background of consciousness, that it to say, the
24 Lifeworld.

27 3.7. Summary

29 In this section, I have taken pains to distinguish two kinds of mediation,
30 one, for which I prefer to reserve the term “sign” consisting of a mediator
31 (signifier/expression) that has to be perceived as such in order to usher
32 into the perception of the corresponding mediated item (signified/
33 content); and another one (which following the Brentano-Husserl tradi-
34 tion, I prefer to call intentionality) that consists of a mediator that is not
35 ordinarily perceived as such but still somehow serves to bring along the
36 perception of some kind of mediated item. Meaning is much broader
37 than sign: it is given already in perception, notably in the form of index-
38 icalities or neighborhood relations, or in the form of iconic grounds, or
39 identity relations. In this general sense, meaning may be understood as a
40 way of picking up selected information from the real world, either by
41 means of filtering out everything else, or by organising the environment
42 into a thematic hierarchy. The first case is well known from the work of

1 Uexküll and his followers in biosemiotics. The second case is more typi-
2 cal of the human Lifeworld. The sign, however, is a peculiar creature of
3 the Lifeworld: it supposes the concomitant awareness of at least two
4 items, which are *subjectively differentiated* from each other, while one of
5 them is *directly given* but *not thematic* and the other *indirectly given* and
6 *thematic*. It typically also supposes an (potential) awareness of the differ-
7 ence between the sign and the world, between (to partially paraphrase
8 Peirce) the immediate and the distal content. Among meanings other
9 than signs, we may distinguish those that are, in a manner of speaking,
10 horizontal to the Lifeworld, such as inferences or abductions, and those
11 which are vertical to this same world, that is, the intentional relationships
12 connecting subject to their experiences. Intentionality is much like propo-
13 sitional attitudes, but while the former description the direction of a consci-
14 ousness to an object, the latter is a description of the state of affairs
15 arising from this connection. Signs are, from this point of view, double
16 intentional relationships. While the noema in which an object is given is
17 thematic in relation to other noemata, it is non-thematic when compared
18 with the noematic center; moreover, in a sign, the noematic center of
19 the expression is non-thematic in relation to the content. However, propo-
20 sitional attitudes or collective intentionality do not seem to be able to
21 account for the passive nature of Lifeworld meaning. Nor can this mean-
22 ing, as meaning, be properly explained in terms of neurophysiological
23 causality.

24
25

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

27
28

29 There are many excellent reasons for taking exception to the program for
30 “semiology” proposed by Saussure (cf. Deely 2001: 669), but the work of
31 Saussure also contains at least two genuine insights (apart from the
32 notion of pertinence mentioned above), although presented in ways that
33 unnecessarily make them appear contradictory to each other. The first in-
34 sight involves the basic importance of society (in one or other sense) to
35 the existence of signs (and even some other meanings, such as the affor-
36 dances of chess). This insight is however merely proclaimed, but hardly
37 elaborated, by Saussure. The second insight consists in the system charac-
38 ter of (some) signs, most notably linguistic signs. Although system char-
39 acter can hardly be understood otherwise than as a social fact, it has
40 been used, not without some foundations in Saussure’s work (at least as
41 posthumously presented by his students), to claim that language (and
42 thus presumably other signs) can be analyzed as purely formal items,

1 without any recourse to social context. This is the basis of linguistic struc-
2 turalism, continued, in some respects, but essentially distorted, by the
3 variegated versions of Chomskyan grammar.

4 From the point of view of phylogeny and ontogeny, I believe, there are
5 in fact two further “ages of understanding” going beyond the sign func-
6 tion. Both have society, in the general sense of the coming together of
7 several individuals, as a precondition. In one case, this gives rise to the
8 system, in which signs define each other mutually, and which is shared
9 by many individuals. In the other case, organism-independent representa-
10 tions are what come into being. Society here may seem less necessary, but
11 it is still required for relaying the interpretative procedures that give ac-
12 cess to the artifacts. In a very general sense, the artifact is to the individ-
13 ual what the other individual is in the first case. Specifically, however, the
14 cases are very different.

15 Signs are often thought of as being objects the business of which it is to
16 circulate through the world from a sender to a receiver, but it is impor-
17 tant to realize that signs also have the function to conserve meaning, in
18 time as well as in space. In this sense, signs are memory devices. It even
19 seems that those who talked about signs during the early “Modern Age”
20 (contemporary with Deely’s late “Latin Age”), such as Hobbes and Leib-
21 nitz, conceived of signs mainly as markers (*notae*) for permitting us to re-
22 member earlier thoughts, that is, mainly as messages to ourselves (cf.
23 Dascal 1978, 1983, 1998). But even a culture may be said to take notes
24 for its own use, in which case we are confronted with what Lotman
25 (1979) called “culture as collective intelligence,” or, perhaps better, in an
26 earlier terminology, as “collective memory” (in these sense of Halbwachs
27 and Bartlett). Signs as material bodies serving to remind and to classify
28 are central to the thinking of Enlightenment philosophers and their fol-
29 lowers in the ideological school; they reappear much later, in Husserlean
30 phenomenology, as well as in the sociology and psychology of Husserl’s
31 near contemporaries, such as Janet, Halbwachs, and Bartlett.

32 The term “markers” primarily suggests some kind of organism-
33 independent artifacts serving as signs, but socially shared inner represen-
34 tations may no doubt also be involved. In the real historical Lifeworld,
35 however, the term “markers” better describes the function of signs during
36 the high Latin Age, which, whether they consisted in books or in imagi-
37 nary buildings in which the arguments of a discourse were “placed,” sim-
38 ply served to remind the speaker of what he should be thinking of. Books
39 were not alternatives to memory, but “notae” used to stimulate living
40 memory (cf. Draaisma 2000: 33). Since then, books and other embodied
41 artifacts have (what Plato prematurely feared) come to occupy much of
42 the place earlier ruled by individual memory.

1 If indeed mental images and (personal) memories are signs, as Piaget
2 suggests, then they are certainly less useful for both the purpose of circu-
3 lation and accumulation than language, pictures, and even gesture. In-
4 deed, it may seem that it is because meaning may be conserved, in space
5 and in time, that human culture, with all its variety of socio-cultural life-
6 worlds, becomes possible. In some ways, signs may be persistent enough
7 once they are known by more than one individual, and may be accessed
8 both by the one creating them and one other person, as happens with ges-
9 ture and spoken language. But the sign character, in the sense of the ca-
10 pacity for circulation and accumulation, becomes even more pronounced,
11 once the sign has acquired a more enduring material embodiment, as is
12 the case with drawing and written language. It has been suggested by
13 Merlin Donald (1991, 2001) that there are several phylogenetical discon-
14 tinuities (which can be extended ontogenetically, as suggested by Zlatev
15 2002, 2003, in press a, in press b; Zlatev, Persson, and Gärdenfors 2005)
16 in the development that leads from non-human animals to human beings,
17 all involving the acquirement of a distinct kind of memory, considered
18 as a strategy for representing facts. In this story, the picture represents a
19 decisive, final step.

20
21

22 4.1. *Wine, women, and words. Also about mind-(in)dependent being*

23

24 In the beginning of this essay, I hinted at a structuralist argument, ac-
25 cording to which the reduction of all meaning to signs (as in Poinot,
26 Peirce, Deely, and in Locke's final chapter) or to ideas (as in all but the
27 first chapter of Locke and in most of the ideologues' writings) in the end
28 reduce to one and the same, since no distinction can be made. It is signif-
29 icant that the notion of "representation," so central to "classical" cog-
30 nitive science, could just as well be interpreted, observing the way it is used,
31 along the lines of ideas as on those of signs. But structuralism is not
32 enough: in my critique of the critique of iconicity (Sonesson 1989), I re-
33 lied heavily on the fact that, as it is experienced, similarity is not a sym-
34 metric relation, but depends on something being compared to a standard.
35 Therefore, it is not the same to use the sign as a model for everything else,
36 as to use the idea as an all-inclusive model. The model, or the standard, is
37 projected into that which is compared to it. However, as long as these no-
38 tions are not defined, but we rely on their unexplicit understanding
39 within ordinary language, it is not easy to determine what the difference
40 is.

41 Whatever else the sign is, nevertheless, it is clear that, to Poinot,
42 Peirce, and Deely, it is some kind of relation. To call something an idea,

1 or perhaps a bundle of sense data, or the contents of consciousness, on
 2 the other hand, does not directly suggest any kind of relationship. Strictly
 3 speaking, of course, you cannot entertain an idea without the idea being
 4 *about* something (that is, it is an intentional term), and the sense data or
 5 contents of consciousness are effects produced within an organism as a re-
 6 sponse to something “out there.” Both the phenomenological notion of
 7 intentionality and the *Umwelt* of von Uexküll are meant to overcome the
 8 limitations of this view. There is not something “inside” which is gratui-
 9 tously coupled with something “outside” by means of a reference. That
 10 which is “inside” is already a reaching out to the “outside” (it is “tran-
 11 scendent,” in Husserl’s terms). What is “inside” is a relation pointing
 12 “outside.” If this is what Deely means in opposing “ideas” and “signs,”
 13 I can certainly agree with him, even if, in order to make distinctions
 14 within the kinds of relations experienced by the mind, I would like to use
 15 the terms meaning or semiosis for this general notion and reserve the term
 16 sign for a more specific type of relation.

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

40 The further properties which these things acquire “as they come to
 41 exist within the mind” (Deely 2001: 351) are “second intentions,” which
 42 appears to make up the essential part (at least to the scholastics) of mind-

1 dependant being. Nevertheless, according to Deely, “second intentions”
2 can become part of “actual existence,” that is, of mind-independent be-
3 ing. For someone to be a judge, a priest, or a teacher, he must first be
4 someone who exists. Hence the quality of being a judge, a priest, etc., is
5 a second intention, and thus, part of mind-dependant being. But, apart
6 from these properties belonging to the man as part of his individual be-
7 ing, they are “exercised not only subjectively but also in the objective
8 order”:

9
10 According to their being in terms of the *ens reale/ens rationis* distinction, they are
11 cognition-dependant characteristics; yet they belong to the judge in his actual *ob-*
12 *jective* existence as a functioning member of society. (Deely 2001: 353)

13
14 And so does the belonging of somebody to specific cultural groups such
15 as Christians, Muslim, New Age, etc., Deely goes on to say. Within *ens*
16 *reale*, we thus seem to have recuperated not only the general structures
17 of the Lifeworld, but also the different soci-cultural lifeworlds (or *Umwel-*
18 *ten*, as Deely says). In the classification on the next page, Deely (2001:
19 354) also lists as *ens rationis* able to transfer to the domain of *ens reale*
20 such “cultural identities” as “writing material, book, statue,” as well as
21 “estate, guildhall, commons, prison, inn, etc.” This seems to bring us
22 back to what I earlier, in an extension of Gibson, called the “cultural
23 affordances” found for instance in the game of chess. But there is an am-
24 biguity here: “writing material,” if it implies such things as “pen” and
25 “paper” is comparable to “inn,” in the sense that certain “physical” con-
26 figurations identify something as being a pen or not a pen, a paper or not
27 a paper, an inn or not an inn, etc. But “writing” is something else: it is a
28 realisation of a system of signs. To identify something as a “book” cer-
29 tainly meant very different things in Antiquity, in Ancient China or Mex-
30 ico, and at present. But most books also contain (at least some specimens
31 of) signs known a writing. As for a statue, to identify is as such may only
32 mean to see, as some people have claimed about the Berekhath Ram fig-
33 ure, that it is a piece of stone modified by purposeful actions executed by
34 human beings; but to the extent that it also means identifying the Bere-
35 khath Ram figure as the semblance of a woman, the identification of the
36 piece of stone as a sign is implied.

37 However subtle the scholastic scheme of interpretation, it seems to me
38 that other distinctions have to be made. About the inn and the pen, we
39 may say what Searle (1999: 154) observes (in passing, unfortunately)
40 about the chair and the knife, that their capacity to perform the particular
41 function is “built into their physics.” Searle opposes this condition not
42 only to language, but also to money and (in other passages) to chess.⁵⁸ I

1 have already argued above, against Searle as well as Saussure and Dea-
2 con, that chessmen are more similar to the chair in this respect, and so is
3 money, as well shall see shortly. Indeed, something is a chair to the extent
4 that it possesses properties that are capable of going through the “filter”
5 which is the concept “chair.” The only real difference between chairs and
6 knives, on the one hand, and chessmen and money, on the other hand, is
7 that the latter only serve their function in very limited domains of the
8 Lifeworld, chess and the exchange of goods, respectively. Unlike signs,
9 chairs and chessmen are not given a materiality just to carry a message.
10 Chessmen are instruments, which serve a purpose, though only on the
11 chessboard.

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

35 In an early work, Dan Sperber (1982) has taken exception to these par-
36 allels, arguing that, while circulation is a constitutive factor of the kinship
37 system, it is only an accidental property of language, which is essentially a
38 repertory of messages; and when information has circulated for a suffi-
39 cient time, we will all be in possession of it, but a woman or a horse
40 which is exchanged is lost for the donor; and while language signifies by
41 means of a code, women only acquire meaning by means of the attention
42 being directed to them.⁶⁰ It is easy to agree with the general drift of

1 Sperber's argument, but sometimes he is widely off the mark. To begin
2 with, a language that does not circulate (i.e., is not used in any acts of
3 communication) is not much of a language; in fact, it is what we call a
4 *dead* language (like Latin, or Hebrew until it was reborn). On the other
5 hand, the circulation of women is certainly not constitutive of *women*. In
6 fact, I think that, in the kinship system, women do not signify at all; it is
7 the *act of exchanging* them that carries meaning. And this is certainly a
8 difference to the exchange of signs, in which the latter carry at least the
9 primary sense, which the exchange serves to convey. In fact, it is easy to
10 imagine a way in which a woman, arriving from one tribe to another,
11 does carry meaning in herself: speaking another language, having differ-
12 ent customs, etc., she may appear as a "non-text" (that is, as *Alius*,
13 stranger), to the members of the receiving culture.⁶¹ Indeed, she may
14 even carry meaning as the individual person she is: even after reducing
15 the message to make translation possible, as Lotman (1979: 91) so nicely
16 puts it, the message may still contain indications for reconstructing the
17 personality of the other (cf. Sonesson 1987, 1992a: 91). All these terms
18 of course refer to "second intentions," because they ascribe properties to
19 the woman (or "predicate" them of her).

20 Suppose, however, that it is really the woman (or, more generally, the
21 mate) as such which is the message. This would presumably make her
22 into a kind of "natural meaning," in Grice's sense, similarly to the way
23 in which red spots mean measles, or clouds mean rain, as opposed to the
24 "non-natural meaning," epitomized by language (and, I suppose, money).
25 In this view, there is an identity between cause and expression, on the one
26 hand, and effect and content, on the other hand, the cloud being both the
27 cause and the expression of the rain; or between cause and content, on the
28 one hand, and effect and expression, on the other hand, the read spot be-
29 ing both the expression and the effect of measles. Non-natural meaning,
30 as in language, on the other hand, relies, in the conception of the Gri-
31 ceans, on the recognition of someone having the purpose to communicate
32 something, on this purpose being recognized, and so on. But what would
33 the woman mean in this case? I suppose something like "effect of an ex-
34 change having taken place." This would then seem to be an instance of
35 those strange *ens rationes* that end up being also *ens reale*. One may still
36 doubt that it is a sign.

37 Interestingly, however, in his later manifestation as a Gricean, Sperber,
38 writing together with Deirdre Wilson (Sperber and Wilson 1995 [1986]:
39 53–54), denies the existence of two kinds of meaning: there is a contin-
40 uum between that which Grice calls natural and non-natural meaning.
41 In doing so, however, Sperber & Wilson seems to reduce all meaning to
42 "relevance," without there being any principle to the relevance, which

1 amounts to some kind of “natural meaning” which includes the manifes-
 2 tation of purpose. On the contrary, I think there must be a principle de-
 3 termining what is relevant also in what Grice (1989) would call natural
 4 meaning: the cloud only means rain to those who know about the rela-
 5 tionship between clouds and rain, and who for reason of the Lifeworld
 6 choose to ignore other causes. Red spots of a certain type only mean mea-
 7 sles to those who know about the symptoms of measles, and who do not
 8 care to take other causes or effects into account. The woman means “ef-
 9 fect of an exchange with another tribe” only to those who are familiar
 10 with this kind of exchange pattern, and who think this is the only (or
 11 most) relevant aspect of the woman in question.

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

20 Communication in the material sense (in the sense of the current spatial
 21 metaphor) really implies that something which leaves one place is not
 22 there any more when it arrives at a second place: this is true of the train,
 23 as well of the letter which it may transport, and even of content of the lat-
 24 ter, but not of course of the units of which the message is made up. The
 25 circulation of women (and of mates generally) as well as of commodities
 26 suppose a double movement from one place to another: one tribe gives
 27 women to another tribe and receives women back (or a man and a
 28 woman “give themselves up” to each other); and when receiving a horse,
 29 I give money or perhaps a donkey back. But the exchange of signs is not
 30 necessarily double; it does not even necessarily imply any spatial move-
 31 ment in the Lifeworld. A television picture or a web page is transferred
 32 from afar but they are not perceived to move in space. It seems rather
 33 absurd to speak of the meaning of a fresco painting being transferred by
 34 circulation — though there is of course a movement of the photons from
 35 the rocky surface to the eyes of the observer. A fresco painting is an ex-
 36 ample of a sign that would certainly not remain at its place of origin if it
 37 were transferred to a museum. Indeed, it is an instance of a sign system
 38 where it is the addressee that has to seek out the message, rather than
 39 the opposite. However, there is a sense in which a picture postcard or a
 40 reproduction of Mona Lisa will remain at the point of origin while being
 41 sent of to some distant place: as a *type*, if not as a *token* (cf. Sonesson
 42 1992a: 91). Thus, circulation, like accumulation, has more to do with the

1 kind of temporal and spatial artifact in which the sign is embodied then
2 with the sign function as such.

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

40 The comparison between money and signs was made already in Saus-
41 sure’s *Cours*, where it was formulated in terms of “values,” probably
42 only to bring home the importance of the interrelationships between the

1 items making up the system. Basically, money is only a particular in-
 2 stance of goods, conventionally taken to be the equivalence of any other
 3 kind of goods. In this sense, we should expect it to obligatorily circulate
 4 in a spatial sense, as goods do, not only optionally, as is the case with
 5 signs. This is of course no longer true, when a money transaction can be
 6 made by pressing some buttons on the Internet page of the bank or the
 7 Internet store. Within a very different tradition, money is one of the in-
 8 stances of “institutional facts” most thoroughly discussed by Searle
 9 (1995: 32, 37; 1999). Money is in Searle’s view a kind of “status func-
 10 tion” (“X counts as Y in C”), just as chess and language, that is, it is a
 11 “language-” or “mind-dependant fact,” whether it is *commodity* money,
 12 which may constitute of gold or other things regarded as valuable in
 13 themselves, *contract* money, in which the value is ascribed to the promise
 14 to pay the bearer the equivalent amount in gold, or *fiat* money, which are
 15 simply pieces of paper declared to be money by some official agency such
 16 as a central bank. Commodity money is, of course, as we noted above, sim-
 17 ply a privileged type of commodity. As for fiat money, as presented by
 18 Searle, it still has some kind of embodiment, in a Husserlean sense, but
 19 the materiality of Internet transactions seems to be considerably subtler.

20 In the posterity of Saussure, the most recent instance of the money met-
 21 aphor seems to have been offered by Alf Hornborg (1999, 2001a, 2001b),
 22 who continues to consider money to be some kind of sign, although, in
 23 my view, he gives very good reasons for abandoning this identification.⁶²
 24 Hornborg suggests that what has happened to money historically could
 25 be seen as a continuing conversion of signifiers into signifieds, gold stand-
 26 ing for exchange value (to which it is indexically related), paper money
 27 standing for gold, and electronic money standing for paper money. This
 28 description is true enough, but it raises the question what the next step
 29 may be. However, Hornborg’s further discussion seems to indicate that
 30 all money, at least in Western society, is fundamentally deprived of mean-
 31 ing, which makes it into a very curious sign indeed. According to Horn-
 32 borg (1999: 151), money is “a code with only *one* sign” (his italics), which
 33 would be like “imagining a language with one phoneme, an alphabet with
 34 one letter, or a DNA molecule with only one kind of nucleotide.” This is
 35 a strange thing to say (quite apart from the fact that the word, not the
 36 phoneme, is the elementary sign of verbal language), because all kinds of
 37 currency appear to be made up of different units (such a “euro” and
 38 “cent”), to which further denominations are added by the number system.
 39 Indeed, this is probably why Saussure chose to compare language to
 40 money in the first place.⁶³

41 It soon becomes clear, however, that Hornborg is really thinking about
 42 something very different, which, with Benveniste’s (1969) term, may be

1 called the *domain of validity* of the system, that is, the limited content
2 resources. According to Benveniste, verbal language seems to be able to
3 talk about everything (it is a “pass-key language,” as Hjelmslev said),
4 while other semiotics resource are more limited in what they may be
5 about; pictures, I have suggested, must make do with everything visible,
6 or everything having visible homologues. The expression resources are
7 what Benveniste calls the *mode of operation*, that it, sounds or, more ex-
8 actly, phonemes, in language, and static and bi-dimensional visuality in
9 pictures. Terms such as domain of validity and mode of operation can
10 easily be generalized beyond signs to instruments.

11 Hornborg opposes the Western concept of money to that of pre-
12 modern societies such as the Nigerian Tiv, where there are three different
13 kinds of value, that is, three different kinds of circulations of objects,
14 which do not connect with each other. Indeed, not only is it possible, to
15 express it in more adequate terms, to have several different money sys-
16 tems, each with its own domain of validity, between which no exchange
17 is possible (contrary to what happens in the case of the currencies of
18 different countries), but, at least at this point in history, it is still true
19 that “*all* societies recognize spheres of human life which are not to be
20 mediated by money” (Hornborg 1999: 157). Although Hornborg does
21 not give any examples, I believe it is taken for granted in our society
22 that such things as love, friendship, and honour are not to be had for
23 money, but only for more love, friendship and honour. With such excep-
24 tions, however, the whole domain of goods can be exchanged for money
25 in Western society. To this may be added a peculiar “mode of opera-
26 tion,” in Benveniste’s (1969) sense, that is, a limitation of expression re-
27 sources, because, as Hornborg (1999: 153) notes, quoting Polanyi, “‘only
28 quantifiable’ objects may serve as money.” If love is only to be exchanged
29 for love, then, I take it, love would not be money, because it is not
30 quantifiable.

31 The correlate of money being able to stand for everything it that it is
32 unable to stand for anything in particular: as Hornborg (1999: 153) ob-
33 serves, money does not correspond to any particular concept. It might be
34 more correct so say, however, that money only corresponds to the con-
35 cept of monetary value, which is really the same thing as saying that it is
36 limited to a very narrow domain of validity.⁶⁴ Still, this means that it does
37 not make sense to say that money is somehow directly given but not
38 thematic while that which it is exchanged for is indirectly given and
39 thematic. Hornborg also claims that money cannot be a “symbol” in the
40 Saussurean sense, because there is not even a remnant of natural connec-
41 tion between signifier and signified. But Hornborg must be wrong about
42 this: in fact, Saussure (1973: 115–116) does not say that coins and words

1 may be exchanged for unlike units, such as commodities and concepts, re-
 2 spectively, as Hornborg quotes him to say, but for *work* and concepts,
 3 and he goes on to contrast the natural relationship in the first case with
 4 the arbitrary one in the second case (which should not be surprising since
 5 Saussure always tends to single out the arbitrariness of language).
 6 Clearly, Saussure has an idea of the “true value” of things, measured in
 7 the amount of work, as we know it from Ricardo and Marx. As Marx
 8 recognized, however, this does not really describe the way money has
 9 been functioning in Western society over the last few hundred years. Still,
 10 I think there is some truth to Saussure’s observation: as a special kind of
 11 exchange of commodities, money is basically of the same kind as that for
 12 which it is exchanged. But the signifier is not really of the same kind as
 13 the signified. I may take some money for my work instead of the food I
 14 really need, but I would hardly accept the signifier “food” in place of its
 15 signifier.

16 Like the woman of the mate exchange, money only signifies in a sec-
 17 ondary way, because it stands for the act of exchange of which it is a
 18 part. The circulation of mates and the circulation of goods are really first
 19 of all circulations, and then they may be made to signify the fact of circu-
 20 lation. Even though a sign that does not circulate is not much of a sign,
 21 circulation is not constitutive of sign-hood. On the other hand, while the
 22 sign character is constitutive of language, it has a very limited manifesta-
 23 tion in Rossi-Landi’s chicken and Hornborg’s money, and perhaps none
 24 in Lévi-Strauss’ women.

25 26 27 4.2. *Signs in and out of the system*

28
29 In recent intellectual history, system character as a specific property of
 30 (some) signs re-emerges in the work of Terrence Deacon (1997: 69), but
 31 with reference to Peirce instead of Saussure. There is a double irony to
 32 Deacon’s plea for Peircean semiotics, as opposed to Saussurean “semi-
 33 ology.” Not only does he impute to Saussure the very conception of
 34 language which Saussure was out to criticize, but he ascribes to Peirce a
 35 conception of the symbol which, in a strict sense, is found nowhere in his
 36 work and which, in a loose sense, would really apply to all signs. Con-
 37 trary to Deacon’s self-understanding, his semiotics is really Saussurean
 38 at heart.

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

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

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

32 In the light of this close correspondence between Saussure’s and Dea-
33 con’s conception of language, it is not surprising that when defining a
34 concept of language which goes beyond the linguistic system, they inde-
35 pendently come up with the same examples, such as games, norms of eti-
36 quette, and ceremonies. In these cases, the system character of the signs
37 seems to be fundamental to their meaning. But it is not true that this sys-
38 tem character translates to all signs, nor to all symbols in the Peircean
39 sense. Indeed, this has always been a problem for Saussurean “semiolo-
40 gy,” as practised by such French structuralists as Barthes.

41 The description of system character of language is later rephrased by
42 Deacon (1997: 83) as “possibilities of combination.” Commenting on the

1 Rumbaugh experiments with chimpanzees, Deacon points to the difficulty
 2 of teaching somebody the impossibility of certain combinations. Lan-
 3 guage has a great number of combinatorial possibilities, but how is a
 4 poor ape to learn that “banana juice give” is not one of them? It is impos-
 5 sible to train what is not to be done. Therefore, in order to be able to use
 6 a system, one must at some point recode indexical relations as symbolic
 7 ones. There are what Deacon (1997: 92, 95) calls “a symbolic threshold,”
 8 where the individual gains an insight permitting the reorganization of the
 9 whole system.

10 Deacon’s combinatorial possibilities are reminiscent of the two aspects
 11 of the language system, described by Saussure, and later termed the *syn-*
 12 *tagm* and the *paradigm* by Hjelmslev. The syntagm is the set of signs ap-
 13 pearing after each other in a combination of signs. The paradigm is the
 14 set of signs that may be substituted for each other at the same place in
 15 the syntagm. It is possible to generalize these terms, so that the syntagm
 16 is any set of signs appearing together, regardless of temporal and spatial
 17 relationships, whereas the paradigm consists of all signs that can be sub-
 18 stituted for each other. Thus, the syntagm is made up of conjunctions,
 19 and the paradigm of disjunctions. Such a model applies very well to lan-
 20 guage and to games such as chess, as well as to restaurant menus and
 21 clothing, as Barthes has shown. However, as I have demonstrated else-
 22 where (cf. Sonesson 1992a, 1992b), pictures as such do not have any para-
 23 digms and syntagms, although depicted objects (such as clothing) may be
 24 organized in that way, as may pictorial styles (the variety of colors per-
 25 mitted, different kinds of perspectives in different parts of the painting,
 26 as in Russian icons, cf. Uspenskij 1976; etc.). There are, however, other
 27 kinds of visual signs, which are not properly speaking pictures, which
 28 could be said to contain paradigms and syntagms, or at least the former:
 29 naval flag codes, graphic signs for washing instructions (such as those cur-
 30 rent in Sweden), traffic signs, etc. On the other hand, while complete ges-
 31 ture systems such as ASL certainly have syntagms and paradigms (which
 32 is why contemporary linguists insist on calling them “languages”), that is
 33 hardly true about many other kinds of gestures, for instance, emblems
 34 such as the V-sign.

35 It might be supposed that all sign systems have syntagms and para-
 36 digms.⁶⁶ We have seen that some kinds of semiotic resources, in which
 37 iconic relationships are dominant, such as pictures, do not have system
 38 character in this sense. However, it does not follow that, as Deacon
 39 (1997: 100) maintains, “there can be no symbolization without systematic
 40 relationships.” If symbolicity is to be defined, as in Peirce conception, by
 41 the lack of both iconic and indexical motivation, then this does not imply
 42 anything about the system character of the signs. It is of course conceiv-

1 able that there is some kind of “universal” which says that all signs that
2 are constituted by means of symbolic relations are also organized into
3 systems. It may even seem reasonable to argue this point: if signs are not
4 held together either by iconicity or by indexicality, they may need to form
5 part of a system in order not to lose their meaning. Or the other way
6 round: if they are held together by a system, they do not need iconicity
7 or indexicality.

8 Nevertheless, it is easy to show that this is not the case: if I decide with
9 a friend that each time I have a particular shirt on, I want him to drive
10 me home after the seminar, then this is a clear instance of a Peircean sym-
11 bol. And yet, if we have not decided that not having this particular shirt
12 on means the opposite, then there will not even be a minimal system. A
13 lot of real world symbols are like that. If my example seems contrived,
14 then this is not the case with the white walking stick used by blind people
15 in some countries. Somebody not using a white walking stick does not
16 convey the message “I am not blind,” so there is not even a minimal sys-
17 tem. On the other hand, the absence of a flag on the admiral ship does
18 signify that the admiral is not onboard (cf. Prieto 1966: 43). The latter
19 thus constitutes a minimal system, but its very minimality puts it on a
20 level rather far from what Deacon is thinking about.

21 If symbolicity and systematicity are independent variables, then there is
22 a series of empirical questions that may be formulated about them. If all
23 symbols do not form part of sign systems, then is it at least true that all
24 sign systems are made up of symbols? Perhaps semiotic resources of the
25 kind in which iconic and/or indexical grounds dominate do not form
26 sign systems. Then there is the historical issue: do we perhaps need to
27 learn symbols first in the context of sign systems, before we can use them
28 independently, unlike what happens with icons and indices? These are all
29 empirical questions, which should be possible to investigate. Perhaps a
30 new meaning could be given to the idea often expressed by the Tartu
31 school, which has maintained that verbal language is primary in relation
32 to the “secondary modelling systems,” if the latter domain, since it in-
33 volves systems, is restricted to symbols. In that case, language learning
34 would really be a “semiotic threshold,” which is important not only as
35 such, but also for the new possibilities it opens up.

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

1 4.3. *Signs as portable memory*
2

3 Students of prehistoric pictures (such as White 2000) often suggest that
4 creators of such works must have been capable of language. In fact, not
5 much can be concluded on the basis of the depictions having come down
6 to us: even though pictures, by their nature, must have been made of ma-
7 terial which conserves the markings on the surface, they might at first
8 have been created on surfaces (such as sand) which only preserve them
9 for a short time. And it is not easy to establish any clear-cut relation be-
10 tween language capacity and the sophistication of the depictions (what-
11 ever that is). There are, however, more fundamental reasons for suppos-
12 ing pictures to be later in development than language: they suppose a
13 record that is independent of the human body; and they require us to see
14 a similarity within an overarching dissimilarity. Here we will be con-
15 cerned with the first property.⁶⁷

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

33 In another way, however, Lotman’s claim is problematic, for it does
34 not take into account the material resources necessary for making up
35 (most) signs. Although Lotman pinpoints the parallels between merchan-
36 dise (and therefore, by extension, at least as Lotman seems to understand
37 the term, material objects), he treats the sign as pure information (per-
38 haps because he thinks mainly about verbal texts, notably in their oral
39 form, where the material base is extremely mutable), without which the
40 parallel would have been pointless. Clearly, however, signs are *also* mate-
41 rial objects, and therefore subject to the kind of circulation and accumu-
42 lation attributed by Lotman to merchandise. More obviously than lan-

1 guage, a picture is as much a material object as a piece of information, as
2 much an artifact as an object of perception. This is why we can accumu-
3 late pictures in a double sense: as material things, in the safe-deposit box
4 of a bank, or like experiences in the mind. In both senses they maintain a
5 certain distance with respect to the body. Thus far the parallel holds. Yet
6 Lotman's analogy is arguable in the opposite sense, too: food which he
7 opposes to merchandise and information may be a kind of merchandise,
8 too, and it is just as apt to be accumulated *qua* merchandise as all other
9 kinds; and breathing is an activity or perhaps rather a process, and pro-
10 cesses can never be accumulated, not even the processes of transferring or
11 accumulating (although they can obviously be converted into tapes and
12 records), if not as processes themselves (which may, contrary to what
13 Lotman maintains, suppose an incorporation of sorts into the organism,
14 such as in the case of gesture). In saying that both merchandise (and by
15 implication material objects in general) and information may be cir-
16 culated and accumulated, it seems that Lotman does not say very much.
17 The real question is perhaps in *which way* and *to what degree* information
18 and material objects may be accumulated (and circulated).

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

36 Against Masuda as much as against Lotman it is possible to object that
37 even the most elusive kind of information must be incarnated in some
38 type of material substance, quite apart from the fact that all access to
39 the information in question depends on some material apparatuses called
40 computers, hard discs and compact disc player. In the world of ideas the
41 content of a book exists indefinitely; but in reality, it evaporates with the
42 last paper copy that moulders away or the last person that dies or forgets

1 the content. It could be argued, however, that while the first case is feasi-
2 ble in the case of books (and of language systems that disappear when the
3 last speaker dies — or, rather, when the last two speakers do), only the
4 second case applies to pictures. Pictures must really be conserved in a ma-
5 terial form independent of the human body.⁶⁸ Today, that material form
6 may very well be a computer record. But also computerized information
7 is dependant on the wear and tear of the units of storage such as compact
8 discs and hard discs.

9 In this sense all information goods are temporarily limited — even
10 though some limitations can be of relatively long duration. Roland Pos-
11 ner (1989) distinguishes two types of artifacts: the transitory ones (as the
12 sound of a woman's high-heeled shoes against the pavement) and endur-
13 ing ones (as the prints that the woman's shoes may leave in clay, in par-
14 ticular if the latter is later dried). The transitory artifacts, in this sense,
15 also have a material aspect, just as the lasting ones; they only have the
16 particularity of developing in time, which is why they cannot be ac-
17 cumulated without first being converted. Normally, it is Posner's transi-
18 tory artifacts whose development in time causes them to seem some-
19 how "less" material (which is of course nonsense but must be taken
20 seriously in the Lifeworld). It is easy to understand that thinkers of the
21 Enlightenment like Diderot and Lessing could conceive of language
22 (which they tended to imagine in its spoken form) as a "more subtle ma-
23 terial" than the picture that endures in time (at least until air is let into
24 the prehistoric caverns or car exhaust is allowed to devastate the frescoes
25 of a later time).

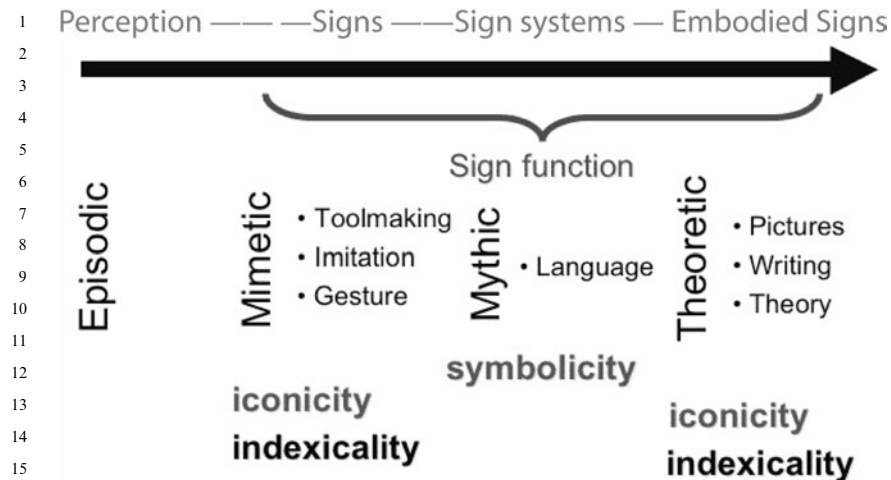
26 Strictly speaking, the sound sequence produced by high heels against
27 the pavement, and other transitory artifacts, can of course be accumu-
28 lated (as opposed to being converted into an enduring artifact, which is
29 the case of the sound tape), in the form of the (typical) leg movements
30 producing this sound, that is, as a mimetic record, accumulated in the
31 body, but still distinct from it, since the movements can be learnt and imi-
32 tated, and even intentionally produced as signs of (traditional) femininity.
33 Posner's example of an enduring artifact is interesting in another way: the
34 cast of prints left by the woman's high heels is of course an organism-
35 independent record, just as the marks of a Roman soldier's sandals found
36 in prehistoric caves, and the hand-prints on cave walls. Another case in
37 point may very well be the so-called Berekhat Ram figure, which, if it is
38 not the likeness of a woman, as has been claimed with very little justifica-
39 tion, could be the result of abrasion produced by regular movements indi-
40 cating the intervention of a human agent (that is, "anthropogenic" move-
41 ments). This suggests that the first organism-independent records are
42 indexical, rather than iconic, in character. However, even if objects like

1 these were independent objects already in prehistory, there is nothing to
2 prove that they were perceived as signs, that is, as expressions differenti-
3 ated from contents, before pictures were so perceived.

4 Harold Innes (1972 [1950]) differentiates all cultures according as they
5 favor more lasting storage media which are difficult to transport, such as
6 stone tablets, or media which are less enduring, but easier to transport
7 like the papyrus. In other words, it could be said that some media are bet-
8 ter for conserving information in time, while other do a better job of sus-
9 taining it in space — which could also be expressed in Lotman's terms by
10 pointing out that some media provide mainly for accumulation and
11 others for circulation.⁶⁹ But, again, it may be better to ask *what degree*
12 *and kind* of accumulation and circulation pertain to different storage
13 media.

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

29 According to Donald's (1991, 2001) conception of evolution, many
30 mammals, who for the rest live in the immediate present, are already ca-
31 pable of *episodic memory*, which amounts to the representation of events
32 in terms of their moment and place of occurrence (cf. Figure 6). The first
33 transition, which antedates language and remains intact at its loss (and
34 which Donald identifies with *homo erectus* and wants to reserve for hu-
35 man beings alone) brings about *mimetic memory*, which corresponds to
36 such abilities as the construction of tools, miming, imitation, coordinated
37 hunting, a complex social structure and simple rituals. This stage thus in
38 parts seems to correspond to what we have called the attainment of the
39 semiotic function (though Donald only notes this obliquely, in talking
40 about the use of intentional systems of communication and the distinction
41 of the referent). Yet, it should be noted already at this point that while
42 all abilities subsumed in this stage seem to depend on iconic relations



17 Figure 6. Donald's model of evolution related to the notion of sign function

18

19

20 (perceptions of similarity), only some of them are signs, because they do
 21 not involve any asymmetric relation between an expression and the con-
 22 tent for which it stands.

23 Only the second transition brings about language (which, Donald
 24 muses, may at first have been gestural) with its *semantic memory*, that is,
 25 a repertory of units, which can be combined. This kind of memory per-
 26 mits the creation of narratives, that is, mythologies, and thus a com-
 27 pletely new way of representing reality. As I have suggested above, this
 28 is the stage at which signs tend to form systems. However, Donald does
 29 not think development stops there, although there are no more biological
 30 differences between human beings and other animals to take account of.
 31 However, the third transition obviously would not have been possible
 32 without the attainment of the three earlier stages. What Donald calls the-
 33 oretical culture supposes the existence of *external memory*, that is, devices
 34 permitting the conservation and communication of knowledge indepen-
 35 dently of human beings. The first apparition of theoretical culture coin-
 36 cides with the invention of drawing. For the first time, knowledge may
 37 be stored eternally to the organism. The bias having been shifted to visual
 38 perception, language is next transferred to writing. It is this possibility of
 39 conserving information externally to the organism that later gives rise to
 40 science. Here, then, we reach the stage, the existence of which I suggested
 41 above, in which signs can be accumulated outside, and in a way inde-
 42 pendently, of individual subjects.

1 4.4. *The schemes of perception and memory*

2

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

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

22

23 A scheme is that portion of the entire perceptual cycle which is internal to the per-
24 ceiver, modifiable by experience, and somehow specific to what is being perceived.
25 The scheme accepts information as it becomes available at sensory surfaces and is
26 changed by that information; it directs movements and exploratory activities that
27 make more information available, by which it is further modified. (Neisser 1976:
28 54)

29

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

41 Both Neisser and the exponents of the AI approach also refer to the
42 work of the social psychologist Bartlett (1932), who used the notion of

1 scheme in his studies of memory, notably in order to explain the succes-
 2 sive modifications which a story stemming from an alien culture were
 3 subjected to, as the experimental subjects were ask to recount it within in-
 4 creasing temporal distances. The scheme is to Bartlett “the setting which
 5 makes perceiving possible,” but also, more dynamically, an “effort after
 6 meaning” (1932: 32, 44); more precisely, it is “an active organization of
 7 past reactions, or of past experiences, which must always be supposed to
 8 be operating in any well-adapted organism’s response,” with the result
 9 that responses do not occur in isolation, but “as a unitary mass” (1932:
 10 201).

11 Bartlett himself claims his employment of the term was inspired by the
 12 usage of the physiologist Head, who applied it to body consciousness (cf.
 13 Bartlett 1958: 146), but in the original work, he also alludes to the psy-
 14 chologist Janet, as well as to the sociologist Halbwachs, and these refer-
 15 ences seems more directly to the point, both because the latter authors
 16 evoke the notion of scheme in the context of a discussion of memory,
 17 and because they do so, like Bartlett (in particular in Bartlett 1923), to
 18 emphasize the part of social construction in memory. Janet’s (1928: 284)
 19 indications on this matter are, to be sure, very brief: he notes that many
 20 people are in the habit of using imaginary spatial arrangements, i.e., a
 21 *schéma tiré de l’espace*, where they place information they would like to
 22 remember, in the same manner as we enter an important date in the cal-
 23 endary grid furnished by our diary.⁷¹ The example he gives is an ancient
 24 Nahua map (i.e., the exodus of Totomihuaca, Puebla, Mexico), which
 25 he shows to be a history book, where the imaginary paths form a scheme
 26 on which to append the events worthy of notice. Here, then, we are
 27 already concerned with an organism independent artifact, which how-
 28 ever also serves as a series of interrelated hints for reconstructing the
 29 memory in the mind (going, notably, from deployment in space to action
 30 in time).

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

35
 36 En réalité, c’est parce que d’autres souvenirs en rapport avec celui-ci subsistent
 37 autour de nous, dans les objects, dans les êtres au milieu desquels nous vivons,
 38 ou en nous-mêmes: points de repère dans l’espace et le temps, notions historiques,
 39 géographiques, biographiques, politiques, donnés d’expérience courant et façon de
 40 voir familières, que nous sommes en mesure de déterminer avec une précision
 41 croissante ce qui n’était d’abord que le schéma vide d’un événement d’autrefois.
 42 (Halbwachs 1952 [1925]: 38–39)

1 This is already the scheme as conceived by Bartlett; and it already
2 serves as a lattice of pegs on which individual facts may be affixed.

3 The tradition from Bartlett has been taken up again recently, not only
4 inside AI, but also in cognitive psychology and linguistics. Kintsch (1974,
5 1977) has resumed the memory experiments along the same lines, and
6 has, together with van Dijk (1978), demonstrated, with the aid of summa-
7 rizing tasks, that “story grammars” are particular cases of schemes. Also
8 taking his point of departure from Bartlett, Chafe (1977) shows how, for
9 instance, the chunk of experience labelled “my childhood” is verbalized
10 through a number of steps, after being broken down into “subchunks.”
11 Rubin (1995: 21) uses Bartlett’s concept of scheme, enriched by the
12 recent tradition in cognitive science, to analyze oral tradition, separating
13 “scripts” which have both expression and content, and “story gram-
14 mars,” which only contain high-level contents. More fundamentally,
15 from our point of view, Rubin (1995: 70) also observes that there are
16 also schemes that are found exclusively on the level of expression, such
17 as rhyme and rhythm. He goes on to observe that there has been a ten-
18 dency in scheme research to deny the possibility of “surfaces schemas,”
19 opposing superficial phenomena to gist. But, as Rubin rightly claims,
20 there is an ambiguity in the term “meaning” as used in Bartlett’s phrase
21 “effort after meaning.” Rubin here rediscovers our distinction between
22 signs and meanings in a broad sense (referring, in the latter case, to Ge-
23 stalt psychology):

24
25 In a general sense, it [meaning] denotes everything which is important or struc-
26 tured in stimuli. In a specific and technical sense, it denotes gist as opposed to
27 form, semantics as opposed to syntax and phonetics, or underlying propositional
28 structure as opposed to surface structure. The general sense includes all form of
29 organization, the specific technical sense does not. (Rubin 1995: 72)

30
31 A quite different tradition is, as it appears, represented by the phenom-
32 enologist Schütz (1974 [1932]), whose only indication of sources is a nega-
33 tive one, insisting that he is not concerned with the schema concept fa-
34 miliar from the writings of Kant. A scheme of our experience (*ein Schema*
35 *unser Erfahrung*), as Schütz’s wording more precisely goes, is

36 a context of meaning within our lived experience, which grasps the objects of our
37 experience which have been constituted in our lived experience, yet does not make
38 manifest the way in which the lived experiences have been constituted into objects
39 of our experience. (Schütz 1974 [1932]: 109, my translation)

40
41 In other words, a series of earlier “polythetic acts” are now reconceived
42 “monothetically.” Once constituted in this way, these schemes are, as it is

1 later explained (1974 [1932]: 111), applied to the interpretation of other
 2 experiences. We are reminded of the characterization of Halbwachs and
 3 Bartlett, according to which the schemes stem from earlier actions and
 4 are applied to later experiences. This is clearly the same procedure which
 5 Husserl and Gurwitsch called *formalization*, and which the second com-
 6 pared to what Piaget describes as “abstraction from the action” (as op-
 7 posed to “abstraction from the object”); and it obviously related to the
 8 notion of *sedimentation*, which I have already adapted from Schütz. In
 9 later works, Schütz (1967: 299, 327–328), describes the sign as made up
 10 of four different schemes, thus containing the sediments of experiences de-
 11 riving from different spheres of existence.

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

24 In an earlier work (Sonesson 1988), relying on the work of Bartlett,
 25 Piaget, Halbwachs, Janet, and Schütz, I determined that the scheme
 26 might be understood as *an overarching structure endowed with meaning,*
 27 *which, with the aid of a relation of order, in the form of syntagms and/or*
 28 *paradigms, joins together a set of in other respects independent units of*
 29 *meaning; and it is constituted out of earlier experiences, i.e., they are sedi-*
 30 *ments of lapsed sequences of behavior* (although at much higher levels of
 31 abstraction for Piaget than for Bartlett and Schütz); and, more specifi-
 32 cally, they are socially constituted, i.e., the actions from which they de-
 33 rive, and/or their results, arise in interaction with other members of the
 34 *socium*, and thus possess a least some amount of intersubjective validity,
 35 inside the limits of a particular society. Each scheme contains principles
 36 of relevance which serve to extricate from each ineffable object such fea-
 37 tures as are of importance relative to a particular point of view (this is
 38 Piaget’s *assimilation*, and the principle of *abstractive relevancy*, according
 39 to Bühler 1934); and it also supplies properties missing from the ineffable
 40 objects, or modify the objects so as to adapt them to the expectancies em-
 41 bodied in the schemes (this is another aspect of Piaget’s notion of *assimi-*
 42 *lation*, and what Bühler terms *apperceptive supplementation*; also, it is in-

1 volved in what Halbwachs and Bartlett call reconstruction). Finally, the
2 schemes *incorporate (some of) the results of their own use* on ineffable ob-
3 jects, and are themselves changed in the process (this is Piaget's *accommo-*
4 *dation*; and it also seems to correspond to what Lotman calls the *internal*
5 *recoding* of "texts," and to the Bakhtinian *intertext* conceived as a matrix
6 for engendering other "texts").

7 Although it is a much vaguer notion, the so-called "image schemas"
8 invoked by George Lakoff and Mark Johnson also seem to correspond
9 to some kind of overarching structure connecting items into coherent
10 wholes. Johnson (1987, 2005; Johnson and Rohrer 2007), at least, de-
11 scribes image schemas as being abstractions from the interaction of
12 organism and environment. As we have seen, the idea of a spatial, if not
13 specifically bodily, projection is important to the notions of scheme in the
14 psychology and sociology of Janet, Halbwachs and Bartlett. However,
15 while this spatial projection seems to take place in real space, much like
16 that realized by the orator of Antiquity and the Renaissance, the projec-
17 tion with which Lakoff and Johnson are concerned rather seems to go
18 from the vocabulary used to speak about space to non-spatial vocabular-
19 ities (conceiving life as a voyage, the body as a container, etc.). The spa-
20 tial terms, however, are said to be generalizations of "*a recurrent pattern,*
21 *shape, and regularity in, or of . . . ongoing ordering activities*" as actions,
22 perceptions, and conceptions (Johnson 1987: 29). This seems to recast
23 the schemes, much like those of Piaget and Schütz, as sedimentations of
24 earlier actions, primarily perhaps of our own body in relation to the envi-
25 ronment. In terms of von Uexküll's *Umwelt*, such schemes could be
26 conceived as a kind of resegmentation, however solitary, of the environ-
27 ment from the point of view of the body. It turns out, however, that this
28 is not at all what is meant by Lakoff and Johnson, who postulate some
29 kind of innate neurophysiological structures (cf. Zlatev 2005). It is how-
30 ever the former notion that we are going to explore in the following:
31 mind-dependant social actions transformed into non-physical mind-
32 independent structures.

33

34

35

36 4.5. *Collective memory and the "tragedy of culture"*

37

38 The notion of collective memory, if not that of scheme, has recently been
39 taken up again by James Wertsch, in relation, in particular, to the work
40 of Bartlett. Wertsch, however, conceives an opposition between the static
41 conception of memory attributed to Halbwachs and a more dynamic idea
42 of "remembering" for which he makes Bartlett responsible. But if

1 schemes are the result of actions and are applied to actions, this opposi-
 2 tion does not make sense. Not only is the dynamic aspect present in Halb-
 3 wachs' work, as Wertsch (2002: 21) himself remarks, but the static aspect
 4 is incorporated into that of Bartlett, by means of the notion of scheme.
 5 This, however, leads to Wertsch having qualms about collective memory
 6 being some kind of super-mind separate from that of individuals. Instead
 7 he favors something that he calls a "distributed version of collective
 8 memory."

9 To understand the human Lifeworld, however, it is necessary to posit
 10 at least two kinds of social memory, one of them being similar to the Saus-
 11 surean language system, which is a Durkheimian notion, and the other
 12 comparable to the Saussurean *parole*, which is said to derive from Ga-
 13 briel Tarde's idea of conversation. There is nothing mystical about the
 14 former: as Husserl (1962a: 365–386) pointed out in the case of geometry,
 15 abstract systems are dependant for their existence on some kind of mate-
 16 rial incarnation, but cannot be entirely reduced to the latter. From the
 17 Bakhtin circle to pragmatics, there has been an unfortunately tendency
 18 to reduce sociality to dialogue, or more generally, joint action. But there
 19 is more to society than interaction. If we start out from the Ego, there
 20 clearly are different kinds of alterity: that of the other person (*alter*), that
 21 of the environment (*alius*), and that of the sign system itself (*aliquid*).

22 Having recourse to the metaphor of the three common types of per-
 23 sonal pronouns to describe analogies between persons and cultures, Peirce
 24 originally put them in place of what was later to become the three funda-
 25 mental categories of Firstness, Secondness, and Thirdness. But Peirce did
 26 not identify the second person, as one may at first naively expect, with
 27 Secondness, but with Thirdness. In his view, the second person was the
 28 most important, not the first: "all thought is addressed to a second per-
 29 son, or to one's future self as a second person" (quoted from Singer
 30 1984: 83–94). In terms that Peirce took over from Schiller, the first person
 31 stood for the infinite impulse (Firstness), the third person for sensuous-
 32 ness (Secondness), and the second person for the harmonising principle
 33 (Thirdness). Peirce called his own doctrine "Tuism" (from "Tu," as op-
 34 posed to "Ego" and "It"), and he prophesized about a "tuistic age," in
 35 which peace and harmony would prevail. So the Peircean other is a friend
 36 and collaborator; he is not the spirit that always says no, the devil in a
 37 Biblical sense.

38 It is striking that not only Peirce, but also the late Cassirer and Popper
 39 came up with threefold divisions of "what there is." If one of these in-
 40 stances can be identified with subjectivity, then all three thinkers would
 41 seem to agree that there are two kinds of alterity. Even though both
 42 Peirce and Cassirer, at times, identified the triads with the personal pro-

1 nouns, it does not seem that they were thinking about exactly the same
2 thing; nor was Popper.

3 The most general sense of alterity seems, at last according to some def-
4 initions, to be contained in Peirce's notion of Secondness: like Berkeley,
5 Destutt de Tracy and Maine de Biran before him and Sartre after him,
6 Peirce identifies our sense of reality with resistance, that is, "this sense of
7 being acted upon, which is our sense of the reality of things" (*EP* 2: 4)

8
9 A door is slightly ajar. You try to open it. Something prevents. You put your
10 shoulder against it, and experiences a sense of effort and a sense of resistance.
11 These are not two forms of consciousness; they are two aspects of one two-sided
12 consciousness. It is inconceivable that there should be any effort without resis-
13 tance, or any without a contrary effort. This double-sided consciousness is Sec-
14 ondness. (*EP* 2: 268)

15 This explains that in Peirce's early trichotomy, using the three personal
16 pronouns, it is the third person, and not the second person, which corre-
17 sponds to the later notion of Secondness. But this only becomes self-
18 explanatory, when we remember that, to Peirce, the other is never some-
19 one who stands opposed to the Ego, certainly not as in the Hegel-Sartre
20 tradition, but not even in the more general sense of the Bakhtinean con-
21 ception. Indeed, the second person is a harmonizing influence.

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

32 As far as I know, Peirce never put his later trichotomy in relation to the
33 three pronouns, but if he had done so, I think he should have arrived at a
34 quite different conception. If Firstness remains akin to "the infinite im-
35 pulse," then both the Ego and the Alter would basically be of this kind.
36 But *as* an Alter, as partner in a dialogue, Alter would already be a kind of
37 Secondness, just as Ego would be to Alter. In this sense, just as the out-
38 side world, the sphere of reference, Alter is something which resists us,
39 and which we resist. But even the sign, which is of the nature of law, and
40 thus Thirdness, must partake of Secondness, because all semiotic struc-
41 tures impose constraints on our possibilities of dialogue, and, in the end,
42 of being.

1 In this interpretation, the trichotomy is roughly similar to Popper's
 2 (1972) more generally well-known conception of the "three worlds,"
 3 with a different numbering: the first world corresponds the third person,
 4 the sphere of reference, and both the first and the second person pertain to
 5 the second world. The third world, however, is of the same general kind as
 6 Peircean Thirdness: it involves the kind of generality that is the result of
 7 organism-independent representations. In the sociology of the early twen-
 8 tieth century, as well as in latter-day Marxist writings, this is known as
 9 objectification or reification: the transformation of relations between peo-
 10 ple into objective facts, often ending up becoming artifacts standing on
 11 their own. We here recognize those *ens rationis*, which become *ens reale*,
 12 without necessarily becoming physical. In a late book, Cassirer (1942:
 13 113) argued, against Simmel more than against the Marxists, that such
 14 processes of objectification were not only negative phenomena, not only
 15 a "tragedy of culture": rather, they represented the origin of culture.

16 When later on, in his *Nachlass*, Cassirer defines the three *Basisphäno-*
 17 *mene* in terms of the three pronouns, objectification is mentioned only in
 18 passing, but it seems essential to the whole conception. The first person,
 19 the "Monas," also characterized as "Leben," is no doubt close to the "in-
 20 finite impulse" of Peirce (which is not so strange, because, while Peirce
 21 starts out from Schiller, Cassirer refers to Goethe). More explicitly than
 22 in Peirce's discussion, the second person is not characterized in itself, but
 23 precisely as being second to a first: it involves "Wirken" and "Zusam-
 24 menleben," all of which it can only be in relation to a first person. How-
 25 ever, it is also "Wirkung und Gegenwirkung," just as the Peircean Sec-
 26 ondness, which, as we have seen, does not concern the second person.
 27 The third person, finally, does not correspond to something "out there,"
 28 but to the to the world of our objectifications, epitomized by "Werke" (cf.
 29 Figure 7).

30 The latter terms seem to be equivalent to the notion of *opus* that plays
 31 an important part in the theory of Augusto Ponzio (1993; where it seems
 32 to derive both from Rossi-Landi and Levinas): it is a kind of exteriorisa-
 33 tion of the self (and perhaps also its relations to the other). Indeed, Pon-
 34 zio talks about the other as being only an instance of "relative alterity."
 35 "Absolute alterity," on the other hand, seems at times to involve the ma-
 36 terial world, at times the world of signs or *opus*. Both descriptions are, in
 37 my view, correct. Both the material world and the world of objectifica-
 38 tions impose much more severe constraints on our personal being than
 39 the other person as such; they are, so to speak, much less negotiable in
 40 the form of dialogue.

41 The suggestions made by Peirce as well as the late Cassirer concerning
 42 the basic categories (of the situation of communication if not of being)

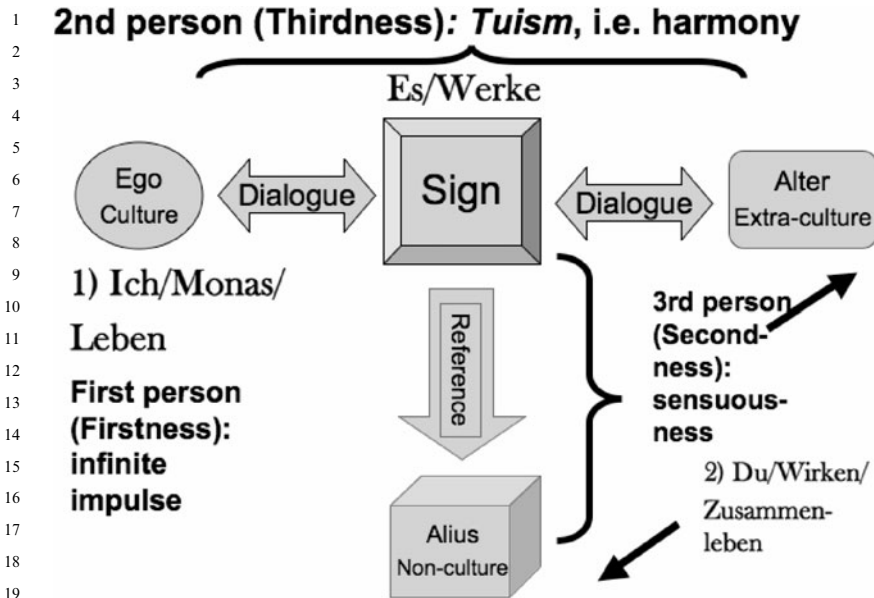


Figure 7. Comparison of the similarities and differences between the early Peirce (in terms of pronouns) and the late Cassirer (numbered terms)

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 tuism, 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

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

Figure 8. *Semiotic stages of development, according to Donald, relation to the semiotic function and the different principles*

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.⁷³ 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

1 is not dependent of such organism-independent representations for its
2 existence.

3 Donald's episodic stage is thus an type of understanding preceding the
4 emergence of signs, still continuous, from this point of view, with mean-
5 ing as found in perception. Similarly, we will see that the sign, which
6 pertains to the second age of understanding, only come to its own some-
7 where in the middle of Donald's mimetic stage.

8 Mimetic culture starts out with the emergence of "conscious, self-
9 initiated, representational acts, which are intentional [i.e., in the sense of
10 deliberate, not in that of object-directed] but not linguistic" (1991: 168).
11 The examples given by Donald are such things as gesture, dance, ritual,
12 mime, play-acting, and (precise) imitation, but also tool use (or perhaps
13 rather the social generalization of tool use) and skill. Curiously, Donald
14 (1991: 170) claims to have derived his idea of mimesis from the literary
15 theorist Eric Auerbach, who wrote a history of realist literature with this
16 very title — although Donald observes that what Auerbach discusses is
17 not pure mimesis in his terms. It is not clear, however, that this is Donal-
18 dean mimesis in any sense. Rather, it would have been more fitting to refer
19 to the sense of the term *mimesis* in Antiquity, not perhaps as used by
20 Plato to describe the relationship between perceptual reality and the
21 world of ideas, but rather to one of the usages to which the term is put,
22 mainly by Aristotle's, as the representation of action by action, different
23 from (verbal) narration or *diegesis*.

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

40 Or perhaps the different understanding of the place of imitation in Do-
41 nald's two works could be referred to the distinction made by Tomasello
42 (1999) between imitation of the goal, of which he believes apes to be

1 capable, and imitation of the means, which is a capacity Tomasello would
2 like to restrict to human beings, although he later on (in Tomasello et al.
3 2005) recognizes its presence in at least some apes. Indeed, Donald (1991:
4 168–169) claims imitation “is found especially in monkeys and apes.” At
5 first it may seem strange that imitating the goal is presented as being eas-
6 ier than imitating the means by which the goal is achieved. But no doubt
7 it is less demanding to recognize the interest of the aim (getting the
8 banana) than the interest of the steps requisite for realising the goal. At
9 another level, it is like attending to the content, not the expression, of a
10 sign. Indeed, it is an instance of quite ordinary Lifeworld behavior.

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

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

37
38 Although mimesis may not have originated as a means of communication, and
39 might have originated in a different means of reproductive memory, such as tool-
40 making, mimetic acts by their nature are usually public and inherently possess the
41 potential to communicate. A mimetic act can be interpreted by others who possess
42 a sufficient capacity for event perception. Given the pre-established primate ca-

1 capacity for event perception, the presence of mimetic skills would inevitably lead to
2 some form of social communication. (Donald 1991: 172)

3
4 In view of this, I would say that tool use and other kinds of skill as
5 such are not mimesis, because they are not communicative, but they are
6 “public,” and they lend themselves to imitation — which leads to gener-
7 alization of tool use and skill in society. This is where they become differ-
8 ent from routine acts and procedural memory. They are socially shared.
9 But this is only possible if the act can be separated from the unique tool
10 user and transferred to another user. That is, the act as *token* must be ab-
11 stracted to a *type* in order to be realized in another *token*. What is shared
12 is the type, in other words the scheme of interpretation, which defines the
13 principles of relevance. In this sense (not in the sense of reference), a sin-
14 gle mimetic act may correspond to various events.

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

31 Imitation may thus be said to be differentiated, in the sense of separat-
32 ing the mediator and that which is mediated, but it is not asymmetric, nei-
33 ther in the sense of focus, nor in that of directness. Indeed, it is really the
34 type that is mediated by the token. This also means that the purpose of
35 the act of imitation is not to present the original act to another subject
36 (or even to oneself). Bentele (1984) in fact argued against Piaget that im-
37 itation does not manifest the semiotic function, but is a prerequisite for it:
38 indeed, it will function as a sign only to the extent that it is taken to refer
39 back to the imitated act, instead of just being another instance of the
40 same kind. The same observation should apply to “symbolic” play, and
41 is in fact made by Bentele in another context: the toy is a sign, he claims,
42 only to the extent that the child takes it to represent the real thing, which

1 cannot be true, for instance, in the case of a toy lion if the child has no
 2 experience of the real animal. In fact, the extent of the knowledge of the
 3 child may not be the relevant factor, but rather the attitude taken by the
 4 child: according to the degree of fictionality of the play world, i.e., its sep-
 5 arateness from the real world, which is grasped by the child (cf. Winner
 6 1982; Gardner and Wolf 1983) the lion may be made to instantiate a
 7 real lion act or to present into to the other children.

8 Acts of imitation in this sense have two interesting properties: they are
 9 “public,” in the very broad sense characterized by Donald, i.e., they may
 10 be perceptually, often visually, inspected; and they can be copied by
 11 means of the observer’s own body, with or without some additional im-
 12 plement such as a stone. In both these ways, imitation is different from
 13 episodic memory; and it is different from procedural memory in being a
 14 public record. Like in procedural memory, the record is located in the
 15 own body, but it can only function as memory to the extent that it is
 16 somehow separable from the body as such. While being *in* the body, it is
 17 not *of* the body. In fact, this can only be so, to the extent that some mem-
 18 ory traces are instantiated in other bodies as well as in the own body. This
 19 supposes a distinction between *token* and *type* (that is, relevance) preced-
 20 ing that of the semiotic function. It is the process by which *ens rationis* is
 21 transformed into *ens reale*.

22 Jordan Zlatev (in press a, in press b; Zlatev et al. 2005) who has
 23 adapted Donald’s concept of mimesis and extended it to child develop-
 24 ment, talks about “bodily mimesis” as being based on a cross-modal
 25 mapping between “*exteroception* (i.e., perception of the environment,
 26 normally dominated by vision) and *proprioception* (perception of one’s
 27 own body, normally through kinaesthetic sense)” (Zlatev in press b).⁷⁶
 28 This supposes a principle of relevance for realising the mapping and it
 29 would also seem to require a record of this mapping in the body. How-
 30 ever, since this is also a property of what Zlatev calls proto-mimesis
 31 (which would include, for instance, “neonatal mirroring”), such a princi-
 32 ple of relevance must be capable of being innate and/or resulting from a
 33 direct stimulus instead of auto-cuing.

34 Real mimesis (as opposed to proto-mimesis), according to Zlatev,
 35 would in addition require a number of properties which I have already
 36 introduced in the definition of the sign: the signifier and the signified
 37 should be *differentiated* (with reference to my discussion of this concept);
 38 the subject of the act has the intention (in the sense of *purpose*) “for the
 39 act to *stand for* some action, object or event for an addressee (and for the
 40 addressee to recognize this intention)”; and the act is *not conventional-*
 41 *normative*, nor does it have *system character*. However, if schemes of in-
 42 terpretation are normally applied as a matter of course, although they

1 may in principle be made conscious, then, as I have already hinted above,
2 it is better to define the sign from the point of view of the addressee: the
3 addressee takes the addresser to use the expression with the purpose of
4 representing the content to the addressee and he takes the addresser to
5 have the purpose that this purpose shall be recognized. I obviously take
6 representation to be explicated with what I have called double asymmetry
7 above.

8 Mimesis is dyadic or triadic.⁷⁷ Only cross-modal mapping and differen-
9 tiation is necessary for dyadic mimesis, such as action imitation, shared
10 attention, and mirror self-recognition. Triadic mimesis also requires de-
11 clarative pointing, iconic gestures and full joint attention. Mimetic acts
12 that are conventional and/or systemic such as sign language are post-
13 mimetic. Here Zlatev also places ordinary spoken language. Dyadic mi-
14 metic acts are thus still not signs. The differentiation they suppose is that
15 between Ego and Alter, not necessarily, it seems, between expression and
16 content. If however the own body is made to imitate the action first per-
17 ceived on the body of the other, differentiation of expression and content
18 here coincides with differentiation of self and other. It is, however, impor-
19 tant to note that these are two different kinds of differentiation, for, first,
20 this explains why the emergence of the sign function can only take place
21 within mimesis, and, second, it raises the question how this double differ-
22 entiation is then narrowed down to that between an expression separate
23 from the body and a corresponding content.⁷⁸

24 In describing ordinary language as post-mimetic, Zlatev would seem to
25 reject the third stage posited by Donald, the mythic stage, which is domi-
26 nated by language. Yet in terms of memory, as Donald originally ex-
27 pressed it, language is certainly different from mimesis. Language may
28 reasonable be thought to have originated as a kind of mimetic device, be-
29 ing different at first, perhaps, because it does not rely any more to any ap-
30 preciable extent on iconic and/or indexical relationships. Once it evinces
31 system character, however, at least of the magnitude present in human
32 languages, it acquires an existence of its own. What ever else has system
33 character, language certainly does. It thus initiates the third age of under-
34 standing, signs organized into coherent systems.

35 In a way, language only appears to require the presence of at least two
36 human beings to exist, who somehow maintain it between them, and
37 when these two speakers die, the language also dies. And yet a language,
38 while it exists, seems to be something more than its speakers. The mani-
39 fold relationships between its terms must subsist somewhere, in a place
40 that cannot be identified with any individual mind. As Searle observed,
41 language itself is the foremost language-dependant fact. Language is
42 not accumulated in the body like mimetic memory, nor as individual

1 facts in the single historically situated mind, as is episodic memory. More
 2 than mimesis, it has at the same time a *systemic* and a *normative* exist-
 3 tence, which goes beyond individuals. In this sense, it is clearly a con-
 4 straint imposed on the individuals, as is Popper's "objective world"
 5 (World 3), a structure that puts up resistance to the individuals, in the
 6 Peircean sense. Already in its oral form, as conversation and tradition, it
 7 is part of collective memory, as Bartlett recognized (but Wertsch some-
 8 how ignored), initiating, as Donald (2001: 298) points out, the "collectiv-
 9 ity of mind."

10 Husserl's (1962a: 365–386) description of the origin of geometry may
 11 be taken as a case in point. Geometry starts out from the acts accom-
 12 plished by the land surveyors, which is a kind of skill or even tool use,
 13 and therefore pertaining to mimetic culture, being subject to imitation,
 14 though never becoming signs in themselves. Indeed, it may be added
 15 that, at first, the acts of land surveying may well have been inextricable
 16 parts of more global acts involving the practice of agriculture. They have
 17 to be imitated, and thus typified, in order to become part of mimetic cul-
 18 ture. Acts of land surveying may be sedimented in the form of surveyor's
 19 maps. Husserl, however, is more interested in the way the general quanti-
 20 tative relationships of space are abstracted out, giving rise to the mathe-
 21 matical speciality known as geometry. Geometry, like language, has an
 22 existence, beyond all the fields it may be used to survey, in the abstract
 23 system of quantitative relationships we call geometry, as soon as it can
 24 be conveyed at least from one addresser to an addressee (who may be
 25 the same person at another point in time). It gains in independence be-
 26 coming a coherent system where everything works together, as in the
 27 Saussurean concept of language, unknowingly taken up by Deacon
 28 (2003) in terms of "semiotic constraints." Yet, like language, as Husserl,
 29 recognized, geometry retains only a precarious existence, a long as it can-
 30 not be materialised outside the minds of its users. Geometry, as it hap-
 31 pens, can be externalized, both as lines and figures, and as mathematical
 32 notation. This is the beginning of what Donald calls theoretic culture. It
 33 coincides with the fourth age of understanding, which evinces organism-
 34 independent signs.

35 Visuographic markings first appear, according to Donald (1991: 276,
 36 2001: 305f, with Marshack's engraved rib from Pech de l'Azé in France,
 37 which is however an isolated instance (if it is anything at all). It is fol-
 38 lowed up later by purposeful arrangements of objects in ritualistic set-
 39 tings, as well as by pictorial representation epitomized by cave paintings.
 40 The existence of pictures allows language to be given a visuo-graphic rep-
 41 resentation, which we know as writing (but which would also include ge-
 42 ometrical notation). Writing and pictures together permit the emergence

1 of science, which is independent of individual minds not only as representation,
2 but also, at least in its aspiration, as referent.

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

24 Episodic memory is most clearly disembodied. It may refer to a bodily
25 act, but it is unable to generalize this movement beyond a particular moment
26 and place, and thus it does not give rise to any kind of independent
27 embodiment. Mimetic memory still accumulates in the own body, but it
28 only becomes such, to the extent that what is recorded in the body also
29 exists elsewhere, in at least one other body, which supposes generalisation
30 or, more exactly, *typification*, the creation of a type referring to different
31 tokens instantiated in different bodies. Typification, in this sense, does not
32 require the semiotic function, but is probably a prerequisite for it. Mythic
33 memory (which I would prefer to call linguistic memory or perhaps, as
34 Donald sometimes does, semantic memory) is different again: it has a separate
35 existence, but, like some kind of real-world ectoplasm, it requires
36 the collaborative effort of a least two consciousnesses (which no doubt
37 have to be embodied) for this existence to be sustained. Transitory artifacts,
38 as verbal language or (as Posner would have it) the sound of high-heeled
39 shoes on the pavement, acquire a body only to the extent that a sender
40 and a receiver agree roughly on what they are. Only theoretic memory
41 has a distinct body of its own: it subsists independently of the presence
42 of any embodied consciousness, because it is itself embodied. It

1 has acquired the ability to persist independently of human beings. Of
2 course, without anybody around to perceive it, organism-independent
3 records are not of any use. Without any human beings present, they are
4 really worse off than the famous acorn falling from a tree without any-
5 body around to hear its sound.

6

7

8

9 4.7. *Summary*

10

11 Saussure rightly emphasised the system character as well as the social na-
12 ture of language, which serves to single out language from most other
13 kinds of signs. But in the work of Saussure, and in particular in that of
14 his followers, these two characteristics of language strangely appear to
15 be contradictory to each other. In fact, only society can explain system
16 character. But system cannot be generalized to all signs. And society is
17 also at the origin of another type of signs, embodied signs, which can ex-
18 istent independently of human beings, but not of a common Lifeworld. If
19 perception is the first stage of understanding, and the sign function is the
20 second, sign systems must be considered the third, and embodied signs
21 the fourth. From perception over signs and sign systems to embodied
22 signs, there is ever enmeshment of relationships. Signs that are embodied
23 may be accumulated and thus transferred in time and space. Accumula-
24 tion, as Lotman said, is just as important to signs as communication.
25 The picture, just as any other sign, may be seen as a memory device,
26 a tool for accumulating information. As such, it is at least more complex
27 to produce (though not necessarily to interpret) than verbal language,
28 since, unlike oral language, but similarly to writing, it supposes the pres-
29 ence of organism-independent vehicles of representation. Following
30 Merlin Donald, pictures are precursors of theory in phylogeny, and thus
31 perhaps, as others have suggested, also in ontogeny. The model of com-
32 munication, which poses an analogy between the conveyance of infor-
33 mation and transport in space, is problematical on any account, but
34 particularly so, in the case of pictures. Also pictures have types, distinct
35 from their tokens. As shown by the act of imitation, which is a precursor
36 to the sign in the mimetic stage, the separation of type and token is a con-
37 dition of possibility for the sign, but is also presupposed by meaning
38 in the wider sense. It is born as *ens rationis*, but survives as *ens reale*.
39 This is also true of the sign, though it contains further relations. At
40 least in the Peircean sense of resistance, sign systems and embodied signs
41 are even more real, the latter to the point of becoming at least partly
42 physical.

1 **5. Final interpretant**

2
3 In *Four ages of understanding*, John Deely is considering four phases in
4 the history of human thinking. In Antiquity, there is no concept of sign,
5 as we understand it today, neither as conceived the Augustine or by Poin-
6 sot, simply because it has occurred to no one that such diverse phenom-
7 ena may have something in common. The Latin Age, to the contrary, is
8 very much preoccupied with the development of a concept of sign, which,
9 at the end of the Latin Age, comes to comprehend all kinds of meaning,
10 including perception. In modern philosophy, which starts out at the same
11 time as modern (natural) science, contemporaneous with the Late Latin
12 Age, the concept of sign tends to lose its importance. Thinking appears to
13 be contained entirely in the mind, without relation to what it is thought
14 about. Beginning with Peirce, the contours of the post-modern age can
15 be divined in which the wide concept of sign comes to the fore again. In
16 contrast, Saussurean semiology is a false start, because it regresses to
17 something akin to the Augustinian notion of sign.

18 In this essay, I have projected the four ages of understanding from
19 socio-history to phylogeny and ontogeny, suggesting that, in the child, as
20 well as in the human species, perception is a kind of meaning given at the
21 start, signs are acquired much later, after which follow signs systems and
22 organism-independent artifacts. These are all relationships only given to
23 the mind, but having different kinds of reality. In arguing for this interpre-
24 tation of the ages of understanding in evolution and development, I have
25 relied on conceptions elaborated by Piaget, Husserl, Donald, and many
26 others. In so doing, I have apparently shifted the terrain of the debate.

27 But only in appearance. For, if we now return to the ages of under-
28 standing, as understood in intellectual socio-history, it is clear that Post-
29 modernity, if we should really follow Deely is using such as maltreated
30 term, cannot be a return to the Latin Age, but much go beyond that
31 period as well as Antiquity and Modernity. The accumulated insights of
32 all the giants preceding us, to use a metaphor of the Latin Age, will come
33 together to show us that there is not just one concept of sign, but multiple
34 meanings to account for. And there will no doubt be a Fifth Age of Un-
35 derstanding which will have something of its own to add. The final inter-
36 pretant will never arrive. But many of the dynamical interpretants are
37 here to stay.

38
39 **Notes**

40
41 * Many of the ideas presented here were developed as part of the SGB project at the
42 Faculty of Humanities at Lund University, as well as in the still ongoing European

- 1 Union project SEDSU. I wish to thank the members of these projects for stimulating
 2 discussion.
- 3 1. Cf. Peirce's (*EP* 1: 6) examples (which are, strange to say, binary) of the comparison
 4 between "ground" and "correlate" (which are terms we will turn to below): p versus
 5 b, man versus woman, etc.
 - 6 2. Sonesson (1989) used this as an argument (together with logical ones) against the con-
 7 ventionalist critique of iconicity formulated by Eco, Goodman, and others.
 - 8 3. Cf. Deregowski (1972, 1973, 1976) also for the following anecdotal material.
 - 9 4. Most of the experimental literature is really concerned with a third problem: our ability
 10 to discover, not *that* something is a picture, but what it is a picture of. Moreover, most
 11 of the experiments have been devoted to an investigation of the extent to which Non-
 12 western people are able to decode the depth cues inherent in Western linear perspective,
 13 which would seem to presuppose as the logically primary task, the study of their willing-
 14 ness to take pigment patterns on paper to represent three-dimensional objects of the
 15 world. Cf. the reviews of this literature in Deregowski 1972, 1976, 1980, 1984; Kennedy
 16 1974; Pick and Pick 1978; Jones and Hagen 1980. In this sense, Deregowski (1984: 20)
 17 rightly distinguishes the problem of identifying the percept corresponding to an object in
 18 a picture, the *epitomic* ability, and the problem of recognizing depth, the *eidolic* ability.
 - 19 5. No doubt DeLoache talks about "representation" in the sense in which the term is
 20 often used in cognitive science, but then this is precisely the problem, as we shall see
 21 later in this essay.
 - 22 6. There are in fact several problems with DeLoache's work, notably because the relation
 23 between the picture and the thing depicted is not only linguistically demonstrated be-
 24 forehand (as pointed out by Callaghan and Rankin 2002), but also indexically pre-
 25 determined, both because the object is pointed out (a gesture) and because it is placed
 26 in the *neighborhood* of the picture.
 - 27 7. Unfortunately, Elkins (1996) uses this case study to argue for the post-structuralist
 28 point that "close readings" are impossible, which is trivially true, if this is taken to
 29 mean that all details can be observed using no system of relevancies at all, but is dis-
 30 proved, on a more reasonable interpretation, by Elkins' own work, producing a "closer
 31 reading" than that of Marshack (cf. Sonesson 1996b).
 - 32 8. A more interesting interpretation of Peirce, however, may be that he was not really in-
 33 terested in the sign in our sense. We will turn to that view in the next main section.
 - 34 9. It might sound here as if classical cognitive science has brought to fruition the "post-
 35 modern" view reestablishing the broad sign definition of the Latin Age, as anticipated
 36 by Deely (2001). However, representation, which is a term with a long history in phi-
 37 losophy and psychology taking on many different senses, is largely an undefined term
 38 in cognitive science. Deely would probably criticize cognitive science making the same
 39 reproach as he makes to Locke and the British empiricists generally, that they treat the
 40 whole domain as being that of "ideas." In so doing, I take it, they fail to see the rela-
 41 tional character of this domain (on which more will be said below).
 - 42 10. Sonesson (1989, 1992a) certainly stands in that tradition, and, as I discovered very re-
 cently, so does Krampen (1991), who appears to be the only semioticians, apart from
 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 (1992b).
 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
 locution "signs or pointers."

- 1 13. This also brings Trevarthen to challenge the inclusion of imitation among the aspects
2 of the semiotic function. As we now know, mainly due to the work of Meltzoff, there is
3 a very early stage of more or less automatic imitation in the infant, different from the
4 explicit capacity for imitation, which matures much later. Cf. Gallagher (2005) and
5 Mandler (2004).
- 6 14. Piaget also insists a lot on the individual character of the symbol and the social one of
7 the sign. Therefore, Krampen (1991: 18–19) is clearly wrong in identifying Piaget’s
8 “symbol” with Peirce’s icon and Piaget’s “sign” with Peirce’s symbol.
- 9 15. According to some current conceptions, this would not necessarily be true in prehis-
10 tory: chimpanzees and early humans appear to be unable to make use of tracks in their
11 hunting behavior, if cognitive archaeology is to be trusted (Mithen 1996: 73). Actually,
12 Mithen’s examples suggest that apes are able to interpret auditory signs of the hunted
13 animals, but will not even recognize the animal itself if presented with it visually, which
14 suggests indexicality is not involved at all in this distinction. Indeed, many animals
15 “lower” on the evolutionary scale are obviously able to interpret traces. According to
16 this conception, the development of “art,” i.e., picture signs, is an even later accom-
17 plishment of human prehistory (Mithen 1996: 150).
- 18 16. About proper parts, perceptual perspectives, and attributes as different ways of divid-
19 ing an object and thus different indexicalities, cf. Sonesson (1989: I.2).
- 20 17. I am using “indexicality” here (just as “iconicity”) in the sense of something which
21 is necessary for a sign being an index (or an icon), but which, analogously to the quo-
22 tation from Peirce below, cannot function “as a sign until it is embodied.” See, in par-
23 ticular, Sonesson 1992a, 1993a, 1993c, 1994a, 1994b, 1998a, 2000b, 2001a, 2001b,
24 2003a.
- 25 18. Other pieces of valid criticism may be levelled against Piaget, as discussed in Sonesson
26 (1992b): the point that meaning emerges ontogenetically well before the attainment of
27 the semiotic function (as expressed notably by Trevarthen) is essential to the following
28 argument. The observation, made experimentally by Gardner et al., that the semiotic
29 function is not attained in different media, and in different respects, at the same age,
30 is important, but has nothing to do with the functional definition of this stage of
31 evelopment.
- 32 19. And it has nothing to do with Hjelmslev’s criteria for something being a sign, the
33 possibility of separating expression and content into smaller parts independently. See
34 Sonesson (1992a).
- 35 20. It could be said, as I have pointed out elsewhere (Sonesson 2000b) at least about divi-
36 nation, that these signs became interesting not as signs of Nature, but because they
37 were conceived as messages from some kind of Super-Subject; but this is not the essen-
38 tial point at present.
- 39 21. See the next section about the time characters of different kinds of signs.
- 40 22. This is the confusion that has permitted numerous structuralists to claim the presence
41 of “double” or even “triple articulation” in many kinds of semiotic resources. Some-
42 thing 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 numer-
ous 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 ele-
ments, but one element and a relation), and the third is always threefold (two of which

- 1 are relations). Of course, each second element may be expanded into further secondary
 2 elements, and each third element can take on new third elements.
- 3 26. This is of course not the sense in which we have talked about a double asymmetry.
 4 What is symmetrical in the relation between expression and content is the fact that
 5 some modifications of the expression have consequences for the content, and vice-versa
 6 — what is known after Hjelt as commutation.
- 7 27. If intentionality has anything to do with “intensions” in the scholastic sense, however,
 8 it apparently pertains to “second intentions,” i.e., the things as known, while the first
 9 intentions would rather correspond to what we nowadays consider to be the extension
 10 (but the actual distinctions are really more complex, as Deely [2001: 470] points out).
- 11 28. Reed (1996) notes some parallels between Gibson and the American pragmatists (with-
 12 out, however, referring to Peirce!). “Constructionism” should be understood here as in
 13 perceptual psychology, in opposition to Gestalt psychology and ecological psychology,
 14 not in the sense of Piaget or Vygotsky.
- 15 29. This concept, as well as contemporary biosemiotics, will be thoroughly discussed in the
 16 next section.
- 17 30. Whether it also has something to do with the Vygotskian concept of mediation is
 18 something that cannot be discussed here. May it just be noted in passing that the
 19 Vygotskian concept of mediation seems to reduce to language-dependence and, per-
 20 haps in a few instances, dependence on other semiotic resources that are signs in our
 21 sense, such as pictures.
- 22 31. And so, it appears, must Searle (1992: 127) have done, when describing “a dozen struc-
 23 tural features” (many of which we will encounter below in their Husserlean form) of
 24 consciousness, or else it must be true that it is sufficient to turn your look inwards,
 25 towards consciousness itself, in order to discover all the invariants of Husserlean
 26 phenomenology.
- 27 32. This model of time consciousness was used in theatre semiotics, and in literary semiot-
 28 ics, by members of the Prague school, notably by Mukarovsky.
- 29 33. A similar point is made by Gurwitsch (1979: 104) in terms of roles.
- 30 34. When latter-day constructionists such as Hoffman (1998) start formulating general
 31 laws, they do not seem to be so far from Gibson as the imagine. On the whole, how-
 32 ever, Hoffman’s laws seem to apply to pictures, rather than the perceptual world, more
 33 like those of Kennedy (1974).
- 34 35. One may recognize, in the first two cases, Frazer’s (1993 [1922]: 11) two principles of
 35 magic, according to the laws of contact and similarity. Even more obviously, the three
 36 cases are reminiscent of indexicality, iconicity, and symbolicity (in that order).
- 37 36. In formulating his laws of ecological physics, Gibson (1982: 218) claimed that, contrary
 38 to what is often thought, children do not spontaneously believe in magic. At least some
 39 kinds of divination would clearly be contrary to these principles of ecological physics.
 40 According to Piaget, of course, children do go through a magic stage, and anthropolo-
 41 gists apparently have found many adults believing in magic, too, even though the cases
 42 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 ideo-
 logical 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 sys-
 tem, however, it is difficult to make sense of this claim.

- 1 39. In this sense, the picture can never be a *noema*: whereas one *noema* will imperceptibly
2 fade into another, the pictorial surface has clearly fixed limits. The frame, however,
3 may interrupt lines that are easily continued in imagination.
- 4 40. This is the double sense of the notion of norm, which I have discussed in Sonesson
5 1996a, etc.
- 6 41. For the details of my critique, cf. Sonesson (2003a).
- 7 42. In the Pufendorf lectures, given at Lund University, May 30 to June 2, 2006. The distinction
8 between constitutive and regulative rules is made already in Searle (1969). Also
9 cf. Searle (1995).
- 10 43. I have presented the *Lebenswelt* as a particular kind of *Umwelt* in earlier papers of
11 mine, before realising that Deely (2001) had also made this comparison, without how-
12 ever entering a discussion of the import of the Husserlean notion.
- 13 44. It will be observed that we are here simply equating the triadic, or Peircean, conception
14 of the sign with the so-called dyadic, or Saussurean, one, in accordance with the inter-
15 pretation suggested in the first section of this essay.
- 16 45. This was independently noted by Søren Brier (2001).
- 17 46. Some schemes incorporate (some of) the results of their own use on ineffable objects,
18 and are themselves changed in the process, which is what Piaget calls *accommodation*,
19 and perhaps what Lotman calls “internal recoding.” Cf. Sonesson (1988: II.1.3.3).
- 20 47. My reason for saying so is that Uexküll insists that the three properties to which the
21 tick reacts form a whole, or an experiential world, to the animal. This is the sense in
22 which the *Umwelt* is a subjective concept. Cf. Brier (2001). In denying the robot an
23 *Umwelt*, Emmeche (2001) also puts his emphasis on the experiential whole. Not being
24 a biologist, I have some difficulty seeing why we have to suppose any connectedness
25 between the features to which the tick reacts.
- 26 48. Gurwitsch is right, I believe, in suggesting that this thematic structure translates to lan-
27 guage (and no doubt also to other semiotic resources), as most clearly illustrated in the
28 transposition of the functioning of pronouns from the perceptual world to discourse
29 (cf. Gurwitsch 1985); it is unfortunate, however, that he fails to attend to the difference
30 in structuring occasioned by the semiotic function.
- 31 49. Differences in the structure of attention have been discussed in very different quarters
32 already, although at a much higher level separating human beings and apes, as well as
33 children of different ages (cf. Tomasello 1999; Tomasello et al. 2005; Zlatev 2002,
34 2003).
- 35 50. Searle (1995) makes a distinction, which appears to be similar, between “intension-
36 with-an-s” and “intention-with-a-t.” The very same distinction was made in Sonesson
37 1978.
- 38 51. In this sense, propositional attitudes are intensional. If I think about, or even perceive,
39 the Evening Star, this is not the same thing as thinking about, or perceiving, the Morn-
40 ing Star, although the Evening Star and the Morning Star happen to be the same cele-
41 stial body, Venus. Although there is thus referential (extensional) identity, the two terms
42 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 inten-
tion,” 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.

- 1 55. I am certainly not out to deny the existence of a real world, which is a thesis Searle
2 (1995) rebukes in the second part of his book. I am simply not convinced that the de-
3 scriptions stemming from physics, considered as a natural science, are closer to this real
4 world than are those of ecological physics.
- 5 56. As so often, we find picture interpretation to be taken as the prototypical case of
6 perception.
- 7 57. As for what goes before even the *ens reale*, “being as first known,” which Deely (2001:
8 355) likens to William James’ “blooming buzzing confusion,” it could just as well be
9 identified with Saussure’s and Hjelmslev’s “amorphous mass” which forms the basis
10 for the structural divisions. According to phenomenologists inspired in Gestalt psychol-
11 ogy, such as Gurwitsch (1964), as well as more recent psychologists involved with
12 child development, such as Mandler (2004), this is not something that can actually be
13 experienced.
- 14 58. Another disadvantage of Searle’s criterion is that if what defines signs is that their func-
15 tion cannot be seen “from the physics,” then there would be no iconic signs.
- 16 59. In fact, Jakobson’s position as far as the different sciences goes is much less clear-cut
17 than I suggest here; cf. the passages referred to above. Rossi-Landi (1983: 73) actually
18 claims economics is a part of semiotics.
- 19 60. This would correspond to the notion of meaning as relevance discussed in the section
20 above.
- 21 61. In the sense of the semiotics of culture, as understood by the Tartu school. Cf. further
22 on the discussion of *Ego*, *Alter*, and *Alius*. This may be to suppose too much heteroge-
23 neity between tribes that exchange women; it applies much more properly to women or
24 men marrying into another society at the present time.
- 25 62. It must be noted, however, that, although he refers to both Saussure and Peirce, Horn-
26 borg (2001b) employs the term “sign” in a very wide sense, which includes what we
27 would call meaning, specifically, perception (“sensory signs”).
- 28 63. A sign system having only one sign, as Prieto (1966: 43) argued, would be for instance
29 be the white cane which signifies that its bearer is blind. This is so only because the *ab-*
30 *sence* of the white cane does not signify that the bearer is not blind, which is different
31 from sign systems having more signs, such as the flag of the admiral’s ship, where the
32 presence of the flag stands for the presence of the admiral on board, and the absence of
33 the flag for his absence.
- 34 64. If most things in our society may be bought for money, then the domain of validity of
35 the money system may not appear to be particularly limited. Here we must separate the
36 intensional and the extensional domain. Money redescribes everything from the point
37 of view of their monetary value. This only becomes a problem when the point of view
38 of monetary value is the only point of view that is sanctioned by society.
- 39 65. Perhaps there is some justification for Deacon’s view, for after all there is a famous
40 quotation from Peirce, according to which “symbols grow” — which would seem to
41 exclude icons and indices from similar regeneration.
- 42 66. In fact, perhaps only paradigms are required. At least on the level of complete units,
43 traffic signs do not allow for any (or only a few) combinations, although they certainly
44 offer a series of choices (cf. Posner 1989; Sonesson 1998c).
- 45 67. Much of my earlier work has been concerned to investigate the second property, icon-
46 icity: cf. Sonesson (1989, 1993a, 1994a, 1994b, 1995, 1996a, 1998a, 1998b, 2000a,
47 2001a, forthcoming a).
- 48 68. They can, however, be preserved as the capacity for reproducing them, that is, as the
49 sequences of repeatable actions, which is an instance of Donald’s mimetic memory
50 (for which see below).

- 1 69. In a similar way, Metz (1990) has claimed that a photograph, but not a film, could be-
2 come a fetishist object, in the Freudian sense, precisely because the former has more of
3 a material character. All cases considered by Innes are of course enduring artifacts, as
4 is the photograph (while the case of the film is more complex); it is only that their ca-
5 pacities for accumulation and communication respectively are more or less emphasised.
6 70. Piaget sometimes makes a distinction between the scheme and the schema, which we
7 will ignore here.
8 71. However, he seems unaware of the fact that a long tradition concerned with such an
9 “art of memory” was prominent all through the Middle Ages and the Renaissance; cf.
10 Yates (1966); Gomez de Liano (1982).
11 72. In a less precise way, the term “scheme” is also employed by the art historian Gom-
12 brich (1960), when considering the historical development of styles, and by the philoso-
13 pher Goodman (1968), in a discussion of the origin of metaphors.
14 73. Indeed, it was only recently that Clayton and Dickinson (1998) showed that western
15 scrub-jays remember where they cached different food types and discriminately recov-
16 ered them, depending on the perishability of the item and the amount of time that
17 elapsed since caching, which seems to suggest they are able to remember the ‘what-
18 where-and-when’ of specific caching events in the past.
19 74. Searle actually talks about the “imposition of functions” in a sense that seems consid-
20 erably wider than our sign function. Prieto suggested signs were special instances of
21 tool use, and Eco reduced tool use to the general case of meaning relationships. As I
22 have argued elsewhere (Sonesson 1989a: 133), I think both these theories are un-
23 founded, though signs and tools have in common being defined by something outside
24 of themselves, that is, they are *allo-functional*.
25 75. Such as having syntagms and paradigms, in Hjelmslev’s sense, transferred by Barthes
26 to things like clothing and menus.
27 76. Zlatev (in press a) defines “mimetic schemas” as “categories of acts of overt or covert
28 bodily mimesis.” This seems to be compatible with my characterization of schemes, in
29 particular as the mimetic schemas are said to be not necessary conscious but accessible
30 to consciousness.
31 77. This terminology is not Peircean, but derives from studies of child development. I be-
32 lieve there is an interesting analogy to be made, but I have no place to develop it here.
33 78. The notion of “symbol,” as the term is used by Piaget, also seems to confuse these both
34 senses of differentiation, as we have noted above.

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