Chapter 2:

Signs and Other Meanings — The Psychology and Archaeology of Semiosis

Preamble

Semiotics of pictures, it might be argued, can only exist if the picture is indeed a sign. There have been those who have denied this; others, instead of demonstrating the proposition, have simply taken it for granted. Even if somebody would take upon him- or herself the task of showing that the picture *is* a sign, it would naturally be suspected that the assignment must be different for those who follow the Peircean and the Saussurean tradition. In fact, in both conceptions, the notion of sign is basically taken for granted instead of being defined, and thus, starting out from any of these traditions, there is no non-arbitrary way in which the task may be accomplished.

A more explicit concept of sign is needed to begin answering the question. Some elements of such a definition may be gathered from the notion of semiotic function characterized by Jean Piaget; others, as we shall see, can be borrowed from the phenomenology of Edmund Husserl. This is a concept of sign which supposes there to be *other* meanings than signs – more elementary meanings, such as those given in ordinary perception. We need to account for the different meanings which are not signs. However, we also have to attend to the difference between the sign of the addresser and that of the addressee.

In this sense, the domain of semiotics is much wider than the sign: it is some more general property which might be described as “meaning”. There could thus be a semiotics of pictures even if pictures were no signs. However, the present chapter is designed to show that the picture must indeed be a sign, in the precise sense which I am going to introduce. In order to do so, we will have to attend to the place of the picture in the development of the semiotic function. There is, of course, no real evidence in phylogeny, except for the indirect way of comparing human beings with other animals; and thus, the facts must be searched out in child development as well as in the comparison between cultures.

In order to prepare for an adequate definition of the sign, we will start out, in the first section, by considering the *Lifeworld*, the world taken for granted, as being the foundation of all meanings. In so doing, we will suggest that phenomenology, and even some parts of classical semiotics, anticipated all the issued addressed in 4E cognition. This is not to deny that 4E cognition offers some new food for thought, to which we will turn in later sections. On the basis of the groundwork of the first section, the second section will offer a characterization of the notion of sign, which is sufficiently circumscribed for the question whether something is a sign or some other kind of meaning to be reasonable formulated and experimentally tested. This section is partly hermeneutic, because it harks back to the semiotic tradition (as defined in Chapter 1) in taking into account the distinction between the Aristotelean and the Augustinian sign, which is still a very relevant distinction. But, it is also phenomenological, in arguing for the advantage of characterizing the sign from the point of view of the addressee, rather than the addresser.

Since we relied a lot on psycholinguistic evidence in the second section, we need to show, in the third section, that the findings of the second section also apply to the picture sign, again basically on the evidence of child development, part of which was assembled within cognitive semiotics. Then, in the fourth section, we pursue an approach which is in many ways parallel to the one followed in the second section, but considering meaning as an act, and thus, as communication. Nevertheless, in so doing we will have to spend a lot of time specifying what exactly is meant by the term communication, since this is a term which has been greatly abused, not by Shannon and Weaver, who had a different agenda, but by those you have used their definition within semiotics and, more generally, within the social and human sciences. This is also where we will be able to explore more deeply the sense in which the sign is basically an experience of the addressee, and the consequences following from this perspective. Taking a clue from a theme explored in the fourth section, the notion of sedimentation, we aim to show, in the fifth section, that sedimentation can account for the different varieties of extended mind. Finally, in the sixth section, we have come full circle, or, more exactly, we have begun to engage into a deeper level of winding of the same helix we visited at the beginning of the chapter: we will consider the precise structure of the *Lifeworld*, taking our point of departure in Schütz' notion of a system of relevancies, which may have some affinity to what Eco, in his late work, termed the Encyclopaedia.

2.1 The *Lifeworld* as the Original Science of Normalcy and Normativity

The idea of a commonsense world has been posited numerous times in philosophy as well as in the social sciences, often suggested independently by different scholars. Husserl first brings up the notion of the *Lifeworld* so as to explain the foundation on which the models of the natural sciences are constructed, both serving as the primary objects which are studied and transformed by the model, and as the commonsense world in which the scientists are accomplishing their work. Both aspects are important: Indeed, the scientist cannot treat the accelerator permitting him to study the electrons as being at the same time a bundle of electrons. Students of Husserl such as Aron Gurwitsch, Alfred Schütz, Maurice Merleau-Ponty, Jan Patoĉka, Jan Mukařovský and Herbert Marcuse considerably extended, not the meaning, but the function of the notion of *Lifeworld*, sometimes using it to explain social reality itself. We owe to Schütz, in particular, the description of the *Lifeworld* as "the world taken for granted". In fact, Husserl himself had a lot to say in his posthumous papers about the social character of the *Lifeworld*, divided into Homeworld and Alienworld. Outside of phenomenology proper, however, it is no doubt James Gibson's notion of "ecological physics" which comes closest to, while also specifying, the Husserlean notion of the *Lifeworld*.

Various exponents of analytical philosophy and cognitive sciences introduced partly overlapping labels such as "naïve physics" and "folk psychology", and the same thing could be said of the "semiotics of the natural world", parallel to the "semiotics of natural language", envisaged by Algirdas Julien Greimas. So does, however implicitly, the abundant recent literature concerning the embodied mind and/or 4E cognition (Menary 2007; Rowlands 2010; Wheeler 2005). The idea that meaning is actively shaped and entertained is conspicuously formulated in Husserl's late work, and it is made to play a star role in the phenomenology of Merleau-Ponty. Even if its import is less clear, Peircean "pragmaticism" could also be enlisted here. The same is true of embodiment, in the sense of meaning always being conveyed by and through the body of the experiencing subject. The embeddedness of meaning is spelled out already in Husserlean phenomenology, both in relation to time consciousness and to the spatial layout of the world of our experience. It is made even more manifest in Aron Gurwitsch's theory of the field of consciousness. As for the idea of extended mind, it has a long history in philosophy, sociology, and social psychology, but Husserl certainly added a novel perspective when focusing on "the origin of geometry". Embodiment, embeddedness, enaction, and

extension are all ingredients of the *Lifeworld*. I am not claiming that the notion of 4E cognition has been pre-empted by phenomenology. Nevertheless, the phenomenological approach can certainly enrich the discussion.

2.1.1 The *Lifeworld* as Embodied and Enacted

In a sense, there are as many *Lifeworld*s as there are cultures and times. But Husserl was interested in the general principles, or invariants, which must obtain in any possible *Lifeworld*. To begin with, he does away with everything which is peculiar to individual and cultural *Lifeworld*s. As an illustration, Husserl (1962: 497f) presents us with a hypothetical Bantu, who is unable to see our parks, houses, and churches for what they are: to him, they may be non-identified buildings, or just unidentified, stationary objects. It might have been added that the Missionary or the Colonial Officer often enough also failed to discover the cultural layers of the Bantu *Lifeworld*. Indeed, to pick a different example, it takes some special knowledge to identify the building known as "maloca" to the Tikuna people in Colombia (See Mendoza-Collazos and Sonesson 2021). Aron Gurwitsch (1974: 20ff) is no doubt right in observing that in each *Lifeworld*, which is the *Lifeworld* of a particular sociocultural group, cultural meanings redefine perceptual experience to the point of making the invariants of the *Lifeworld* inseparable from the given experience. But the Bantu example suggests that Husserl is already making a structural comparison between cultures: the church-ness of a building becomes separable from its mere building-ness, because there are cultures which do not recognize the former.

According to Husserl, however, the principal property of the *Lifeworld*, is that everything there is given in a subjective-relative manner. This means, for example, that a thing of any kind will always be perceived from a certain point of view, in a perspective that makes a part of the object form the centre of attention. What is perceived is the object, though it is always given through one or more of its perspectives or *noemata*, which themselves are unattended. Looking at a die, or any other cube, we may see one of its sides rather directly and two others in perspectival distortion, while the remaining sides are presently out of view. For *Lifeworld* consciousness, however, this constitutes the seeing of the entire die. When we are confronted with the-cat-from-one-side, the-cat-from-above, the-cat-from-the-front, etc., what we *see* is all the time the same invariant cat. To Husserl, this seeing of the whole in one of its parts is related to *the etc. principle*, our knowledge of being able, at any one point, to turn the dice over, or go round the house, to look at the other sides ("Ich kann immer weiter"). This principle applies to the temporal and the spatial organization of the world alike. In time, it accounts for our expectancy, at every moment, that life will go on, or that something will change, or something

more definite, such as that the dice will turn out to have a certain number of eyes on the hidden sides. The same point was made much later by the psychologist James Gibson (1982). But, as Husserl says, formulating an apparent paradox, the relativity of the *Lifeworld* is not itself relative. That is, the relativity of the perspective in the *Lifeworld* is one of its invariant features. In this sense, Husserl's *Lifeworld* is already a world in which you act, anticipating not only some aspects of contemporary "enactionism", but answering in advance also Patoĉka's (See Kohák 1989) early critique, according to which the *Lifeworld* should be defined by action, rather perception, as he takes Husserl to do. But to Husserl (as later on to Gibson) perception is already action.

Husserl is adamant that the world as it is experienced is relative to an ego, which, as such, is already embodied. The only way to be situated in the *Lifeworld* is by having a body. This idea, which is usually attributed to Merleau-Ponty (1945), stems in fact from the then-unpublished manuscripts which the latter spent his time reading at the Husserl Archives in Louvain. An important point, as we shall see in the following, however, is more clearly made by Husserl: that there is the body as seen from the outside, comparable to other objects ("Körper"), and the body as experienced by the subject ("Leib"), which in experience come to be compounded ("Leibkörper").

2.1.2 The *Lifeworld* as Embedded

Like the idea of embodiment, that of embeddedness was anticipated by phenomenology. Husserl observes that everything in the *Lifeworld* is given in "open horizons": that is, reality is not framed off like a picture, but goes on infinitely, however vaguely indicated. Beginning with the theme or centre of attention, the experienced world gradually fades away, without there being any definite limits, and a modification of the centre of attention is sufficient to extend the field so as to include some distinct experience. Every object has an outer horizon, i.e., the background field of other, nearby objects, and an inner horizon, the parts and attributes of the object that are presently out of view or just unattended. To both the horizons, the etc. principle applies. The temporal organization of the *Lifeworld* is similar to the spatial one. In the consciousness of each moment lies embedded the consciousness of the immediately following moment, the protention, and the consciousness of the immediately preceding moment, the retention. Each protention will contain its protentions and retentions, and so will each retention. They may be general and vague, like the expectancy that life will go on, or that something will change, or more definite, like the expectancy that the die will have a certain number of eyes on the hidden sides. Protention and retention should not be confused with real anticipation and

memory, which are acts at another level of awareness, which are actively initiated.

More specifically, as Gurwitsch (1985) has observed, three sets of data are always concomitant with any particular mental act, a certain segment of the stream of consciousness, a portion of one's own body, and a certain sector of the perceptual environment. They are all given in open horizons, although those of the body are obviously more limited in scope, at least pertaining to the outer horizon. Indeed, the outer horizon of the body rapidly becomes part of the perceptual environment, which is what accounts for the embeddedness.

Every particular thing encountered in the *Lifeworld* is referred to a general type. Typification applies to all kinds of objects, even to human beings. Apart from family members and close friends, Alfred Schutz (1962) added, other people are almost exclusively defined by the type to which they are ascribed, and we expect them to behave accordingly. However, types are not really like scientific concepts, though the former may initiate the latter. Husserl's description of geometry as idealization supposes that geometrical shapes do not exist as such in the *Lifeworld*. "In perceptual experience, the spatial shapes of things are determined only as to type – a margin of latitude is left for variations, deviations, and fluctuations" (Gurwitsch, 1974: 26). For instance, there are no circles in the *Lifeworld*, only things with "roundish" shapes, "circular physiognomy". In fact, when psychologists of the Gestalt School tell us about "good forms", Gurwitsch (1974: 49) argues, they must be thinking about *Lifeworld* types, not geometrical shapes, since geometrically this is sheer nonsense. Moreover, time, velocity, causality, and so on are experienced in the same manner. Another example is the typical recipe for baking Grandma's cake: we are told to use "a little" of a certain ingredient, "just what is necessary" of another one and so on. French recipes still tell us to use quantities of butter corresponding to an egg or a walnut ("noix de beurre", etc.).

2.1.3 Regularities in the *Lifeworld*

Closely related to the typifications are the regularities which obtain in the *Lifeworld*, or, as Husserl calls them, "the typical ways the things have of behaving". Sometimes he also speaks of the particular causalities of the *Lifeworld*. As Gurwitsch (1974: 49) observes, "it is not from science, either Aristotelian or Galilean, that we learn that stones, when lifted and released, fall down. It is a matter of everyday experience in the *Lifeworld*, that water can be boiled and that, when further heated, it evaporates." In fact, once an object has been assigned to a particular type, we know more or less vaguely what may be expected from it in the future, i.e., what is "protained', and we can then learn to manipulate desirable changes ourselves. Again, recipes

are a case in point: the baking of bread, for instance, supposes the reproduction of certain regularities, which are known to be effective, although science is just beginning to investigate why this is so.

Many of the “laws of ecological physics”, formulated by James Gibson (1982: 217ff), and which are defied by magic, are also such “regularities /that/ are implicitly known”: that substantial objects tend to persist, that major surfaces are nearly permanent with respect to layout, but that animate objects change as they grow or move; that some objects, like the bud and the pupa transform, but that no object is converted into an object that we would call entirely different, such as a frog into a prince; that no substantial object can come into existence except from another substance; that a substantial detached object must come to rest on a horizontal surface of support; that a solid object cannot penetrate another solid surface without breaking it, etc. Clearly, many of these regularities do no longer obtain according to physics as a natural science, but they are necessary for the human environment to hold together.

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

Another science of normalcy based on insights about the regularities of the *Lifeworld* is the time geography of Torsten Hägerstrand (1983) which is concerned with general invariants of space and time, which impose restrictions on the liberty of action open to individuals or groups, stating what is possible and impossible in given situations. These restrictions are defined in terms of space and time, but do not take their origin in natural or economical laws; rather, they result from the fact that phenomena tend to crowd, or affect each other, without having any other kind of relation explicable from general rules. Indeed, according to Hägerstrand (1983: 23) each point in the time-geographical now is best understood as a bundle of processes, that is, “in terms of its double face of graveyard and cradle of creation”.

Such experiences are what Husserl terms "pre-predicative experiences", which may take

the form of, without being, predications. These are reminiscent of what Charles Sanders Peirce termed abduction, which is the operation concluding from one singular fact to another singular fact by means of positing a hypothetical regularity (Peirce, 1934, §172). Nevertheless, since Peirce insists that abduction introduces new ideas, it must be supposed to seize on the regularity at its initiation, that is, to use Gurwisch's example, the abduction would occur when someone first realized that if you place a recipient containing water on a hearth, the water will eventually boil and thus serve to prepare any food stuff submerged into the water. According to Peirce, abductions more often than not turn out to be correct, thus initiating the generalization of natural science, which is due to human beings being made up of the same stuff as the universe which they are making the abductions about (Peirce, 1934, §173). In fact, it would seem that many human abductions, from Aristotle and Ptolemy onwards, have gone wrong, when judged by the touchstone of the natural sciences. It doesn't help that we are indeed made of the same stuff as some parts of the rest of the universe, as long as we have no awareness of this fact, nor, in particular, of how this has come about. As Giambattista Vico (1988: 45) observed long ago, human beings have the faculty to understand things made by human beings, precisely because they are human-made. This is why we can understand the *Lifeworld* and its abductions (See section 1.2.2).

2.1.4. The *Lifeworld* as Distributed and Extended

Another important point made in Husserl's posthumous writings is that the *Lifeworld* is always a communal, or intersubjective, world. As argued more recently by Michael Tomasello (Tomasello 2009), human beings are "born and bred" into collaboration, in a way not seen in any other species. Apart from being embodied, embedded, and/or enactive, the human mind is said by contemporary authorities in the cognitive sciences to be extended. But the latter term is made to carry too great a burden of meaning. When the phenomenon was first broached in cognitive science by Edwin Hutchins (1995a, 1995b) using the term "distributed cognition", it was said to involve a kind of thinking parcelled out to a collection of individuals and artefacts during a particular work practice such as the collaboration going on in the cockpit or on a ship. But this leaves undecided what amount of thinking occurs between the different persons involved, and to what extent it is somehow encapsulated in the cockpit as a physical space. And this is a fundamental distinction, since the agency of persons is direct, but that of objects, even if they are as complex as a cockpit, is indirect, that is, it depends on remote intentions accumulated onto the object (See Mendoza-Collazos & Sonesson, 2021).

Long before the invention of the cockpit, cognitive tasks, in this general sense, was no

doubt delt out to several individuals, for instance during a hunting party, when constructing the ancestral long house, or when executing a ritual, all tasks which may involve a smaller amount of (ready-made) artefacts, but which still require an interaction between the participating minds. Retaining the term distributed cognition for this kind of practice, we should distinguish it from extended mind, which involves the accumulation of meaning onto inanimate objects, whether they are wide-ranging systems, such as geometry, discussed by Husserl in this respect, and language, or singular concrete objects, such as the tools used for hunting, for constructing an ancestral house, or to dress up for a ritual. Extended mind has to be extended from somewhere, that is, from an un-extended mind, and if no such is around, the extended mind will be meaningless, as was the Rosetta stone before Champollion came around, and actually more so, because even before Champollion, the figures on the Rosetta stone, and many other stelae, where recognized as some kind of writing (giving rise to all kinds of wild hypotheses, from Kirchner to Leibniz). The meaning of an artefact is the result, in Husserl's terms, of genetic sedimentation, if it has been endowed by meaning in our lifetime, or of generative sedimentation, if the meaning has to be traced back to the cognitive work of earlier generations. Distributed cognition, in the limited sense in which we will retain the term, however, is the result of negotiations between particular minds, which may be more or less grounded in genetic and/or generative sedimentations. To use the Scholastic term, also used by Husserl, but now more well known from the work of Pierre Bourdieu, it involves a *habitus* to a greater or lesser extent.

As we noted above, types are preponderate in the *Lifeworld*, largely because it is a social *Lifeworld*. But the type should be understood as a reference point, which allows for all kinds of variations within wide limits. It is a prototype, or an ideal type, not a stereotype. Another important feature of the social world, not, as far as I know, taken up by Husserl, but emphasized by Jan Mukařovský (1970, 1974), is the gradual scale, in any society, going from what is not recommended to what is manifestly prohibited, that is, on my terms, from normalcy to normativity (Sonesson 2010). Husserl does, however, have something to say about the way the *Lifeworld* is lived from within, as a *Homeworld (Heimwelt)* opposed to the *Alienworld (Fremdwelt)* of all the others. Thus, he anticipates the constellation of oppositions characterizing the model of cultural semiotics proposed by the Tartu School of semiotics. Nevertheless, like the Tartu School, Husserl fails to theorize the potential expansion of the Homeworld to include ever wider parts of humanity (the *Alterworld*), which, as I have suggested elsewhere, is the task set by the Enlightenment, which, in spite of everything, certainly has progressed since the task was set (See Chapter 8).

2.1.5. The *Umwelt* as the Basic Layer of the *Lifeworld*

Coming from a very different tradition, Jakob von Uexküll (in Uexküll and Kriszat 1983) introduced the notion of *Umwelt* to serve as some kind of world taken for granted by specific animal species – although, of course, the tick and its kin, as epitomized by von Uexküll, do not have the choice of taking anything for granted or not. As opposed to an objectively described ambient world, the *Umwelt* is characterized for a given animal, in terms of the features which it perceives (Merkwelt) and the features which the world 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 the skin of its host. 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 the 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 (See Figure 2.1).

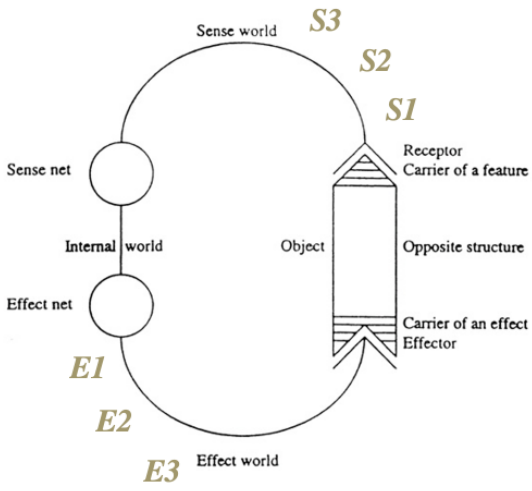

Figure 2.1 The odour of butyric acid (S1) causes the tick to abandon her post on top of the blade of grass/bush and (E1) fall blindly downward toward her prey. If she is fortunate enough to fall on something warm (S2) then she has attained her prey, the warm-blooded animal, and thereafter needs only the help of her sense of touch to find (E2) the least hairy spot possible (S3) and embed herself up to her head in the cutaneous tissue of her prey (E3). She can now slowly suck up a stream of warm blood.

The question arises, of course, how von Uexküll knows how it feels to be a tick. The answer is that he doesn't, or at least so he claims. He simply observes the anatomy of the animal,

its organs of perception and its ways of acting on the environment. The notion of *Umwelt* is in this respect very similar to the later notion of autopoiesis, formulated by Francisco Varela and Humberto Maturana (1987), but the latter puts much more the emphasis on the membrane which separates the organism from the surroundings, as well as the couplings which span this barrier. The reason we consider it here, however, is that it features some structural similarity to the notion of *Lifeworld*, both in its closure and its potential of going beyond. Still, the *Umwelt* does not have necessarily have any open horizons, though those of the chimpanzee are far from being as fenced in as those of the tick. And while the tick only trades in rigid stereotypes, the chimpanzee is fairly open to the variations of the prototype. Nonetheless, human beings may be largely alone in being able to take a stand outside of their niche, and this is what makes their *Umwelt* into a *Lebenswelt*.

In present-day Biosemiotics, von Uexküll's notion of the functional circle has been treated as being equivalent to that of the Peircean sign. We will suggest later that what Peirce termed the sign, as he himself recognized later in life, is insufficient to single out the specificity of the sign in relation to other kinds of meaning (See section 2 of this chapter). Nonetheless, even it is taken to specify some kind of meaning much broader than the sign, Peirce's notion of sign is too specific to account for the functional circle, in the sense in which it is also accomplished by the tick. If we take the Peircean notion of representamen to designate the perceptual experience of the subject involved, we will already have a problem of telling apart the object of the sign and its interpretant, in Peirce's sense, but an even more acute issue would be how to distinguish what Peirce calls the "immediate object" and the "dynamical object", let alone the "immediate", the "dynamical" and the "final interpretant" (cf. Figures 2.7 and 2.8). This model brings to mind a very complex process of interpretation, which is exactly the opposite of what is suggested by von Uexküll's example of the tick. This is why we will go on propose, in the next section, a distinction between filtering, which closes off the world of experience from any further exploration, and relevance, which organizes meaning at different levels of availability, without foreclosing further investigation. It is only in the latter case that the Peircean notion of sign makes sense, even when it is understood to involve meaning within a much wider scope than the domains of signs.

2.1.6 Filtering, Relevance, and the Field of Consciousness

It is useful to distinguish relevance from filtering, although they have something in common: the picking up a limited set of features from the totality of the environment. However, *relevance*, strictly speaking, does not exclude anything: it merely places some portions of the

environment in the background, ready to serve for other purposes. Thus, in the case of language, properties which are not relevant for determining the meaning of words and sentences, still may serve to inform us about the dialect, or even identify the person speaking (Hjelmslev's "connotational language"; cf. Sonesson 1989 and Chapter 5).[1] In contrast, *filtering* simply crosses out that which is not let through the filtering device.

The difference between relevance and filtering no doubt has something to do with the capacity to be aware of the borders of one's *Umwelt*. It requires some kind of "metacognition", or, as cognitive scientists are wont to say, "a theory of mind" (without here entering into the difference between these notions: see (Sonesson 2016c). To the tick, to paraphrase Wittgenstein, the limits of its language are the limits of its world, but not so (in spite of Wittgenstein) to human beings. Or rather, the limits of our *Umwelt* are not the limits of your *Lebenswelt*. If the *Umwelt* is *an organized network of filters and/or relevancies*, as I suggested above, it seems that maturing in the child consists in breaking out of one *Umwelt* and going on to another, broader one, until reaching the human *Lifeworld*. Between each *Umwelt* and the next one, which encompasses it, there is always (to adapt Vygotsky's term) a "zone of proximal development". In this sense, ontogenesis itself forces us to go through a series of "finite provinces of meaning", in the sense of Alfred Schütz (1962). A temporal dimension is thus added. I suggested this scenario rather cavalierly in earlier papers (Sonesson 2009a, 2009b), but, since then, it has been developed in exemplary detail, no doubt independently, in several papers by Morten Tønnessen (2009, 2014a, 2014b).

It might therefore be said that what most perspicuously differentiates the tick from the human being (without prejudging for the moment on the question where the exact border is to be placed) is the structure of the field of consciousness: in Gurwitsch's (1957; 1964; 1985) terms, human consciousness is made up of a *theme* which is the centre of attention, a *thematic field* around it consisting of items which are connected to the present theme by means of intrinsic links permitting it to be transformed into a theme in its own right, as well as other items present "at the *margin*" at the same time, without having any other than temporal relations to the theme and its field (See figure 2.2).[2] The tick, of course, has access neither to the thematic

[1] Indeed, relevance lets the difference between "immediate object" and "dynamical object" subsist, in the vague sense which they retain in the "Scholastic" interpretation of Peirce (see section 2.2.4): that which is directly given, in contrast with that which is potentially given for further exploration. Thus, in Bühler's sense, the principles of "abstractive relevance" and "apperceptive supplementation" still apply (See section 2.2.5).

[2] Gurwitsch is right, I believe, in suggesting that this thematic structure translates to language (and no doubt also to other semiotic resources), as most clearly illustrated in the transposition of the

field nor to the margin. In a way, this is simply another way of saying that the tick cannot reach beyond the immediate object, in Peirce's sense. But Gurwitsch's analysis breaks up that of Peirce: it implies that, not only is there no way for the tick to "go on from here" (the Husserlean etcetera principle), its experience of the here and now is also very limited. In other words, there is no real "immediate object" to the tick, not only because it is not opposed to a future more extensive "dynamical object", but because even in the here and now, what is immediately experienced does not appear as a thematic structuring, or perspective, on such a dynamical object.

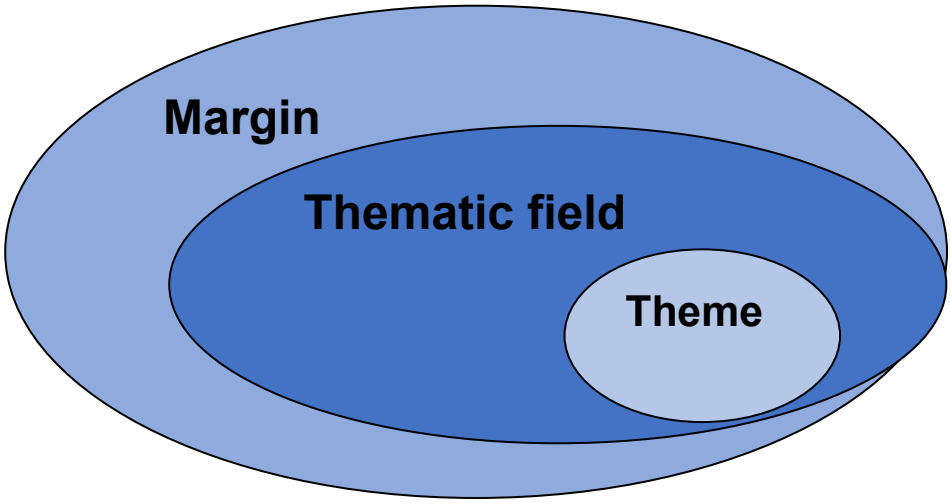

Figure 2.2. The thematic field, as conceived by Gurwitsch

I have suggested, then, that an important difference between human beings and (some) other animals consists in the thematic structure of consciousness, or, in other words, the function of attention. Differences in the structure of attention have been discussed in very different quarters already, although at a much higher level separating human beings and apes, as well as children of different ages (e.g. Tomasello 1999) – and we will have reasons to return to this notion in the following (notably in sections 2.1.6, 2.4.4 and 2.6.4) As noted above, there really are two differences between the way in which ticks and other lower animals have access to meaning and the human way. The first of these is the thematic structure: there is no immediate object, because there is no dynamical object in relation to which it may be seen as an adumbration. But there is more to it: there is no representamen, either, if we identify this term with expression, because no distinction can be made between such a representamen and the object, either immediate or dynamic.

functioning of pronouns from the perceptual world to discourse (cf. Gurwitsch 1985); it is unfortunate, however, that he fails to attend to the difference in structuring occasioned by the semiotic function.

2.1.7 The Body in the *Lifeworld*

The tick never gets to take an outsider's view of its functional circle. In fact, it doesn't even have access to an insider's view or the circle, since it is entrapped in it. The case of human beings is different. Not all human beings are philosophers, but there are certainly occasions in the life of any human being when s/he becomes aware of the stations between the features perceived and ensuing acts targeting the perceived world. And, if not, human beings can always rely of the generative sedimentations of the experiences of other human beings. One way to get a grip at the observations made inside the circle may be to have recourse to the experiences sedimented in human languages.

The most immediately relevant material comes from a series of studies purporting to investigate "metaphors we live by" (Lakoff and Johnson 1980b). In their study of the basic metaphors which underlie both poetry and ordinary language (Lakoff and Turner 1989:160 ff.) describe a "cultural model", which they call "the great chain of being". This model, which "places beings and their properties on a vertical scale with 'higher' beings and properties above 'lower' beings and properties" (1989: 167), has been studied by historians of ideas since the time of Arthur Lovejoy, but Lakoff and Turner show it to be still current and active in a lot of everyday thinking. This "commonplace theory about the nature of things" (1989: 170) no doubt constitute a mayor contribution to the study of *Lifeworld* invariants, but only at the price of its components being deprived of the status of metaphors. What Lakoff and Johnson (1999) calls "orientational metaphors" is clearly something much more fundamental, as was also recognized by Joseph Grady (1997) who termed them "primary metaphors". As they go on to suggest, most of them (?)

> have to do with spatial orientation: UP-DOWN, FRONT-BACK, IN-OUT, ON-OFF, DEEP-SHALLOW, CENTRAL-PERIPHERAL. These spatial orientations arise from the facts that we have bodies of the sort we have and that they function as they do in our physical environment. Orientational metaphors give a concept a spatial orientation, for example, HAPPY IS UP. The fact that the concept HAPPY is oriented UP leads to English expressions like 'I'm feeling up today' (Lakoff and Johnson 1980: 461f).

and in the following pages they offer a long list of "metaphors" based on the first dimension, that is, UP-DOWN:

> Happy is up; sad is down. /---/ Conscious is up; unconscious is down. /---/ Health and life are up; sickness and death are down. /---/ Having control or force is up; being subject to control or force is down. /---/ More is up; less is down. /---/ Foreseeable future events are up and ahead. /---/High status is up; low status is

> down. /---/ Good is up; bad is down. /---/ Virtue is up; depravity is down. /---/ Rational is up; emotional is down. (Lakoff and Johnson 1980: 462ff).

For each of these cases, they add some "physical basis", in accordance with our human way of being in the world; thus, for instance, happy is up and sad is down because "dropping posture typically goes along with sadness and depression, erect posture with a positive emotional state" (Lakoff & Johnson, 1980: 462; 1999). Further light is thrown on this idea by Johnson's (1987: 74) observation, that, in learning to stand up, "the baby becomes a little *Homo erectus*", i.e. an incarnation of the human being as being (or becoming) different from other animals, something which is epitomized by the erect posture. Taking the lead from such passages, we can understand embodiment, not, as Lakoff & Johnson seems to do, as some kind of neural structure, for the existence of which there is no serious proof (See Fuchs 2018), but as the presence of the human being in the *Lifeworld*, the world taken for granted.

Picking up Grady's term, Lakoff and Johnson (1999: 59) suggest that "primary metaphors" "are a consequence of the nature of our brains, our bodies, and the world we inhabit". This would be fine if, instead of the brain, they had used the term "mind". Then it could involve the movements as executed by our body underlying both the physical constraints and those of the socio-cultural environment as experienced by the mind. This would make sense if conceived in a development perspective, in the vein of Jean Piaget, according to which characteristic actions normally performed by small children are at an earlier stage reflected and transformed into schemes of interpretation, not, however, at the cognitive level, investigated by Piaget, but at the level of what he terms figurativity (Piaget 1975), which could be understood as the bodily residue of our actions (See Sonesson 1989). Some of the passages in Johnson's (Johnson 1987. 74; 2005, 2017) own writings would allow for such an interpretation, but the ambiguities are brought to an even higher level by Grady and Ascoli (2017: 29f) arguing that "we are pre-wired to have associated experiences" and that "primary source and target concepts are grounded in experiences that are, in some meaningful sense, part of humans' innate cognitive repertoire".

This is not the place to rehearse my arguments for Lakoff & Johnson's metaphors, including the primary ones, not being metaphors (See Sonesson 2019b and Chapter 7). In this context, however, what is important to demonstrate is that so-called primary metaphors are something different. In his recent book, Johnson (2017: 53f) invokes the venerable authority of John Dewey, according to whom phenomena like this are "not just metaphors". On the face of it, this authoritative pronouncement seems to go against Johnson's own categorization of the

phenomena in question as metaphors, as do the repeated affirmation, in the same book, according to which there is no similarity between "source" and "target", which squarely contradicts the very notion of metaphor. But he is at least partially right. As we would expect from invariants of the *Lifeworld*, they are imaginative extensions of our subjective-relative position in the middle of the *Lifeworld*, from which the directions go up and down, and time goes on and back. To return to the case of UP-DOWN, it derives its meaning from the experiential fact of the human body being part of the whole world experienced, and thus being part of what is up in the world. In this sense, we are really dealing here with a synecdoche, or more precisely, since this is not necessarily a relation between signs, with a part-whole relationship (a factoriality in the sense of Sonesson 1989, etc.). And, in spite of what Johnson claims, as a part of the whole it necessarily contains some configurational shapes, which it shares with the whole, i.e., it comprises some similarity.

To a human being, no doubt, the upper part of his/her own body is not just any part of the upper sphere. It is a marked part of a whole. And it is marked because, at the same time as it is a part of that whole, it constitutes the point of view from which the whole is conceived. But this is precisely what is meant by embodiment in Husserlean phenomenology: it involves the body as experienced (*Leib*), and the physical body (*Körper*) only as it leaves its imprint on the experienced body. This distinction accounts for the difference between the *Umwelt*, defined by the anatomy of the organism, and the *Lebenswelt*, as experienced by the organism. In the case of the human being, who is rather alone in the animal world (or who at least tends to think so) in standing upright, happiness and all other positively evaluated predicates are naturally associated with the superior position. In human experience, there is a certain similarity, but only because of a continuity, that of the (paramount) part to the whole.

2.1.8 The Cultural *Lifeworld*

Lakoff's and Johnson's "primary metaphors", whatever else they are, constitute examples of cultural meanings ascribed to the world in which we live as human beings. Some of them, probably most, may form part of the invariants of the human *Lifeworld*, while still others are invariants of some particular socio-cultural *Lifeworld*. As such, they are, in John Searle's terms, "institutional facts". As we will see, they are also what John Deely calls mind-dependent objects or, with a Scholastic term, *ens rationis.* Interestingly, Searle also refers to mind-dependant objects, for which, unlike Deely, he also uses the term language-dependent objects. Both think this characterization is sufficient to account for signs. I think they are wrong. At the same time, I think they are on to something important.

According to Deely, the primary distinction made by the Scholastics concerns *ens rationis,* which he translates as ‘‘mind-dependent being’’, and *ens reale*, which he terms ‘‘mind-independent being’’. According to Thomas Aquinas, as this is presented by (Deely 2010a: 266ff), individuals and their properties are mind-independent, whereas mind-dependent objects are of many kinds, including, apart from concepts in the more obvious sense, “cultural identities” such as “writing material”, “inn”, and “judge”, and “social identifications” such as “in-group”, “safe area”, and “prey”. These are clearly Deely’s examples, not those of Aquinas or any other Scholastic, since many of them could not have a cultural meaning already at the time of Aquinas. In an earlier book, Deely (2001: 353ff) mentions the fact of belonging to specific cultural groups such as Christians, Muslim, New Age, etc. as being mind-dependent objects. He also lists as *ens rationis* such ‘‘cultural identities’’ as ‘‘writing material, book, statue,’’ as well as ‘‘estate, guildhall, commons, prison, inn, etc.’’ To identify something as a ‘‘book’’, just to pick an example, certainly meant very different things in Antiquity, in Ancient China or Mexico, and at present.[3] Thus, this would seem to be an eminently socio-cultural meaning, but the notion of “writing material” has a relatively more extensive prehistory. The notion of the statue could possibly have an earlier and larger history, if the Berekhat Ram figure is identified as the semblance of a woman (which would, in addition, imply that this piece of stone is a sign), as some have claimed. But even to the extent that it can be considered to be a piece of stone modified by purposeful actions executed by human beings, it still carries additional meanings.

Searle (1996: 43) describes the constitutional rules giving rise to “language-dependent”, or institutional, reality using the formula ‘‘X counts as Y in C.’’ This is a better description than the traditional “standing for” (“aliquid stat pro aliquo”). Apart from language itself, Searle applies this formula to paper money and chess. It may well be said of a chessman (or a button having been substituted for it on the board, as Saussure suggests) that it counts as an item apt to move in certain specified ways on the board. Indeed, it makes sense to say that a particular human being “counts” as a judge, and that a particular building “counts” as an inn, but not that that human being or that building stands for “a judge” or “an inn”. On the other hand, to say that an expression (of a word, a gesture, a picture, and so on) counts as its content, however, is

[3] But most books also contain (at least some specimens of) signs known as writing. There is an ambiguity here: ‘‘writing material,’’ if it implies such things as ‘‘pen’’ and ‘‘paper”, is comparable to ‘‘inn,’’ in the sense that certain ‘‘physical’’ configurations identify something as being a pen or not a pen, a paper or not a paper, an inn or not an inn, etc. But ‘‘writing’’ is something else: it is a realization of a system of signs. See further section 2.2 and 2.5.

fairly misleading. Signs may really be surrogates for things, in a way, but they fulfil different functions than the things themselves. They permit us to take a stand on things, so as to choose, for the purpose of the *Lifeworld*, the meaning ascribed to these things. No chessman, nor even a move of a chessman, really counts as a statement modifying the meaning of the game of chess, let alone that which is outside of the world of chess.

All the same, according to (Deely 2001: 351), there is a sense in which judges, inns, and writing material, just as chessmen and money, are individuals, and thus real objects. The further properties which these things acquire ‘‘as they come to exist within the mind’’ are ‘‘second intentions,’’ but these can become part of ‘‘actual existence,’’ that is, of mind-independent being. For someone to be a judge, a priest, or a teacher, he must first be someone who exists. Hence the quality of being a judge, a priest, etc., is a second intention, and thus, part of mind-dependent being. But, apart from these properties belonging to the man as part of his individual being, they are ‘‘exercised not only subjectively but also in the objective order /---:/ According to their being in terms of the *ens reale/ens rationis* distinction, they are cognition-dependent characteristics; yet they belong to the judge in his actual objective existence as a functioning member of society” (Deely 2001: 353). Or, as Deely (2010b: 102) puts it elsewhere, semiotics “recovers the *ens reale* insisted upon as knowable by scholastic realism; yet, at the same time, semiotics demonstrates the objectivity of *ens rationis* in the social construction of species-specific realities among biological organisms”.

We may apply to Deely’s examples what Searle (1999: 154) observes (only in passing, unfortunately) about the chair and the knife, that their capacity to perform the particular function is ‘‘built into their physics.’’ Still, this does not make much sense in terms of the science which we nowadays call physics. Rather, it has to do with “ecological physics”, in Gibson’s sense, that is, the *Lifeworld*. Probably the case of the knife stands a better chance of being accounted for in terms of contemporary physics than that of the chair, the inn, and the writing materials. These are what Gibson calls affordances: You “see” what the objects can be used for, such as eating, grasping, going through, etc. A chair may afford sitting for any human being, though in some cultures many other things carry the same meaning, and some animals would not feel comfortable sitting down on chairs, whatever Disney has made us think, and others clearly see opportunities for sitting down everywhere. Even so, some affordances, *pace* Gibson, are intrinsically cultural. This is true of chess and money, and it also applies to writing material, books, statues, estates, guildhalls, commons, prisons, inns, and other cases cited by Deely. Elsewhere, I have applied the term ‘‘cultural affordances’’ to these cases. Some

affordances only exist in a specific culture – from the "sendability" of the post box (mentioned by Gibson) to the "writability" of the computer keyboard. But all these "mind-dependent" meaning cannot be explained merely from affordances.

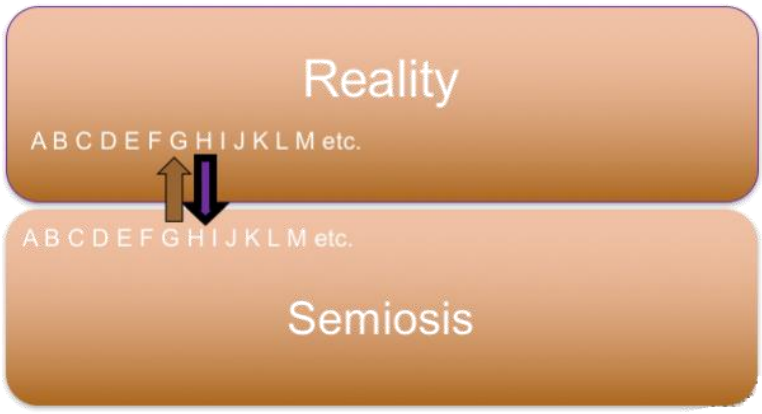

Figure 2.3 A tentative illustration of what may be meant by Wilson's "wide realizations".

In the task of accounting for the meaning of these kinds of meaning, I believe we can gather some assistance from Robert Wilson (2004: 77ff, 107ff), who argues that most intentional contents of consciousness must have a "context-sensitive realization", that is, in other terms, they must "go beyond the head". Within phenomenology, this is, of course, trivially true, since intentionality is defined as transcendence in immanence, but, like Searle and Deely, Wilson takes for granted that there is, on the one hand, the physical world (without noting that this is a notion of the physical world not accepted by contemporary physics, that is, something closer to Gibson's ecological physics, and thus to the *Lifeworld*), and, on the other hand, the world of ideas, or "mind-dependent being". Despite this, Wilson makes some suggestions, which may help us understanding the relations between the different layers of the world of our experience.

Wilson (2004: 112 ff., 116f.) observes that, apart from "entity-bound realizations", which are defined by properties entirely internal to their being (that is, mind-independent being), there are a lot of "wide realizations", in the case of which the "noncore part is not located entirely within" the individual, and also "radically wide realizations" in which the "core part is not located entirely within /…/ the individual who has" the property in question. An example of a wide realization would be the property of being a predator, which is something which can only be understood in relation to a certain ecological niche, and also in relation to certain other animal species (See Figure 2.3). As observed above, the notion of being a prey, which can only be defined in relation to a specific predator, is one of the examples Deely gives of an *ens*

rationis. Something similar could be said about other examples cited by Deely, such as "in-group", which can only be understood in relation to the group outside, "safe area", which is safe only in relation to that which is not safe (but if we take into account what the safety is safety from, we may very well end up in Wilson's next category).

An example of a radically wide realization could be the act of signing a check, in which case the part accomplished by the individual, that is, the movement of the hand which produces a scribble, is a very small part of all the institutions and conventions necessary for securing the identity of the act (See Figure 2.4). Money, in Searle's example, would seem to be a relatively simpler case of Wilson's category, to the extent that signing a check (which is a procedure which in many parts of the world is no longer performed, or only rarely so) is basically creating money out of thin air, which only works if the air is thick enough to contain a full bank account, a bank which has not gone bankrupt, and so on. Signing a check is also one of the uses to which Deely's writing materials may be put. We could no doubt extend this to the writing of a book, which, apart from writing materials, requires a lot of institutions, at present, but also already in the Medieval and Mesoamerican worlds of book writing.

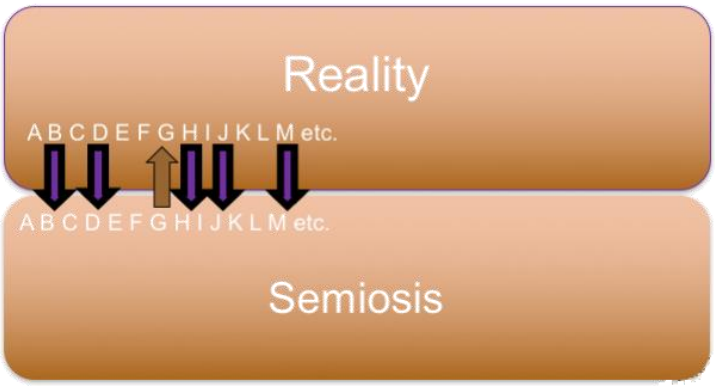

Figure 2.4 A tentative illustration of what may be meant by Wilson's "radically wide realizations".

Thus, it seems that there are, from this point view, two kinds of *ens rationis* or mind-dependent beings, namely "wide realizations" and "radically wide realizations". Or rather, there is a continuous scale between the one and the other. The examples given by Deely, Searle, and Wilson show that these kinds of relations are very common: in fact, we will be hard pressed to find examples of phenomena which are not at least to some extent "wide" or "mind-independent". Indeed, one may wonder if there really is anything that can be described as "entity-bound realizations". However, as Wilson (2004: 141ff) rightly points out, although most phenomena in consciousness may have "wide realizations", they are still owned by a subject:

"And my belief that Paris is the capital of France remains my belief even though it has a wide realization".

2.1.9 Summary

To understand the specificity of the sign, we first have to account for a wider sense of meaning, first encountered in perception, but amplified, as a matter of course, to the social world, with its habits, conventions, rules, and laws. We need a study of the *Lifeworld*, the world of our experience which comprises the whole scale of what is normal to what is normative. Greimas, Gibson, and Husserl all felt the need for such a science because they realized that the "natural world", as we experience it, is not identical to the one known to physics, but is culturally constructed. Husserl's *Lifeworld* as well as Gibson's ecological physics, but not Greimas' natural world, takes this level to be a privileged version of the world, "the world taken for granted", in Schütz's phrase, from the standpoint of which other worlds, such as those of the natural sciences, may be invented and observed. Indeed, since he tells us language and the natural world are the two main divisions of semiotic systems, Greimas probably thought of them as equally being representations, not in the wide sense of Fonseca or Peirce, which we will encounter in the next section, but in that of French structuralism, constructivism in perceptual psychology, and classical cognitive science. Moreover, while Greimas' semiotics of the natural world largely seems to be a kind of lexicon of the meaning of things, Husserl and Gibson tried to formulate a set of general principles which underlay all our doings in the everyday world. Taking our clues mainly from Husserl and Gibson, but also from Hägerstrand, we have tried to figure out some of these general principles. In so doing, we have suggested that all the ideas of 4E-cognition have been anticipated, at least in an elementary form, already within phenomenology. We also saw that Lakoff's and Johnson's "basic metaphors" are more correctly viewed as invariants of the human *Lifeworld* (or, in some cases, perhaps only of particular cultural *Lifeworld*s), and what Searle has described as "institutional facts" using the formula "X counts as Y in C" can account for the cultural *Lifeworld,* but not for the specific case of the sign. This is also the best way to make sense of Deely's "mind-dependent meaning".

2.2. Signs in the Human *Lifeworld*

It is true of both the main traditions of semiotics, the Saussurean and the Peircean one, that they have never really offered any definition of the sign; and the same thing no doubt applies to the

notion of representation in cognitive science.[4] This goes a long way to explaining why many semioticians (such as Greimas, Eco, etc.) have rejected the sign, without much of an argument, and why the second generation of adepts to cognitive science now seems to be doing the same thing, under the guise of "representation".[5] So, before we even can ask ourselves whether the sign makes psychological and evolutionary sense, we have to be clear about what it is. This involves not only deciding the criteria for analysing a phenomenon of meaning into two separate parts, but also those allowing us to posit an asymmetrical relation between these parts: not only does the expression have to be separate from the content, but the former should stand for the latter, not the reverse.

This is why it will be necessary also to immerse ourselves in the semiotics of the Augustine-Husserl tradition. Saint Augustine, who has often (as so many others) been hailed as the first semiotician, defined the sign as "a thing which, over and above the impression it makes on the senses, causes something else to come into thought as a consequence" (as translated by Deely 1982: 17f). Husserl's own definition of the sign, which describes the expression as something which is directly perceived but not in focus, and the content as being indirectly perceived while at the same time being the focus of the relation, could be taken as a way of specifying the Augustinian suggestion.

2.2.1 Two Classical Views of the Sign – and Beyond

I have argued that a well-defined concept of sign is needed, in order to understand the specificity of the picture, both in child development and in human phylogeny. In semiotics, if often seems as if the only game in town consists in showing that the concept of sign needed is provided by Peirce but not Saussure, or perhaps sometimes the reverse. For those who want to go on playing this game, what follows will be doubly disappointing: not only will I claim that the conceptions of Saussure and Peirce are not as different as they may seem; but I will also submit than none of them, on their own, are able to resolve our problem.

There are several ways to read Peirce and, conceivably, Saussure: one, very common one, consists in looking upon these writings as a devout Christian would approach the Bible, as the source of all truth, even that discovered since the time of writing, using some often very subtle

[4] A more interesting interpretation of Peirce, however, may be that he was not really interested in the sign in our sense. See further section 2.2.4 below.
[5] In cognitive science, as in the philosophy of mind, this conundrum is exacerbated by the confusion between what is termed "internal" and "external representations", which, as we will see later, are two very different things.

operations of interpretations to extract it. A procedure similar to this one may actually be justified, if the aim is not to develop an adequate semiotic theory, but simply to establish what the teachings of the founding fathers really were. Another approach, which is not the one I am going to preconize either, is, of course, to read Peirce and Saussure as that rival potentate, the Devil, is supposed to read the Bible, by inverting the meaning of every line: this may at first appear to be a purely fictional possibility, but I do think a procedure very much like it was applied by the French structuralists as well as Eco in the sixties and the seventies of the last century, less perhaps to Saussure and Peirce, but more to one of the most eminent followers of the first, Hjelmslev (cf. Sonesson 1989).

If we cannot read our classics like true converts, nor like the Devil, there remains, of course, the possibility of reading them like God (or the Pope): and while this may seem a much too presumptuous alternative to be seriously entertained, it comes close to what I think we should actually do, if we are able to conceive of an eminently Peircean God, not, of course, the one in which Peirce happened to believe, but one which functions according to the Peircean model of the mind: a very much fallible God who is always still trying to approach the truth, without ever getting there, yet always approaching it a little more, seeing a little further, because he is standing on the shoulders of giants — which sounds as an all too adventurous mixture of metaphors, if it not been features already in Greek mythology.

Our giants are, of course, Saussure and Peirce, Hjelmslev, Prieto, and many others. And so, in order to start entangling our chain of metaphors, we will say that Peirce, Saussure and the others were wise men, great scholars, the thinking of whom still today is worthwhile taking seriously; but they were also very much fallible, and so, in our own extremely fallible way, we may sometimes be able to do a little better than they did, often because we have access to the work of other scholars they did not know about. It should be added that the intrinsic fallibility of all work, even that of giants, is compounded, in the case of Peirce and Saussure, by the fact that almost none of their works were ever published in their lifetime or even made ready for publication, and, especially in Peirce's case, by the fact that his thinking evolved during the long spate of time he was working on semiotic issues, and that he appears to have made a lot less close reading of his own earlier work than his latter-day commentators do.

It should be clear, then, that we cannot be interested here in discovering, "what Peirce really said"; rather we will be making use of his concepts to the extent that they fit in with what has since then been established by semiotic reasoning and psychological findings, and we will criticize and revise them accordingly. On the other hand, there can be no doubt about Peirce

being a very profound thinker (though perhaps not in every paragraph he wrote), so I really think we should try to do him full justice. When there are several possible interpretations of his works, and when different passages contradict each other, we should choose the one most favourable to him — from the point of view of present-day semiotics. Although I love Peirce very much, I love truth even more: so, while some things I say in the following may be false as interpretations of Peirce, I still think they are valid as components of contemporary semiotic theory.

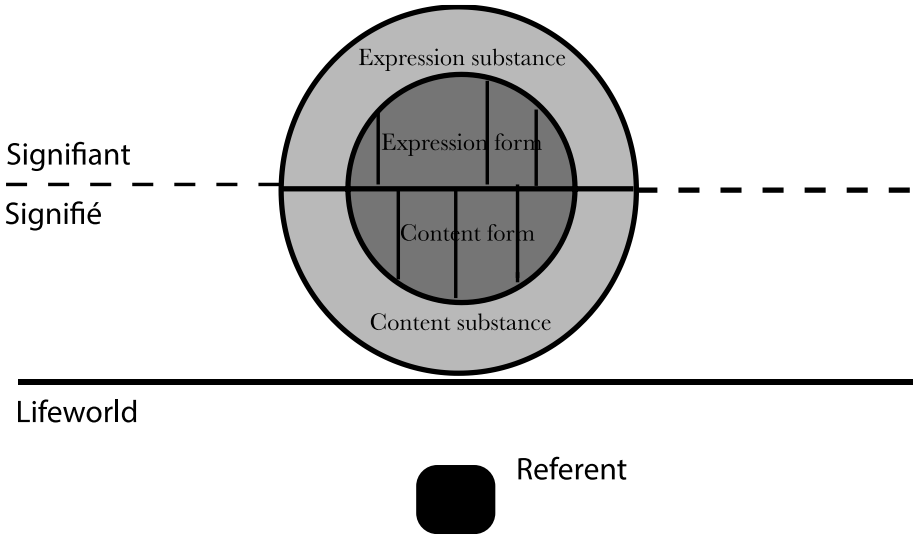

Figure 2.5 The Saussurean sign (as specified by the Prague and Copenhagen schools of structuralism): the double division of the sign into expression and content and form and substance, resulting in double articulation

For our purpose then, we will say that the Saussurean sign is made up of expression and content (signifiant/signifié) which both can be separated into form and substance - and which is disconnected from reality (the referent). “Form” here is that part of the expression which cannot be changed without giving rise to another content, and vice versa; “substance” is all the rest (See Figures 2.5 and 2.6). The Peircean sign consists of expression (representamen), content for the initiator of the sign (object) and content for the target of the sign (interpretant). The sign ”tends” towards reality. This is why the “dynamical object” is closer to reality (and further from the original sign situation) than the “immediate object”; similarly, the “dynamical interpretant” is closer to reality (and further from the original sign situation) than the “immediate interpretant”; but even further from the sign situation is the “final interpretant” which is only virtually present. Perhaps it would be more correct to say that the object is that which influences the creator of the sign so as to create it, while the interpretant is that which influences the receiver to interpret it. Then the different kinds of objects and interpretants would

be phases of this process (cf. Figure 2.7 and 2.8).

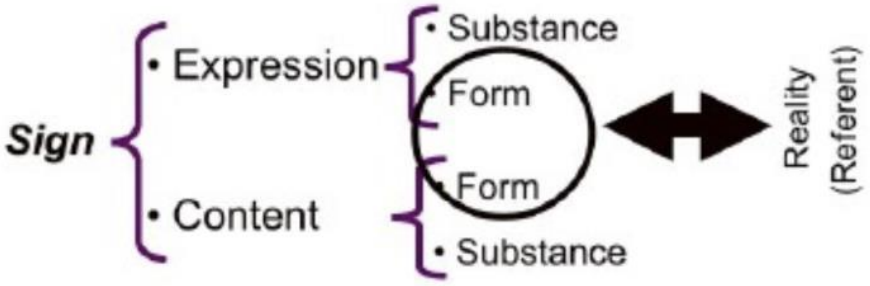

Figure 2.6. How the Saussurean sign is related to reality by means of the two forms.

If the triadity of the Peircean sign really had involved something like the expression, the content, and the real world (as many have been fooled by Ogden and Richards 1946 to think), then if would have been present also in the Saussurean conception, the third item appearing as that which is explicitly excluded from consideration (and which is then reintroduced by most post-Saussureans). It rather seems as if the distinction between the content and the referent were mimicked in Peirce's work by that between the immediate and the dynamical objects, so when we add the interpretant, we end up with four objects. However, just as there are two objects, there are three interpretants (but only one representamen), so there are really six instances of the sign altogether. Using another kind of reasoning, one may instead add the utterer and the interpreter, and then end up with a pentagram (cf. Johansen 1993). Indeed, some unpublished passages in Peirce's manuscripts (for instance, MS 318, quoted in Jappy 2000) seem to suggest that the object is simply the content as conceived by the addresser, and the interpretant is the same content at it appears to the addressee (cf. discussion in Sonesson 2006). If object and interpretant correspond to something akin to speaker's meaning versus listener's meaning, then the communication models (notably that of the Prague School) also account for it. If the interpretant has something to do with the notion of "ground" appearing in Peirce's early texts, then it figures prominently in the Saussurean tradition in the form of the distinction between form and substance, mentioned below. This last interpretation is favoured, in my view, by Peirce's (Peirce 1998: 269) contention that "Thirdness [e.g. interpretants] is found whenever one thing brings about a Secondness between two things [e.g. the relation between representamen and object]."

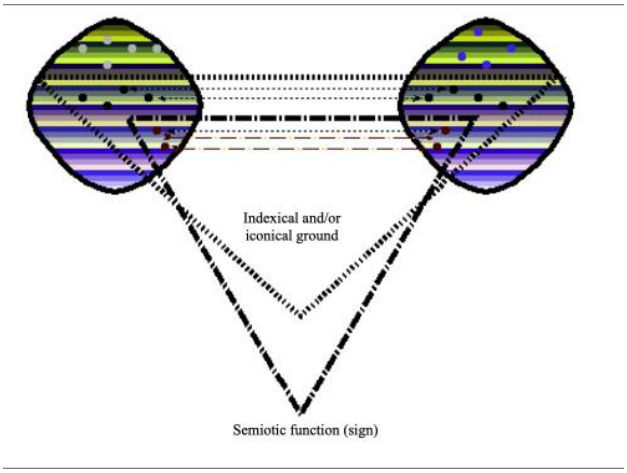

Figure 2.7 The Peircean sign: the sign as a mapping between two things taken to be the expression and the content, respectively, and related by a "ground" singling out properties in those both objects, which are either similar (iconicity) or connected (indexicality), independently of the mapping operated by the sign function (See further Chapter 3).

This brings us to the notorious issue of Saussurean binarity as opposed to Peircean triadity, which is a point of contention which will be completely absent in the following. Despite Peirce's explicit denial, I do think he was something of a triadomaniac. But that is not the real issue. It may often be convenient to order things in rows of threes. But the whole question whether there are two or three of something has no sense whatsoever, *before we know what kinds of entities we are talking about.* The question whether something has two or three parts has no meaning before determining the domain for which the model is valid, as well as the criteria (the relevant properties) according to which the division is made. If the domain is the sign plus reality, the Saussurean sign definition is also triadic. But if all the distinctions made by Peirce are criterial, his definition in fact has six levels.

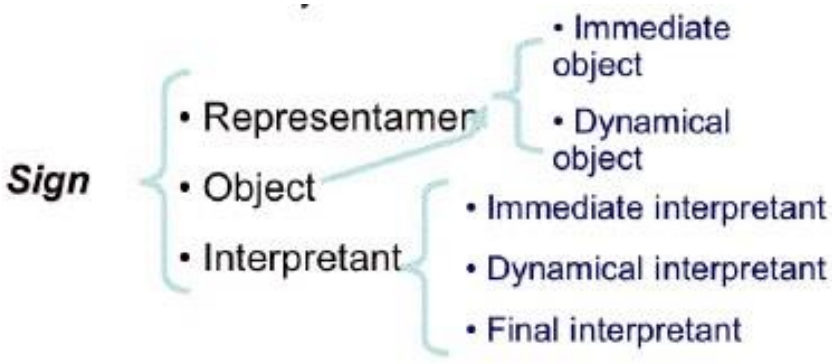

Figure 2.8. The Peircean sign: as consisting of different phases of interpretation, making up six phases, from the representamen to the final interpretant.

There is no doubt some real differences between Saussure and Peirce, however. Saussure

is really only interested in the linguistic sign, whereas Peirce wants to characterize all possible signs. Peirce sometimes seems to extend the sign so far that it covers everything. Peirce's concepts can only with difficulty be separated from a specific philosophical conception of reality. Peirce's model seems to be more involved with the contact between the sign and reality, while Saussure is concerned with their difference.

But they have one thing in common: none of them really tells us what a sign is. It often seems as if anything which has three (or two) parts would thereby be a sign. But everything obviously hinges on what kind of relationship there is between these parts. This is no doubt implicit in terms such as "expression" and "content". But if the concept of sign should be of any use, that which is implicit has to be spelled out.

2.2.2 From Pebbles to Feathers. The Notion of Differentiation

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

Before we can separate signs from other meanings, we have to spell out those criteria for something being a sign which are simply taken for granted, both in the Peircean and in the Saussurean tradition. This can be done by combining what Husserl says about appresentation (something which is *directly present* but not *thematic* refers to something which 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*).

Let us start out from what might be called the Saussure-Piaget tradition. I am not sure whether anybody has ever stood in that tradition, except, of course, Piaget, who took all his semiotic vocabulary (opposing the – conventional – sign to the – motivated – symbol) from

Saussure. Sonesson (1989; 1992) certainly stands in that tradition, and, as I discovered later on, so does Martin Krampen (1991), who appears to be the only "card-holding" semiotician, apart from the present author, together with Sara Lenninger (2006; 2012) who has taken an interest in Piaget's notion of semiotic function. What Piaget added to Saussure was most obviously a developmental perspective, in particular on the level of ontogeny. But, just as importantly, though it is less commonly observed (in fact never, except for Sonesson 1992b, etc.), he realized that all meanings are not signs, and he even began groping for a definition of that which accounts for the specificity of the sign. More decisively, applying the developmental perspective to the sign, he made it into a particular stage of development (although, unlike Vygotsky, he never allowed semiosis to define that stage).

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 18 to 24 months, which enables him or her to imitate something or somebody outside the direct presence of the model, to use language, make drawings, play "symbolically", and have access to mental imagery and memory. The common factor underlying all these phenomena, according to Piaget, is the ability to represent reality by means of a signifier which is distinct from the signified. Indeed, Piaget argues that the child's experience of meaning antedates the semiotic function, but that it does not then suppose a differentiation of signifier and signified in the sign (see Piaget 1945, 1967a, 1967b). Not all of Piaget's examples of the semiotic function may really be of that kind, even applying his own criteria (Cf. Sonesson 1992). It should be kept in mind that Piaget is here talking about the capacity for producing language, pictures, and so on, not the ability to interpret them. As in the case of language, the capacity to understand pictures must precede any ability to produce them. However, if understanding really arrives as late as Judy Deloache claims, as we will see in the next section, there is still a conflict with Piaget's view.

In several of the passages in which he makes use of this notion of semiotic function, Piaget goes on to point out that "indices" and "signals" are possible long before the age of 18 months, but only because they do not suppose any differentiation between expression and content.[6] The signifier of the index, Piaget says, is "an objective aspect of the signified"; thus, for instance, the visible extremity of an object which is almost entirely hidden from view is the signifier of the entire object for the baby, just as the tracks in the snow stand for the prey to the

[6] Krampen (1991: 14ff) 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".

hunter. But when the child uses a pebble to signify candy, he is well aware of the difference between them, which implies, as Piaget tells us, "a differentiation, from the subject's own point of view, between the signifier and the signified".

Piaget is quite right in distinguishing the manifestation of the semiotic function from other ways of "connecting significations", to employ his own terms. Nevertheless, it is important to note that, while the signifier of the index is said to be an *objective* aspect of the signified, we are told that in the sign and the "symbol" (i.e. in Piaget's terminology, the conventional and the motivated variant of the semiotic function, respectively) expression and content are differentiated *from the point of view of the subject.*[7] Curiously, this distinction between the subjective and objective points of view is something Piaget seems to forget in the following. We can, however, imagine this same child that in Piaget's example uses a pebble to stand for a piece of candy having recourse instead to a feather in order to represent a bird, or employ a pebble to stand for a rock, without therefore confusing the part and the whole: then the child would be employing a feature, which is *objectively* a part of the bird, or the rock, while differentiating the former from the latter *from his point of view*. Only then would he be using an index, in the sense of an indexical sign.

The hunter, on the other hand, who identifies the animal by means of the tracks, and then employs them to find out which direction the animal has taken, and who does this in order to catch the animal, does not, in his construal of the sign, confuse the tracks with the animal itself, in which case he would be satisfied with the former. Both the child in our example and the hunter are using indices, or indexical signs, where the "real" connection is transformed into a differentiation within the sign. According to some current conceptions, this would not necessarily be true in prehistory: chimpanzees and early humans appear to be unable to make use of tracks in their hunting behaviour, if cognitive archaeology is to be trusted (Mithen 1996: 73ff).[8]

On the other hand, the child *and the adult* will fail to differentiate the perceptual

[7] In fact, the notion of "symbol" is much more complex (and confusing, if not confused) in Piaget's work, because its signifiers and signifieds are said to be differentiated from each other but still "adherent". Piaget also insists a lot on the individual character of the symbol and the social one of the sign. Therefore, Krampen (1991: 18f) is clearly wrong in identifying Piaget's "symbol" with Peirce's icon, and Piaget's "sign" with Peirce's symbol.

[8] Actually, Mithen's examples suggest that apes are able to interpret auditive signs of the hunted animals but will not even recognise the animal itself if presented with it visually, which suggests indexicality is not involved at all in this distinction. Indeed, many animals "lower" on the evolutionary scale are obviously able to interpret traces. According to this conception, the development of "art", i.e., picture signs, is an even later accomplishment of human prehistory (Mithen 1996: 150ff).

adumbration in which he has access to the object from the object itself; indeed, they will identify them, at least until they change their perspective on the object by approaching it from another vantage point. And at least the adult will consider a branch jutting out behind a wall as something which is non-differentiated from the tree, to use Piaget's example, in the rather different sense of being a proper part of it. In the Peircean sense an *index* is a sign, the relata of which are connected, independently of the sign function, by *contiguity* or by that kind of relation which obtains between a part and the whole (henceforth termed *factoriality*). But, of course, contiguity and factoriality are present everywhere in the perceptual world without as yet forming signs: we will say, in that case, that they are mere *indexicalities*. Perception is perfused with indexicality.[9]

An index, then, must be understood as indexicality (an *indexical* relation or *ground*, to use an old Peircean term) plus the sign function. Analogously, the perception of similarities (which is an *iconic ground*) will only give rise to an icon when it is combined with the sign function. I therefore cannot agree with Terrence Deacon (1997: 76ff) when he claims that camouflage in the animal world such as the moth's wings being seen by the bird as "just more tree" are essentially of the same kind as those "typical cases" of iconicity we are accustomed to call pictures (See Chapter 3). As always, there are passages in Peirce's work which may be taken in different ways, but it makes more systematic and evolutionary sense to look upon iconicity and indexicality as being only potentials for something being a sign which still has to be "embodied", as Peirce (1998: 291) suggests regarding another division of signs: "A Qualisign /---/ cannot actually act as a sign until it is embodied; but its embodiment has nothing to do with its character as a sign. A Sinsign /---/ involves a qualisign, or rather, several qualisigns. But these qualisigns are of a peculiar kind and only form a sign through being actually embodied".

An indexicality, then, is not a sign; it is simply the perception of two things being connected. It will be a sign only once these items are experienced as being detached from each other. The foot touching the earth is an indexicality; the traces left on the soil is an indexical sign. The branch of the tree which is still part of the tree is an indexicality; in the theatre, however, where it is cut off from the tree, it may well be an indexical sign for it. Strictly speaking, iconicity, in Peirce's understanding of the term, is not even a relationship; but once two iconicities are experienced together, they form an iconic ground, which is a relation, but

[9] I am using "indexicality" here (just as "iconicity") in the sense of something which is necessary for a sign being an index (or an icon), but which is not sufficient for it being a sign. See further the third chapter and references given there.

still not a sign. It is the experience of bark on one place being similar to bark higher up or lower down; or of the tree being similar to another tree. A picture of a tree, however (or even a tree on a theatre scene) is an iconic sign (cf. Sonesson 2006 and Table 2.1).

Table 2.1 The relationship between principles, grounds, and signs, from the point of view of Peirce (this table will be modified in later chapters).

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

While the introduction of the notion of differentiation is a substantial accomplishment on the part of Piaget, he unfortunately never spells out its import. As I have mentioned above, he defines it in terms of the subject's point of view, but then uses examples in which the disconnection already exists objectively. The sense of objectivity and subjectivity employed here should, of course, be related to the commonsense world (that is, the *Lifeworld*) in which human beings stake out their life. Indeed, what Piaget is concerned with is precisely the "construction", in his terms, by the child of the commonsense world. Once this edifice is finished, the commonsense 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. [10]

Nor should differentiation be identified with displacement as defined by Charles Hockett (1977), which (rightly, no doubt) appears as one of the "design features" of language in most introductory textbooks.[11] As in the case of the tracks left by the hunted animal, displacement may be a consequence of differentiation. But differentiation only comes of its own when the sign is in *presence* of its referent, for then it allows us to construe reality in different ways ("subjectively", as Piaget would have said), picking out that which is relevant, and ignoring, or downplaying other features.

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

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

2.2.3 Different Ways of "Connecting Significations"

The notion of differentiation has certainly not been satisfactorily defined in these pages: expression and content, I have suggested, do not go over into each other in time and/or space, and they are perceived to be of different nature. To get any further, both phenomenological and

[10] Other pieces of valid criticism may be levelled against Piaget, as discussed in Sonesson (1992): the point that meaning emerges ontogenetically well before the attainment of the semiotic function (as expressed notably by Trevarthen and Logotheti 1989) is essential to the following argument. The observation, made experimentally by Gardner & al., that the semiotic function is not attained in different media, and in different respects, at the same age, is important, but has nothing to do with the functional definition of this stage of development.

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

experimental investigations are in order. Some clarification of this issue will be given when we attend to the Augustinean-Husserlean tradition for the definition of the sign. All we can do at present is pointing out the contrast obtaining between signs and other kinds of meaning.

Each time two objects are perceived together in space, there is *contiguity;* and each time something is seen to be a part of something else, or to be a whole made up of many parts, there is *factoriality* (as defined in Sonesson 1989). According to Husserl, two or more items may enter into different kinds of "pairings", from the "paired association" of two co-present items (which we will call *perceptual context*), over the "appresentative pairing" in which one item is present and the other indirectly given through the first, to the real sign relation, where again one item is directly present and the other only indirectly so, but where the indirectly presented member of the pair is the theme, i.e. the centre of attention for consciousness (cf. (Husserl 1939; Luckmann 1980).

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

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

objectified in the picture. The picture is a sign, in the sense of it having a signifier which is *doubly differentiated* from its signified, and which is *non-thematic* and *directly given*, while the signified is *thematic* and only *indirectly present*.

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

Something like Husserl's criteria is required, but perhaps not sufficient, in order to separate the sign function from other dyadic relations between (more or less) differentiated members. It is possible, no doubt, to conceive of the sign as some kind of mapping between "mental spaces", as suggested by Gilles Fauconnier (1994; and Sweetser 1997), but this is not of much use as long as we have no criteria for separating the sign from all other instances of such mappings listed by Fauconnier, such as counterfactuals, analogy, metaphors, metonymy, propositional attitudes, modalities, pragmatic terms, frames, models, and so on. This is, of course, not to deny that some valuable generalizations may be stated at this level.[12]

Another case in point is one of the arguments employed by Jerry Fodor (1976, 2010) to posit the existence of a "language of thought": that in order for us to be able to redescribe common sense psychology in terms of brain functioning, there must be something material, parallel to the expression of language that in the brain corresponds to the neutral pathways, which is related to something mental, parallel to the content of language. Indeed, Fodor's argument relies on expression and content of the "language of though" being isomorphic, that is, highly iconic, so that whatever is said to happen to the expression can also be said to happen to the content, but I am not concerned with this specific claim here. Whatever the merit of this

[12] On another level, this is the confusion which has permitted numerous structuralists to claim the presence of "double" or even "triple articulation" in many kinds of semiotic resources. Cf. Chapter 3 and 4 below.

argument, the comparison of the relationship between brain anatomy and consciousness in terms of expression and content is fallacious. The neural pathways are not that which is immediately given but not in focus, and consciousness is not indirectly given but in focus. Between neural pathways and thinking, there is no doubt some kind of causal relationship, no matter how we choose to construe it; but there is no semantic relation. Indeed, the expression of a sign is not even material, considered as a form (in Saussurean terms). Other arguments against Fodor's conception were adduced by Bermúdez (2005).

Eco (1984: 216f) has repeatedly denied that the mirror is a sign: instead of standing *for* something it stands *before* something: the mirror image is not present in the absence of its referent, is causally produced by its object, and is not independent of the medium or channel by which it is conveyed.[13] Indeed, in his most recent work, Eco (1998: 22ff; 1999: 371ff) extends this description to some phenomena, notably television, which most people would naturally consider to be pictorial signs. With reference to our more precise concept of sign, I see really no reason to deny the sign character of the mirror: something which is comparatively *more direct* and *less thematic,* the mirror image, stands for something which is *less direct* and *more thematic,* the object in front of the mirror; and the person or thing in front of the mirror is clearly *differentiated* from the image in the mirror.

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

The mirror clearly has a "body " of its own. The framed picture even more obviously has one. What is at stake, however, is much more than the distinction, often made in cognitive science, between internal and external representations. To see that, we must take a step back to the world before the emergence of the sign.

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13 Eco (1984, 1998, 1999) gives several other arguments for this claim, which I have shown to be invalid in Sonesson (2003) and later. See further Chapter 3.

2.2.4 Signs and Mediations : The Fonseca-Peirce connection

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

Curiously, John Locke, who is on some accounts the father of semiotics (or at least the begetter of the term), similarly seems to treat signs as being on a par with ideas, where an idea is to be understood as any kind of taking account of the facts of the outside world. Thus, the experience of redness, or of a red book, is in some ways parallel to the word ”red” or the syntagm “red book”. This is not only strangely reminiscent of what we find in “classical” cognitive science, but it also seems to correspond to at least some usages of the term “sign” found in the work of Peirce.[14] Moreover, it accords with some notions of the scholastic philosophy current in the Middle Ages. While I do not think there is any direct link between cognitive science and scholasticism, this connection is quite apparent in the case of Peirce (and perhaps Locke). A few notions of history may help us to disengage ourselves from the present-day conceptual muddle.

According to what John Deely has told us in many of his books, there was no single concept of sign in Antiquity, but two quite different notions, one due to Aristotle, which concerns language (όνοματα), and another due to the Stoics, which has to do with drawing a conclusion from something being the case (p) to that of something else is also being the case (q) (σημεία). The latter could be seen as a formalization, as Giovanni Manetti (1993) has suggested, of common everyday actions of the time such as divination and the interpretation of medical symptoms, to which should no doubt be added the interpretation of animal tracks, which must have been of primordial importance to human beings as long as they were hunters. Thus, signs in this sense could be exemplified, in the Hippocratic tradition, by inferences such

[14] However, although Deely (1982, 1994) seems to take a different view of the matter, I believe most of Peirce’s definitions of the sign are more appropriately construed as corresponding to (potentials for) the semiotic function, as suggested above. On the other hand, many of his examples do not seem to confirm to it. See examples in Peirce (1998). As any reader of Peirce must have noted, he quite often quotes scholastic writings, and, as Deely points out, particularly those of the followers of Pedro da Fonseca, on which more will be said below.

"if there are red spots, then measles", but also, more in the spirit of hunters, as "if there is a trace in the snow of a certain shape, then a rabbit has passed by". According to Deely (2010a: 86ff), it took the genius, or perhaps the good luck, of Saint Augustine to think of combining the Stoics' σημεία with the Aristotelian όνοματα and other kinds of σύμβολον. Indeed, a linguistic signifier (or a pictorial one) is not readily conceived as an effect permitting us to conclude to its cause, identified with the signified.

Thus, the church-father Augustine seems to have been responsible, certainly not for inventing, but for making explicit the commonsense notion of sign on which later thinkers, such as Saussure and Husserl (and, at least in his definitions, Peirce) are tacitly building : it is, he tells us (in the convenient paraphrase of Deely (1994) : 58) "something which, on being perceived, brings into awareness another besides itself". Thomas Aquinas already had some misgivings about this definition, without ever daring to reject it outright. The followers of Aquinas in Paris may have been somewhat bolder. In a written form which has come down to us, however, we first know this criticism from the works of Pedro da Fonseca, who was active in Coimbra on the Iberian Peninsula in the 16th century. To Fonseca and his followers in Coimbra, the definition of the sign must be considerably broader: a sign is anything which serves to bring into awareness something different from itself, whether the sign (in the sense of the signifier) itself becomes subject to awareness in the process or not.

If the sign itself does not have to be perceived in order for us to come to an awareness of that which is signified, Fonseca described it as being *formal*; but if the sign cannot lead to the awareness of anything at all unless it is itself perceived, he called it *instrumental* (cf. Deely 1982: 52ff; 1994: 58ff). Put in more convenient terms, a sign may either consist of a signifier (expression) which has to be perceived as such in order to usher into the perception of the corresponding signified (content); or it may consist in a signifier which is not ordinarily perceived as such but still somehow serves to mediate the perception of a signified. Thus, Fonseca pointed to an analogy, but also to a distinction, of which at least the latter seems to have been lost even on latter-day semioticians and cognitive scientists.

What is here called an instrumental sign clearly is that which Husserl, following Franz Brentano (1874), has described as the fundamental trait of consciousness, *intentionality*, that is, the property of being directed to that which is outside of consciousness. Brentano tells us he took the idea from Scholastic philosophy, but it is not easy to pinpoint the exact inspiration Brentano derived from the Scholastics. The latter, it seems, distinguished the first intention, i.e. "the act by which the mind tends to a real being" and the second intention, that is, "the act by

which the mind tends to a being of reason". The common notion would then be "formal intention", which designates "the act itself of the mind tending towards something" (all according to the definition of Catholic Apolegetics (Apologetics n.d.). The latter term is reminiscent of Fonseca's "formal sign", while avoiding the misleading terminology. According to Deely (2007, 2010a :340f), Brentano's use of the term is a misinterpretation. He is no doubt right, but here we are concerned with the notion of intentionality as introduced by Brentano, the import of which was subtly altered by Husserl all through his working life. Brentano's work was unique in the 20th century in being at the origin of otherwise antithetical traditions, such a phenomenology, on the one hand, and Anglo-American philosophy of mind, on the other (see MacDonald 2012). In Husserl's early work, intentionality seems to be understood in a way close to that of Brentano, and even of his followers in the philosophy of mind, as something which could be formulated as a proposition, but later on, it gained a much wider import, when it was used to account for time consciousness, sedimentation, passive synthesis, and the like.

When closely considered, Fonseca's observations really go against the grain of the identification of our awareness of the world with the sign. In our retrospective chamber of repercussions, it echoes Husserl's as well as Gibson's description of the perceptual act as something which points beyond itself without itself being present to consciousness (cf. Sonesson 1989: 255ff.). Indeed, when James Gibson (1978: 228) observes that, when we are confronted with the-cat-from-one-side, the-cat-from-above, the-cat-from-the-front, etc., what we really *see* is all the time the same invariant cat, he actually recovers the central theme of Husserlean phenomenology, according to which the object is entirely, and directly, given in each of its perspectives or *noemata* (see Husserl 1939, 1954, 1962, 1973a; and Sonesson 1989: 34ff.). In a similar fashion, Husserl's favourite example is the cube (or perhaps the die) which can be observed from different sides. In Gibsonean terms, these are "the surfaces of the world that can be seen now from here" (Gibson 1978:233).

Husserl's cube and Gibson's cat instantiate the same phenomenal fact – for it is a phenomenal fact, and not an experimental one, also in Gibson's work. Just as Husserl called into question the conception of his contemporary Helmholtz, according to which consciousness is like a box, within which the world is represented by signs and images, from whose fragmentary pieces we must construct our perceptions (cf. Küng 1973), so Gibson's strawmen are the followers of Helmholtz, the so-called "constructionists" (who have recently re-emerged within cognitive science, e.g. Hoffman (1998), who claim that hypotheses are needed to build

up perceptions from the scattered pieces offered us by sensation (cf. Sonesson 1989: 262 ff.).[15] At least superficially, however, there is an important difference; for whereas Husserl rejects the picture metaphor of consciousness, by showing Brentano and Helmholtz to be in error in their very conception of pictures and other signs because of ignoring the transparency of the expression to the content (cf. Küng 1973), Gibson (1978) instead emphasizes the dissimilarity of the picture from a real-world scene, thus showing the numerous experiments using pictorial stimuli to study normal perception to be seriously misguided. And yet, to both Husserl and Gibson, normal perception gives *direct access* to reality, while Gibson thinks pictures represent a kind of *indirect perception,* and Husserl (1980) tells us (cf. Sonesson 1989: 276ff) that they are "perceptually imagined".[16]

To perceive surfaces is a very different thing from perceiving marks on surfaces, Gibson (1980) maintains. Depth is not added to shape but is immediately experienced. In fact, the perception of surfaces, of their layout, and of the transformations to which the latter are subjected, is essential to the life of all animal species, but the markings on these surfaces have only gained importance to man, notably in the form of pictures. The marks, produced by what Gibson calls the *graphic act,* can be deposits, traces, lines, or shadows projected on the surface. They may be produced by finger tracing, drawing, painting, or engraving, with a tool such as a stylus, brush or pen; or otherwise, a simple device, like the ruler or the compass, may be used, or a complex one, such as the printing press, the gadgets of photography, or the projector of lantern slides (Gibson 1980:xii; 1978:229). Surfaces have the kind of meaning which Gibson elsewhere calls "affordances"; the markings on surfaces, however, have "referential meaning". Without discussing the exact import which should be given to the term "affordance", we may safely conclude that "referential meaning" is a property of what we have called the semiotic function. That is, surfaces do not *stand for* other surfaces, but the markings on surfaces may possibly do so. The pattern of a surface and the pattern *on* a surface are different and can usually be distinguished by an adult. The surface on which a "graph" has been executed can be seen underneath the "graph". However, a surface may be decorated, regularized, textured, painted, or embellished in other ways without acquiring a referential meaning; and deposits of dirt or blots of pigment may be left on the surface without the surface being made to stand for

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

[16] The precise import of this latter term is part of what will be discussed in the third Chapter

something. The two cases, intuitively describable in terms of the opposition between order and disorder, are not distinguished by children.

To Gibson, then, the picture is a surface among other surfaces before becoming a sign. Gibson (1978:231) observes that, besides conveying the invariants for the layout of the pictured surfaces, the picture must also contain the invariants of the surface which is doing the picturing: those of the sheet of paper, the canvas, etc., as well as those of the frame, the glass, and so on. Although Gibson does not use the term, he clearly describes the picture as a sign, in the strict, Augustinian sense of the word: as a surface which, on being perceived, brings into awareness something besides itself. Gibson never specifies what he means when he claims that surfaces are only seen to stand for something else by human beings, in contradistinction to animals and children. If he meant to suggest that surfaces can never be taken to be something else than surfaces by animals and children, he was clearly wrong: we know that even doves may react the same way to a picture as to that which is depicted (cf. Sonesson 1989: 251ff). The difficulty, clearly, consists in seeing *at the same time*, both the surface and the thing depicted. In other words, it consists in making a differentiation: in telling the "body" of the sign apart from the "body" of the object to which it alludes.

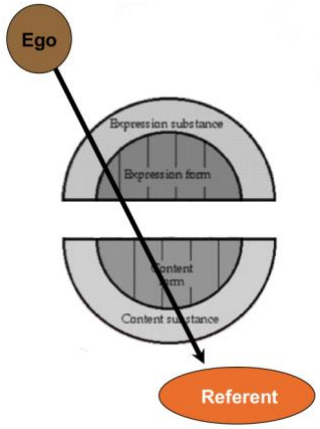

Figure 2.9 The sign as a hierarchy of intentionality

We should grant Fonseca the insight that there is some kind of analogy between signs and intentional acts. However, to use the term sign in both cases dangerously suggests that there is no important distinction to be made. In his late life, Peirce realized that all his notions were too narrow: instead of "sign", he reflected, he really ought to talk about "medium" or "mediation" (manuscript quotations given in Parmentier (Parmentier 1985). In the following, we will use the term *mediation* for this general sense of meaning which Fonseca called sign and to which Peirce sometimes may also be hinting. In some respects, at least, it seems to correspond to

Gibson's "affordances", and to Piaget's notion of "connecting significations". But, as suggested above, intentionality, as understood by Husserl in his late work, is a better term for this general sense of meaning.[17]

In conclusion, then, if perception is already a case of intentionality, the sign involves at least a double intentionality, or perhaps better, an indirect intentionality, which penetrates the expression to attain the content and, beyond it, the referent (See Sonesson 1989: 179 ff.). The Peircean term of mediation seems to fit this description (See Figure 2.9).

2.2.5 The Biosemiotical Difference between *Umwelt* and *Lifeworld*

According to the conception current in Biosemiotics, which has assumed the heritage of von Uexküll, combining it with the Peircean notion of sign, the features of the world observed by the animal correspond to the sign-vehicle or expression (Peirce's "representamen"); the object or referent would then be that which causes these features to be present to the animal; and the Peircean interpretant or content would in turn correspond to the pieces of behaviour which make up the reaction of the animal to the features in question. As pointed out by Tom Ziemke and Noel Sharkey (2001: 709), it is hard to find the object of the sign, in the ordinary sense of its referent in the "outside world". Indeed, as I have pointed out elsewhere (Sonesson 2009b) what is for us, as observers, three cues to the presence of a mammal, the smell of butyric acid, the feel of skin, and the warmth of the blood, do not have to be conceived, in the case of the tick, as one single entity having an existence of its own (a "substance", in Gibson's terms), but may more probably constitute three separate episodes producing each its own sequence of behaviour.

In fact, Ziemke & Sharkey go on to quote an early text by von Uexküll, in which he says that "in the nervous system *the stimulus itself does not really appear* but its place is taken by an entirely different process" (my italics). Von Uexküll calls this a "sign", but it should be clear that is does not in any way fulfil the requirements of the semiotic function (See section 2.2). Indeed, expression and content are not differentiated, already because they do not appear to the same consciousness. The butyric acid is there to the tick; the mammal is present only to us. Reacting to my 2009 paper, Morten Tønnessen (2010 :384), armed with a quotation from von Uexküll, claims that I am wrong on this account: "what appears to the tick is indeed a sign of a mammal (as a tick-thing, not a human-thing)". I don't understand how von Uexküll and Tønnessen can know that. If the study of the *Umwelt* is based on the anatomy of the animal, as

[17] Whether it also has something to do with the Vygotskyan concept of mediation is something which cannot be discussed here.

claimed by von Uexküll, and not on proxy phenomenology, there really cannot be anything more than three episodes of the functional circle, each comprising a percept and an action. Luis Prieto (1964, 1972) made a very pertinent distinction between simple "codes", as he called them, which are based on an opposition to a single alternative term, and those which stand alone. Thus, for instance, traffic signals, in their most rudimentary variant, oppose red to green, in the case of which red ("prohibited") also means not green ("not-permitted"), and vice versa; while the white cane of the blind person tells us that this person is blind, without excluding that there may be other persons who do not have white canes, who also are blind. Both cases, nevertheless, supposes the capacity of being aware of alternatives to what is perceived; and, if von Uexküll's description of the functional circle of the tick is correct, the tick does not have this capacity.

In fact, things are even more complicated. In a true sign relation, as conceived by Peirce, the mammal is not really the object, in the Peircean sense, for which the butyric acid is the representamen. Or, to be more precise, it is not the "dynamical object". At the very most, it is the "immediate object". It will be remembered that, in Peirce's conception, while the "immediate object" is that which directly induces the sign process, the "dynamical object" is something much more comprehensive, which includes all those things which may be known about the same object, although they are not present in the act of inducing. Indeed, the "dynamical object" is that which corresponds to the potentially infinite series of different interpretants resulting from the same original immediate object. It should be clear that, for the tick and similar beings, there can be no distinction between direct and dynamical object, because there is no room for any further development of the chain of interpretants. In this sense, Deacon's (1997: 63) idiosyncratic reading of Peirce, according to which only signs such as those found in human language (his "symbols") give rise to chains of interpretants seem to have some justification – in reality, if not in Peircean theory (cf. Sonesson 2006). This is true, however, only if you do not separate indexicality and indexical signs, or iconicity and iconic signs (See Chapter 3). In the same paper quoted above, Tønnessen censures me also for making this claim:

> But why wouldn't an immediate object qualify? Besides, a 'dynamical object' may result at least in the total *Umwelt* of a population of ticks /---/. And even an individual tick is faced with success or failure in its attempts to recognize mammals by their butyric acid, which opens for reconsidered interpretative strategies (Tønnessen 2010: 384).

I did not say that the "immediate object" didn't qualify – for what? Nevertheless, I do

think it could be said that an immediate object without a dynamical object doesn't "qualify" as an instance even of Peirce's very broad sign definition, which supposes there to be a difference between the immediate and the dynamical object. Tønnessen goes on to suggest two ways in which, in his view, the tick still is able to make a distinction between the two kinds of Peircean objects. I must confess that, apart from having been many times their victim, all I know about ticks is derived from my reading of von Uexküll. If there is a public sphere in which ticks share their experiences, and/or if the individual tick keeps pondering his/her experiences after the act, there must be something wrong with von Uexküll's description of the life story of the tick. If so, I simply have to find a better example.

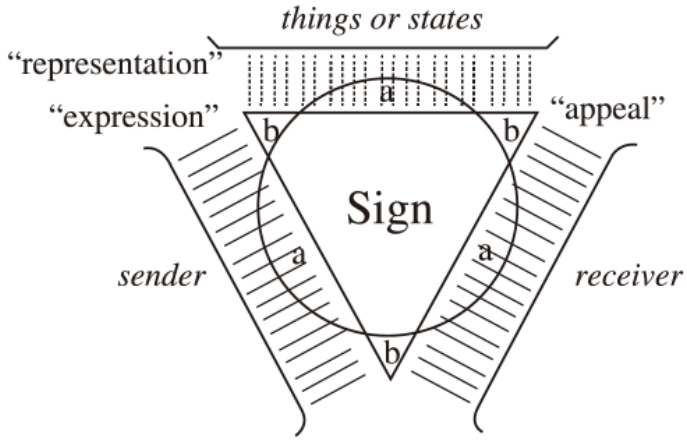

Figure 2.10 The Organon model according to Karl Bühler (1934), with abstractive relevance and apperceptive supplementation.

The butyric acid, the hairiness, and the warmth form the immediate objects of the tick, the mammal as such is the dynamical object. The difference, however, is that there is no way that the tick, unlike human beings, may learn more about the "dynamical object" than that which is given in the immediate one. Meaning here appears as a kind of "filter": it lets through certain aspects of the "real world" which, in its entirety, in unknowable, though less so for human beings than for ticks. The Kantian inspiration of von Uexküll is, of course, unmistakable. Indeed, the filter model can best be expressed in terms of another Kantian thinker, Karl Bühler (1934), who talked about the principles of "abstractive relevance" and "apperceptive supplementation", where the first accounts for the neglect of such physical properties which are not endowed with meaning, while the second explains the projection of properties not physically present in perception to the meaningful experience (See Figure 2.10). In fact, Bühler tried to explain such linguistic phenomena as Saussure and Hjelmslev described in terms of "form" as opposed to "substance": that certain properties of the physical sound may vary a lot without the units of meaning (the phoneme, the word, etc.) being changed; and that those other

properties which are not physically present may yet be perceived, because they are expected in the context. It can now be seen that Bühler's principles of abstractive relevance and apperceptive supplementation go much further than the sign. They have been found in the studies of the systems of cooking and clothing realized by Lévi-Strauss, Barthes, and others (as demonstrated by Sonesson 1989a).

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

> saying that *cytochorme c* means something to the cell is the same as saying that it has a function. It is not just any molecule. We could well synthesize small proteins and artificially introduce them into the cell. They would be without importance or they would be dysfunctional or, with certain fortuitous strokes of luck, they would actually fulfil some function in the cell" (Emmeche 2002: 19).

This implies that the meaning of the enzyme "is structural" in the sense that "the cell's molecules form a system of dissimilarities (like the elements of language in Saussure)" (Emmeche 2002: 20). This is, of course, true to the extent that there are relevancies in cells, notably if these relevancies result from a system of oppositions, like those of the Saussurean language. From this point of view, everything which is in the cells is also in language. But the opposite cannot be true. There is, of course, no semiotic function as we have defined it here.

2.2.6 Summary

As we say in the first section of this chapter, meaning is much broader than sign: it is given already in perception, notably in the form of indexicalities or neighbourhood relations, or in the form of iconic grounds, or identity relations. In this general sense, meaning may be understood as a way of picking up selected information from the real world, either by means of filtering out everything else, or by organizing the environment into a thematic hierarchy. The first case is well known from the work of von Uexküll and his followers in biosemiotics. The second case is more typical of the human *Lifeworld*. The sign, however, is a peculiar creature of the *Lifeworld*: it supposes the concomitant awareness of at least two items, which are *subjectively differentiated* from each other (though they may not be "objectively" differentiated, according to *Lifeworld* experience), while one of them is *directly given* but *not thematic* and the other *indirectly given* and *thematic*. It typically also supposes a (potential) awareness of the difference between the sign and the world, between (to paraphrase, partially, Peirce) the immediate and the distal content.

In this section, then, I have tried to spell out the reasons for presenting a notion of sign which is much narrower than the one suggested by Peirce, and much more explicit, than that featuring in Saussure's *Cours*. It is a notion of sign the specification of which has sprung from the history of controversies which, in Chapter 1, we characterized as the semiotic tradition of thought. At the same time, it is a notion which, I believe, is closer than any other so far proposed to a phenomenologically grounded notion of sign. The definition offered below, as a summary of this section, is minimal, in the sense that further specifications need to be added in order to delineate the prototypical sense of sign (and we will start doing so in section 2.4):

- the sign contains (a least) two parts (expression and content) and is as a whole relatively independent of that for which it stands (the referent);
- these parts are *differentiated from the point of view of the subjects involved* in the semiotic process, even though they may not be so objectively, i.e., in the commonsense *Lifeworld* (except as signs forming part of that *Lifeworld*);
- there is a *double asymmetry* between the two parts, because one part, expression, is *more directly experienced* than the other;
- and because the other part, content, is *more in focus* than the other;
- the sign itself is subjectively differentiated from the referent, and the referent is (at the moment of meaning-making) more indirectly known than any part of the sign.

One way in which this definition has to be complemented, as we will see in the fourth section, consists in attending to the act and process character of meaning-making, both in the sense of creating meaning and of appropriating it. This brings us to the notion of

communication, which happens to be one of the worst served ideas of present-day semiotics, though a good start, subsequently neglected, was made by the Prague School of Semiotics in the 30ies and 40ies of the last century. But first let us consider to what extent this sign definition applies to the picture.

2.3. The Emergence of the Picture Sign

There can be no doubt that the ability to interpret pictures is as unique a property of human beings as is language. However, it is normally taken for granted that the picture sign is simpler, at least in the sense of being evolutionary older, than language. Thus, for instance, those who have tried to teach language to apes have had recourse, at a preparatory stage, to the mediation of pictures. However, there are now reasons to think that, at least in some respects, the picture sign is *more* complex than language – it appears, it seems, later in ontogeny, if not also in phylogeny. But this impression may be created by our tendency to think of pictures as enduring artefacts, ignoring the possibility of earlier pictures having been sketched in sand, on skin, or using some other perishable material.

James Gibson (1971, 1973; 1980) has claimed that, while all animals perceive surfaces, only humans are able to see surfaces as having reference. In other words, pictures have ”referential meaning”; they contain invariants for surfaces but also for the objects referred to. Gibson thus appears to have a somewhat implicit concept of the picture as being a sign. Julian Hochberg and Virginia Brooks (1962) showed that a child 19 months old who had never seen a picture could readily interpret it if he/she were familiar with the objects depicted.[18] But they did not investigate whether the child saw the picture *as a picture* or as an instance of the category of the depicted object — a picture of a bird as a bird, etc. For the picture to be a sign, both similarity and difference have to be involved.

2.3.1 The original picture interpretation situation

According to a famous anecdote known to us from the historian Herodotus (1966: 102f), the pharaoh Psammetichus designed an ingenious experiment to find out which language were the original tongue of humankind: he took two newly born infants from an ordinary family and had them brought up under strict orders that no-one should utter a word in their presence. As a result, Herodotus (himself originally from Phrygia) reports, Phrygian was found to be the

[18] Sonesson 1989 (Sonesson 1989) used this a an argument (together with logical ones) against the conventionalist critique of iconicity formulated by Eco, Goodman, and others

original language. Whether or not this really occurred we will never know. During the Middle Ages, nevertheless, the experiment was repeated by several kings, expecting the children to speak Hebrew. Except for one case, in which this result was reportedly obtained, the outcomes were negative (See Table 2.1 and Sonesson 2019a).

Two and a half centuries after the time of Herodotus, the same type of experiment was at last carried out in the study of pictures. But Hochberg & Brooks, who performed this experiment, were not intent on finding out in which style the child would execute its first drawing if left alone (if indeed there ever were any; cf. Gardner 1980); instead, their experiment bore on the interpretative capacities of the child. Thus, they raised a child to the age of 19 months, impeding it from having other than incidental experience of pictures, and then exposed it to outline drawings and later to photographs of objects with which it was already acquainted, finding that the child had no trouble to recognize the objects. Commenting on this experiment in a later text, Hochberg (1972: 70f) himself observes that there either must be an innate capacity for interpreting pictures, or that such an ability has to develop at an early stage, and then not from pictorial experience itself, but from the ordinary experience of the world.

Table 2.1. The different attempts to repeat Psammetichus' experiment with "experimental conditions" and outcomes (reproduced from Sonesson 2019).

Researcher	Participants	Method	Result	Conclusion
Psammetichus 2500 years ago	Two new-born children	Isolated for two years, living with goats and a mute shepherd	Spontaneously uttered the Phrygian word "bekos" meaning "bread"	Phrygian is the original language
The Emperor of the Holy Roman Empire Frederick II of Hohenstaufen, during the 13th century	New-born children	Isolated	The children died before the end of the experiment	
King James IV of Scotland, during the 15th century	New-born children	Isolated	Spontaneously uttered Hebrew words	Hebrew is the original language
The Mughal emperor Akbar the Great during the 17th century	20 new-born children	Isolated together with silent guards and tongue-tied wet-nurses	Uttered no words	Language is learnt by imitating other speakers

This result, and Hochberg's conclusions, are remarkable. To begin with the former, it is obviously incompatible with any theory, such as that of Nelson Goodman or Umberto Eco, according to which a picture acquires its meaning simply by being "appointed" to be the sign of an object (as noted in Hochberg (1978: 235ff; see further Chapter 3). What is interesting about Hochberg's conclusions is that the most "obvious" alternative is not even considered, i.e., that no interpretative capacity at all would be needed, because the object and its picture are simply "similar". But of course, this is no serious alternative since there is no similarity between the picture and its object, except from the point of view of a very superficial phenomenology. If lines on paper are taken as equivalent to the edges of the object, Hochberg (1978: 236) notes elsewhere, this is a fact about the viewer, not about the light at the eye.

Apart from the observations on children, research into origins has always employed a second kind of investigation, that of peoples reputedly less civilized than us. This method also was first used in the study of verbal language. However, at least from the 19th century onwards, explorers and travellers, and later anthropologists and social psychologists, have reported on the difficulties experienced by members of "savage tribes", principally in Africa, when they were confronted with pictures for the first time and asked to explain their content (Cf. (Deregowski 1972, 1973, 1976); also for the following anecdotal material). Essentially, these reports would seem to testify to two very different, and apparently contradictory, obstacles to an adequate pictorial understanding: for either the hero of the story is unable to make out what kind of object the picture is, and what function it serves, or he/she fails to distinguish the picture from what it represents. Typical instances of the first kind of anecdotes are Herskovits's story about the puzzled woman who turns the photograph of her own son over again and again, without being able to understand what it was, and Muldrow's description of the Me' tribe, whose members smell and taste the pictures, but do not think of looking at them. The second series of anecdotes may be illustrated by the tale of the tribe panic-stricken to the point of running away at the sight of a slide projection showing an elephant; and by the report of another tribe treating photographs of white women as if they were real people.

Here, then, we encounter in their practical form the very same theoretical issues that have been central to the discussion of iconicity (to which we turn in Chapter 3): the problems of relating the picture to its object, and of distinguishing the former from the latter, an issue central to the paintings of René Magritte. Differently put, iconicity theories must expect all human beings to discover the relatedness of the picture and its object immediately, but some tribes fail to do that; and, rather more implicitly, these same theories must suppose that we are all able to

tell the picture and its object apart, but this too, it seems, is something some tribes fail to do.

But the experimental literature is really concerned with a third problem: our ability to discover, not *that* something is a picture, but what it is a picture of (Cf. the reviews of this literature in Deregowski 1972; 1973; 1976; Kennedy 1974; Pick and Pick 1978; Jones and Hagen 1980). Moreover, most of the experiments have been devoted to an investigation of the extent to which Non-western people are able to decode the depth cues inherent in Western linear perspective, whereas the logically primary task, the study of their willingness to take pigment patterns on paper to represent three-dimensional objects of the world, has been seriously neglected (as regretted by Deregowski 1973:165; 1976:19). Hudson performed a number of tests using perspectival pictures, which were repeated by Deregowski with some modifications, and both of them found a lesser ability on the part of native Africans, particularly unschooled ones, to interpret the depth cues of otherwise ambiguous pictures correctly. But Kennedy (1974:65 ff) gives a number of reasons for questioning these results: for instance, the drawings were often so unclear that the answers given by the Africans seem as plausible as the expected ones; and the social consequences of having, in South Africa, a white experimenter posing questions to black people were ignored, although these are evident from the fact that some persons waited an hour before making their reply. Jones and Hagen (1980 :203 ff) observe that white people never get 100 % right at the Hudson test either, and that New York children have been classified as two-dimensional perceivers according to the criteria of this test. However, from our point of view it is important to note that, even if Hudson is right, the fact that the Africans were able to go through with the test, seems to suppose that they recognized the picture as such, and as distinct from what it was a picture of, and that they identified the pigment patterns as standing for the antelope, the elephant, and the tree. Thus, they were certainly superior to the Africans of the anecdotes.

In fact, Hudson's subjects were probably familiar with pictures, though not with perspectival ones. However, Kennedy and Ross (1975) discovered that the Songe of Papua, who have no pictures, could identify well-known objects on outline drawings in 90 % of the cases, while less well-known objects were identified by 10-20-year-olds 97 % of the time, and by those over 40 years of age 68 % of the time. Deregowski also found that Ethiopians over 40 years old were slower at identifying depicted objects (cf. Jones & Hagen 1980:198). In general, the identification of objects on colour photographs occasions no problems, according to Jones & Hagen (1980:196); but black-and white photographs may cause trouble, particularly so if, as in one of Deregowski's tests, pictures of unknown animals have to be matched with the

corresponding models. In the case of somewhat more complex drawings, Deregowski (1973:165) noted the importance of cultural expectations: what to a Westerner seems a window behind a woman's head looks to the East African like a four-gallon tin carried on the head in question (which supposes a Necker cube type of perspectival reversal). But considering the large amount of different picture types, and their different levels of complexity, almost nothing is really known about the limits of object recognition in pictures.

2.3.2 Pictures in Different Socio-cultural *Lifeworld*s

We can now return to the issues raised at the beginning of this section: the difficulties of relating the picture to its object and distinguishing the two. Referring to Herskovits's puzzled woman, Kennedy (1974:68) points out that being puzzled over something is very different from seeing it as "mere daubs on a surface. Indeed, mere daubs on a surface would hardly puzzle anyone." It is conceivable that the woman does recognize her son, but that it seems unbelievable to her that a mere piece of paper is capable of suggesting the appearance of her son. But now what about Muldrow's story? Members of the Me' tribe, we are told, smell the pictures, taste them, bend them, and so on, in short behave like a Piagetian child exploring his/her world. According to Deregowski (1973: 167; 1976: 20) not only pictures, but materials like paper are unknown to the Me'; therefore, when Deregowski had pictures printed on coarse cloth, animals well known to the tribe could be identified, although the recognition was still not immediate. In the case recounted by Muldrow, it seems the Me' were so busy trying to discover the fundamental properties of the paper as an object in itself, that the iconic properties, those making it a pictorial sign of something else, were not noted; other attributes became dominant in their experience of it. It therefore seems (as I suggested in Sonesson 1989) that for something to be a pictorial sign of something else, it must occupy some relatively low position in the particular *Lifeworld* hierarchy of "things". Before returning to this question, however, it will be convenient to consider the second of the issues mentioned above: the distinctiveness of picture and object.

The Ancient Greek painter Zeuxis is famous for having depicted a bunch of grapes in so illusory a manner, that even the birds were fooled. Commenting on Pliny's well-known story, E.H. Gombrich (1963: 5f) claims this was no great feat of Zeuxis's since, as ethology has shown, animals react to very gross similarities. However, it seems that Patrick Cabe's pigeons would not follow suit as the other birds launch their attack on Zeuxis's grapes. Most experiments purporting to demonstrate the ability of some animal species to interpret pictures have neglected to investigate whether the animals are also able to tell the difference between the picture and its object; but Cabe (1980: 335), who makes this observation, tells us he has taken pains to

ascertain that the pigeons of his experiments possess the latter capacity (p 313f). So far, then, it seems that even pigeons are superior to our anecdotical Africans in the art of reading pictures.

According to Gardner (1982: 105), American children aged 4 to 7 tend to confuse the motive and the picture; however, when attention is called to the medium, they are able to understand the point. Perhaps, then, the distinction just seems to them to be too obvious or too unimportant to be mentioned. The moment after having taken to flight at the sight of the pictured elephant, the members of the tribe visited by the explorer Lloyd discovered their mistake and returned laughingly to the front of the screen. Of course, the difference between the elephant and its picture was neither unimportant nor obvious to them; but in a moment of potential threat, they were certainly wise to react on insufficient evidence. Since perception seems to start relatively high up on the ladder of abstraction, it is indeed probable that, in a moment of stress, only very gross similarities will be noted, even those which are not ordinarily category-defining. The other story, where photographs of white women are treated as real people, is rather implausible; if not some magical equivalence is meant, then perhaps this behaviour must be understood as a kind of social deference to the white men who showed the pictures. Again, more research would be needed to go beyond these anecdotes.

More recent experiments have shown that even children 5 months of age look longer at a doll than at its picture (DeLoache and Burns 1994). However, it does not follow that the children see the picture as a picture. Indeed, 9th-month-olds, but not 18th-month-olds, try to grasp the object depicted as if it were a real object (DeLoache 2004); whatever the difference they perceive, then, it does not seem to involve signs as opposed to objects. It seems to me that, just as in the case of the doves, this may simply show that the picture and its object are seen as being different, but not necessarily as being a sign-vehicle and its referent. The real doll is perhaps seen as a more prototypical instance of the category; or, alternatively, the real object may be more interesting because of having more perceptual predicates.

Sonesson (1989) argued that once we know that something is a sign, and, specifically, a pictorial sign, the particular "similarities" will take care of themselves. If we are not told that some particular thing is a sign, and iconic at that, then we may perhaps be aware of it because of general facts derived from our experience of the commonsense world. That paper is the kind of stuff of which signs, and in particular pictorial signs, are made, was not obvious to Herskovits's puzzled woman; and to the Me', this material was so interesting in itself that it absorbed all interest; coarse cloth, however, was easier to conceive in this humble part, though even now, time was needed to discover what was depicted, perhaps because the sign function

itself had to be discovered. If we suppose the Hochbergean child to understand, not only that given pigment patterns on paper have something to do with the shoe, the doll, and the Volkswagen of the real world, but also that the former are signs for the latter, and not the reverse, then it will not be enough for the child to have learnt from his experience with objects of the world that the edges of objects have properties which are shared by contours drawn on paper, or to be innately predisposed to react to these common properties (cf. Hochberg 1978: 136). He must also have acquired, probably from experience in his particular Occidental *Lifeworld,* some notion of the relative low ranking on the scale of prototypical *Lifeworld* things of a material like paper, which directs his attention, not to what the pigment patterns on the paper are as "selves", but to what they stand for. And perhaps he must also possess some idea of a meaningful organization, which relieves him from the task of finding a meaning in ink blots, in the dirt on the road, in the stains he makes with his dinner on the tablecloth and in the clouds.

2.3.3 Further Views from the Playground

Familiarity with paper or cloth are facts of particular cultures. Paper, which is too prominent to the Me' to serve as a sign-vehicle, traditionally carries this function in Western culture. But Sonesson (1989) suggested that there probably would also be universals of prominence: thus, for instance, two-dimensional objects are felt to be less prominent than three-dimensional ones and may thus more readily serve as expressions. In this sense, it is not true that the object is its own best icon, as is ordinarily claimed – at least if iconic means iconic sign. Indeed, iconicity stands in the way of the sign function. The objects of the common sense world are three-dimensional: much less is required for a two-dimensional object to be able to represent one of these objets than for another three-dimensional object to do so. This is precisely what is suggested by DeLoache's more recent experiments with children: not only is the picture understood later than language in these experiments, around 2 1/2 years (Deloache & Burns 1994, etc.), but scale models are understood even later, at 3 years of age, half a year after pictures (DeLoache 2000). As also noted by DeLoache, this contradicts what is expected by common sense. But it is reasonable, if the issue is separating the sign and its referent.

DeLoache (2004) employs the term "double representation" to describe the necessity for the child to attend both to the picture and the object depicted. This is a misleading term, for there is only one representation, that is, one sign function.[19] Rather, in Gibson's more

[19] Perhaps DeLoache talks about "representation" in the sense in which the term is often used in

enlightening terms, there are invariants for both the surface and the referent in the object, and the task is to tell them apart, and decide which is most prominent. In fact, the problem only arises because there is at the same time a sign function and iconicity. This means that the term ”double representation” is not only misleading: if fails to explain why pictures are easier to interpret than scale models.

In all Deloach’s experiments, the task is, in one way or other, to find a hidden object by using information contained in a picture or a scale model. According to the standard procedure, the experimenter and the child are at first outside the room in which the child is to search for the toy. The child cannot see the picture or scale model and the room at the same time. The experimenter tells the child that she will hide the toy in the room and then come back and ask the child to search for it. She returns to the child and points out the appropriate location in the picture/scale model telling it “This is where Snoopy is hiding in his room, can you find him?”. If the subject fails in the first search, it is once more shown the picture and given more explicit prompts. Twenty-four-month-old children do not pass the retrieval test, but 30-month-old do; there is no difference in performance using photographs or line drawings. However, when the whole procedure is conducted verbally, children pass the test already before 24 months; and when a scale model is used, only 36-month-olds pass it.

This way of investigating the picture function may be criticized from two diametrically opposed points of view. First, it could be argued that the task involves much more than the recognition of the picture as picture - it requires an action, which is no doubt as such difficult, namely, to search for the hidden object. It remains, however, that even this task is differently accomplished if the instructions are given entirely in verbal form, or if they involve pictures or scale models. On the other hand, even when the instruction for the task features pictures or scale models, at lot of verbal and indexical scaffolding also takes place, without this being taken into account in the interpretation. It has been argued by Callaghan (Callaghan and Rankin 2002) that pictures would be interpreted even later if such verbal scaffolding had not taken place. More fundamental, however, may very well be the indexical scaffolding: not only are the objects *pointed out* by the experimenter in the picture or the scale model, but the latter are even placed *on* the real objects, creating an artificial neighbourhood relation.

Another one of Deloache’s experiments seems to indicate that the sign function is at least part of the problem. When the experimenter, instead of talking about a model and a real room, tells the children that the search has to take place in the same room, which has shrunken since

cognitive science, but then this is precisely the problem, as we shall see later.

it was last seen, the task is accomplished much more easily (DeLoache et al. 1997). The difference, clearly, is that the two instances are here connected by a narrative chain rather than by a sign relationship. In another experiment, DeLoache (2000) places the scale model behind a windowpane, in order to make it more similar to a picture, with the expected results. In fact, however, two things happen here which would have to be separated: the object becomes less prominent, because it has less the appearance of three-dimensionality; and it is put into a frame, which creates a centre of attention.

DeLoache's work can be seen, of course, without her knowing it, as experimental investigations of the central issues broached in Sonesson (1989). As always, the investigation engenders new problems. However, if understanding pictures is as difficult for children as DeLoache and, even more, Callaghan, suggest, then we should not expect animals to be able to do so. We have already proposed some alternative explanations for the behaviour of Cave's pigeons. On the other hand, primatologists, as mentioned at the beginning of this section, tend to take for granted that the apes to which they are trying to teach language already understand pictures. There are only a few regular investigations of apes looking at pictures and scale models: Shoji Itakura (1994) reports that enculturated chimpanzees can interpret line drawings; Kuhlmeier (and Boysen 2001, 2002; et al. 1999) have even shown their chimpanzees to understand scale models. In his dissertation, Tomas Persson (2008) demonstrated that the multiply talented bonobo Kanzi, who had learnt to master a kind of language by observing what was taught to his family members, was also able to map pictures to meanings.

It is difficult to know what to make of these results, already because these apes are all enculturated, which is to say that they are trained in many of the semiotic resources which in ordinary circumstances are peculiar to the human *Lifeworld*. Moreover, it should be noted that, while the children were introduced to a model of a room which they had never seen before the training phase, the apes were confronted with a model of their own familiar environment. In addition, a lot of facts about the subjects and the experimental procedure are not clear from the articles. At present, it would therefore be premature to draw any conclusions about the abilities of the great apes in this domain.[20]

Several research paradigms involving pictures and comparable vehicles of meaning-making initiated by psychologists such as Judy DeLoache, Michael Tomasello, Thomas

[20] More about picture perception in pigeons, and a little in apes, can be gathered from Fagot et al. (2000). However, none of these articles take into account the difference between the picture and the depicted object.

Sudendorff, and others, were replicated in a semiotically explicit way by us at the Centre for Cognitive Semiotics. There will be ample reasons to return to these experimental studies in the following. For the moment, it will be sufficient to account for some experiments which have a direct bearing on the studies by DeLoache.

Sara Lenninger (2012) replicated DeLoache and Burn's (1994) study with some crucial alterations. Firstly, the experiment took place at the children's customary pre-school, that is, in a familiar environment instead of in a laboratory (something which in other experiments has often made an appreciable difference), second, the coveted "toy" was exposed in plain view and not hidden under a cushion or in a wastebasket. Hence, if the child (guided by the pictorial information) entered the correct part of the pre-school locations, the object could be seen without searching for it. Of course, the first alteration made possible the second one, since the children could recognize a familiar environment from the pictures (and they all did). The next step, though, to use the pictorial information to find the toy at the actual place remained difficult for children younger than 30 months even after repeated trials. Thus, the (perhaps) lessened burden of a familiar environment (where adults often give children "tasks"), and by avoiding the difficulty to "search for" the toy, did not help the children better to make use of the pictorial information in this task. Nevertheless, also under these circumstances, children were observed to rush into the room where the object is placed, stand in front of the object holding the picture in their hand, and still being unable to identify the object in the picture and the object depicted – that is, even when the latter is not hidden but in full view (Lenninger 2009). So far, DeLoache's results were also confirmed under these different circumstances. In a pilot study, however, Lenninger found that much younger children were able to identify an object features in a picture when it appeared in another one, also when the point of view was not the same. Of course, it would be necessary to vary systematically the different viewpoint on the object, in order to draw any definite conclusion. However preliminary this result, it constitutes an important observation, to which we will turn again in the next Chapter.

2.3.4 Donald's Scale of Evolution

It has been suggested by Merlin Donald (1991, 2001) that there are several phylogenetic discontinuities (which can be extended ontogenetically, as suggested by Jordan Zlatev (2002; and Persson 2003) and Katherine Nelson (2007) in the development which leads from non-human animals to human beings, all involving the acquirement of a distinct kind of memory, considered as a strategy for representing facts. Without necessarily taking every detail of Donald's scheme at face value, I am going to make use of it here, because it accounts for a lot

of facts, while also permitting a productive integration with semiotic theory. Indeed, as we shall see, both the Prague School and the Tartu School of semiotics have often conceived of meaning in terms of memory.

According to Donald's conception, many mammals, who for the rest live in the immediate present, are already capable of *episodic memory*, which amounts to the representation of events in terms of their moment and place of occurrence (cf. Figure. 2.11). The first transition, which antedates language and remains intact at its loss (and which Donald identifies with *homo erectus* and wants to reserve for human beings alone) brings about *mimetic memory*, which corresponds to such abilities as the construction of tools, miming, imitation, co-ordinated hunting, a complex social structure and simple rituals. This stage thus in parts seems to correspond to what we have called the attainment of the semiotic function (though Donald only notes this obliquely, in talking about the use of intentional systems of communication and the distinction of the referent). Yet, it should be noted already at this point that while all abilities subsumed in this stage seem to depend on iconic relations (perceptions of similarity), only some of them are signs, because they do not involve any asymmetric relation between an expression and the content for which it stands.

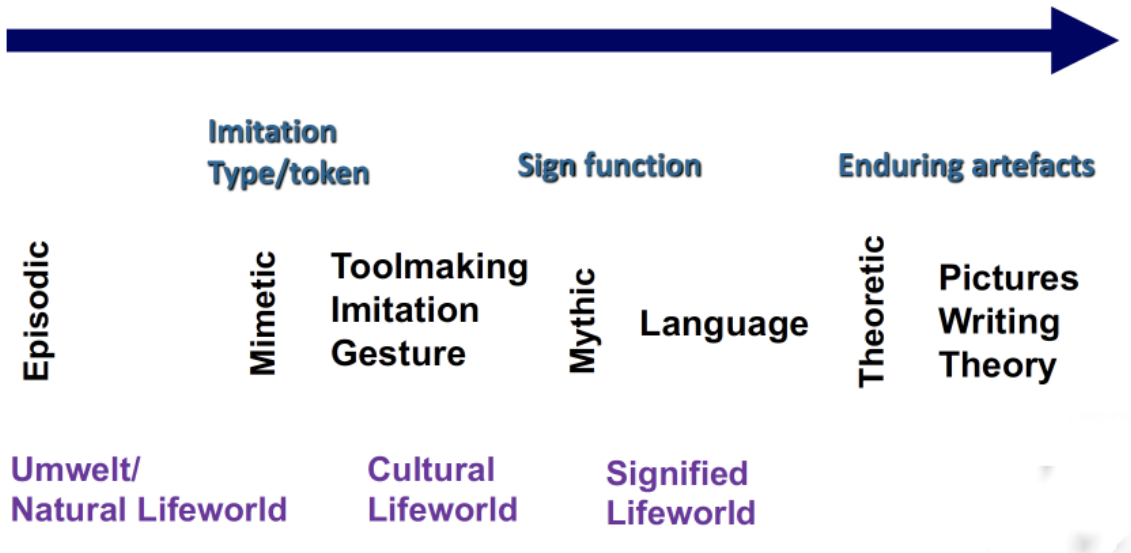

Figure 2.11 Semiotic stages of development, according to Donald, expressed in terms of types of memory; with the addition of the relation to the semiotic function and the different "worlds" of cognitive semiotics.

Only the second transition brings about language (which, Donald muses, may at first have been gestural) with its *semantic memory*, that is, a repertory of units which can be combined. This kind of memory permits the creation of narratives, that, is mythologies, and thus a

completely new way of representing reality. Interestingly, however, Donald does not think development stops there, although there are no more biological differences between human beings and other animals to take account of. However, the third transition obviously would not have been possible without the attainment of the three earlier stages. What Donald calls theoretical culture supposes the existence of *external memory*, that is, devices permitting the conservation and communication of knowledge independently of human beings (later termed "exogram" by Donald 2010). The first apparition of theoretical culture coincides with the invention of drawing. For the first time, knowledge may be stored externally to the organism. The bias having been shifted to visual perception, language is next transferred to writing. It is this possibility of conserving information externally to the organism that later gives rise to science.

There are two remarkable features in Donald's analysis. The stage preceding the attainment of the language capacity requires memory to be located in the own body. But, clearly, it can only function as memory to the extent that it is somehow separable from the body as such. While being *in* the body, it is not *of* the body. In fact, this can only be so, to the extent that some memory traces are instantiated in other bodies as the same time as in once's own body. This supposes a distinction between *token* and *type* (that is, relevance) preceding that of the semiotic function (See section 2.5.4).

The stage following upon language supposes the sign to acquire a body of its own, in the strongest sense of the term: the ability to persist independently of human beings. Language (orally) only seems to require the presence of at least two human beings to exist: they somehow maintain it between them. But pictures must have a body of their own. They must be divorced from the bodies (and minds) of those making use of them. As Husserl noted well before Donald, material embodiment is necessary also for science, starting with mathematics and logic. Independently of both, Ivins (Ivins 1953) pointed out that it is the reproducibility of pictures (as in floras, for instance) which makes them into scientific instruments. In this sense, in their capacity of being permanent records, pictures are not, as art historians are wont to say, unavoidably unique, but, on the contrary, are destined for reproduction. Indeed, they permit repeated acts of perception, as do no earlier memory records. The development of the capacity for reproducing the record itself has a long history recently giving rise to xylography, photography, and the computer picture.

Students of prehistoric pictures (such as Randall White 2003) often suggest that creators of such works must have been capable of language. In fact, not much can be concluded on the

basis of the depictions having come down to us: even though pictures, as we know them, must have been made on material which conserves the markings on the surface, they might at first have been created on surfaces (such as sand) which only preserve them for a short time. This was my original objection to Donald's scheme, first made when listening to Donald's lectures at Lund University during the autumn term of 2009, but later spelled out in (Sonesson 2013b, 2016c: 45f), where I also refer to the idea voiced by Noble and Davidson (1996), according to which depiction must be a necessary stage preceding language. My reference, at the time, was the rather anecdotal one of Tibetan sand painting. Since then, I have become aware of the work of Jennifer Green (2014) on still practiced Australian sand drawings and of Simon Devylder (2019) on current Paamese sand drawings.

Moreover, it is not easy to establish any clear-cut relation between the language capacity and the sophistication of the depictions (whatever that is). Noble and Davidson 1996 have suggested that depiction must be a necessary stage preceding language, since pictures, unlike language, can somehow arrest a perceptual scene and put it into a frame. But, as I have retorted elsewhere (see Sonesson 2016c: 45f), the same part may have been played by gesture. There might, however, be more fundamental reasons for supposing pictures to be later in development than language: they suppose a record which is independent of the human body; and they require us to see a similarity within an overarching dissimilarity (See Chapter 3). Whether these reasons carry any weight in the long run is still impossible to determine.

2.3.5 Summary

We have seen that the picture must be understood as a sign, which implies that it is both similar to what it represents, and different from it. This is where it becomes problematic: even though pictures are not conventional (to any large extent), contrary to what has been argued by many semioticians, some experience is needed to be able to interpret them as such. We know that children need some time to gain this knowledge, and other animals, with the possible exception of some of the great apes, never acquire it. If it should be possible to discuss whether the sign is a stage of the octo- and/or phylogenetic development of the human beings, and, if so, at what point this stage is attained, we need a characterization of the sign which is much more specific than those given by Saussure and Peirce. We need to understand how the sign is different from more elementary kinds of meaning given in the perceptual world. In the context of the present study of pictorial semiosis, this was the task which was accomplished by the first two sections of this chapter. But there are some essential properties of the sign which only become manifest when we consider it as a peculiar way of meaning-making, that is, as an act in which the sign

is produced and offered for interpretation. This is what is ordinarily called communication, which already is a very problematic notion, as we will see in the next section.

2.4. Communication as a (Double) Act of Meaning-Making

To grasp the idea of communication, cognitive semiotics at present has to rely on the part of its heritage coming from cognitive science, and more specifically from the comparative psychology of different primate species. As Michael Tomasello (2008) observes, communication is a kind of collaboration. Unlike other species, Tomasello (2009: 1f) notes, human beings are "born and bred to help". Other primates, it turns out, are able to co-operate when this is to their mutual benefit, and even, to some extent, to share food. But what they cannot do is to share information. This suggests that there is something particular about information, or, as I shall say, the pool of knowledge, but Tomasello has nothing to tell us about this specificity.

Semiotics, overall, has not been of much help here either. Although trains and cars move, change of position in space is not a requisite of communication, in the in which a meaning is communicated from one person to another, contrary to what is suggested by the mathematical theory of communication still current in semiotics, and promoted, notably, by Roman Jakobson (1960) and Umberto Eco (1976). Communication in the sense of presenting meanings must be liberated from the sense in which it involves cars, trains, and the like, which change their position in space. Like the sharing of food resources, which is found in apes, the latter involves a movement from one position to another, and, if anything is shared, it is certainly not information. Two traditions from within semiotics may nevertheless lend us a hand here: There are things to be learnt about communication from the Prague model: that the receiver is equally active as the sender. And there are things to be learnt from the Tartu model. The latter is really concerned with relationships between cultures, but these can be reformulated in terms of the act of communicating. What the Tartu School says about sender and receiver cultures can be rephrased as two different positions taken on the act of communicating (Cf. Sonesson 1999b).

The approach to the act of communication in this section can be considered another perspective taken on the sign, as discussed above (in section 2.2), comparable in this respect to the distinction made by Husserl between the noetic and the noematic vantage points, and the discriminations proposed by Humboldt, Bühler, and Coseriu, between the various manifestations of the linguistic act (the complexities of which cannot be addressed here). Apart from clarifying the meaning of communication as understood in semiotics, this approach will

allow us to account for the difference between the Aristotelian sign and that of Augustin, in terms of the sign of the addresser and that of the addressee.

2.4.1 The Three World Circulations: Messages, Money, and Mates

According to Claude Lévi-Strauss (1958: 329), there are three vast circulations going on in the world: the circulation of words, of merchandise, and of women. They are studied, in turn, by *linguistics*, *economy,* and *social anthropology.* Jakobson (et al. 1990: 19f, 460f) took this idea up and extended it: the three circulations concern messages (not only verbal signs), commodities (which comprise goods and services), and mates (men or women as the case may be). The sciences which study these phenomena are *semiotics*, *economy,* and *social anthropology* in conjunction with *sociology*. The latter addition is perhaps not circumstantial: Lévi-Strauss is thinking about the kind of societies studied by anthropology, in which friendly relations are established between tribes by one tribe giving wives to another, which then may give wives to a third one, until, in the end, the first tribe receives wives back from one or other tribe in the chain of exchange. In the societies studied by sociology, on the other hand, the circulation would rather consist in a man and as woman moving in together (and, of course, also of two men or two women doing the same). Jakobson and Lévi-Strauss agree that these sciences studying circulations are all part of some more general science which they call the study of communication, but Jakobson also emphasizes that they all imply the presence of language or other signs, so that, in the end, in may seem that this more general science is semiotics itself.

In an early work, Dan Sperber (1974) took exception to these parallels: while circulation is a constitutive factor of the kinship system, it is only an accidental property of language, which is essentially a repertory of messages; and when information has circulated for a sufficient time, we will all be in possession of it, but a woman or a horse which is exchanged is lost for the donor; and while language signifies by means of a code, women only acquire meaning by means of the attention being directed to them. It is easy to agree with the general drift of Sperber's argument, but sometimes he is widely off the mark. To begin with, a language which does not circulate (i.e., is not used in any acts of communication) is not much of a language; in fact, it is what we call a *dead* language (like Latin, or Hebrew until it was reborn). On the other hand, the circulation of women is certainly not constitutive *of women.* In fact, I think that, in the kinship system, women do not signify at all; it is the act of exchanging them which carries meaning. And this is certainly a difference to the exchange of signs, in which the latter carry at least the primary sense, which the exchange serves to convey. In fact, it is easy to imagine a

way in which a woman, arriving from one tribe to another, does carry meaning in herself: speaking another language, having different customs, etc., she may appear as a "non-text", in the sense of the semiotics of culture, to the members of the receiving culture. In fact, she may even carry meaning as the individual person that she is: even after reducing the message to make translation possible, as Lotman (1979: 91) nicely puts it, the message may still contain indications for reconstructing the personality of the other (cf. Sonesson 1987, 1992a: 91ff).

Communication in the material sense (in the sense of the current spatial metaphor) really implies that something which leaves one place is not there anymore when it arrives at a second place: this is true of the train, as well of the letter which it may transport, and even, in a sense, of content of the latter, but not, of course, of the units of which the message is made up. The circulation of women (and of mates generally) as well as of commodities suppose a double movement from one place to another: one tribe gives women to another tribe and receives women back (or a man and a woman "give themselves up" to each other); and when receiving a horse, I give money or perhaps a donkey back. But the exchange of signs is not necessarily double; it does not even necessarily imply any spatial movement in the *Lifeworld*. A television picture or a web page is transferred from afar, but they are not perceived to move in space. It seems rather absurd to speak of the meaning of a fresco painting being transferred by circulation – though there is, of course, a movement of the photons from the rocky surface to the eyes of the observer. A fresco painting is an example of a sign which would certainly not remain at its place of origin if it were transferred to a museum. But the same is true of my drawing showing you how to arrive at our meeting place, if I send it to you by the post (but if it is conveyed by SMS this is not the case, at least not immediately). As stated above, it is also true of the accompanying letter, though not of its constitutive elements. However, there is a sense in which a picture postcard or a reproduction of Mona Lisa will remain at the point of origin while being sent off to some distant place: as a *type*, if not as a *token* (cf. Sonesson 1992a: 91ff).

2.4.2 Beyond the Shannon-Weaver Model: The Prague School

Let's start by distinguishing Communication[1] and Communication[2]. Since this is the kind of communication in which we are interested at present, we will understand Communication[1] as being the process by means of which some or other piece of knowledge (where knowledge is taken in such a broad manner as to include the fact of somebody just sneezing) only known to one (group of) person(s) is being shared with another (group of) person(s). Communication[2] involves the translocation of some item (person or thing) from one place to another. The tendency of understanding Communication[1] in terms of Communication[2] clearly antedates the

formulation, by Claude Shannon and Norbert Weaver (1949) of the mathematical model of communication. Indeed, well before the invention of communication theory, in the 20ies of the last century, Valentin Vološinov (1973) pointed out the fallacious implication of this comparison. Whether this "conduit metaphor", diagnosed by Michael Reddy (1979)s really owes its popularity to being one of the "metaphors we live by", in the sense of George Lakoff and Mark Johnson (1980a), is a moot question. In any case, it is not a metaphor in the sense of Aristotle, the vehicle of which makes you discover hitherto unknown and important properties of the tenor, as spelled out by Max Black (1962) while comparing the metaphor to the (scientific) model. On the contrary, it is a metaphor which has the effect of obscuring the nature of Communication[1], the kind of communication which interests us here.[21]

Neither Vološinov nor Reddy suggested any model apt to take the place of this beguiling metaphor. Reddy certainly proposed the "toolmaker's paradigm" as a better choice, but it is unclear how this conception could do the same job as the conduit metaphor. This is not the end of the confusion, however. One would think that the second metaphor, which has contributed to the muddle about the nature of Communication[1] must have come right out of the Shannon & Weaver model, according to which a message had to be transformed into another code, such as, in the case of telegraphy, the Morse code, in order to by communicated (in the sense, as it happens in the case of Communication[1] and most of the time also of Communication[2]). In the following, we will call this idea of communication Communication[3]. However, well before Shannon & Weaver (but after the invention of the telegraph), Peirce propounded an idea of the sign, which has been taken since then to be equivalent to Communication[1], according to which its meaning (interpretant, etc.) consists in its being exchanged for another sign, and so on (though not necessarily for ever, as Derrida understood it). Unlike the translocation metaphor (Communication[2]), this comparison (Communication[3]) has something important to say about semiosis. Nevertheless, both metaphors serve to avoid the real issue about how meaning is produced and shared between different subjects.[22]

It was in the social semiotics (or, as they said, semiology) of the Prague School in the 1930ies that a more relevant approach to the act of communication was sketched out. Jan

[21]Here, and in the following, it is only for linguistic reasons that we speak about "kinds of communication". Communication[1] and Communication[2] (and, as we will see shortly, Communication[3]) are quite different in nature, although they may happen to occur together in some temporally and spatially situated acts.

[22] Another problem, not taken up here, with the Shannon-Weawer model, as well as with the interpretation of DNA as a vehicle of meaning, is the confusion between "information" as used in the theory of information (roughly, uncertainty), and information as meaning. See Kay (1998).

Mukařovský (1970, 1974), one of the main figures of the Prague School, started out from the phenomenology of Edmund Husserl – or, more exactly, from that of Husserl's follower Roman Ingarden (1965), – in order to characterize communication, in particular as instantiated in a work of art, but then added to this a social dimension. The most important idea to retain from the Prague School, in my view, is that communication (in the sense of conveying information) is not necessarily about transportation or encoding, but it does involve the presentation of an artefact by somebody to somebody else, giving rise to the task of making sense of this artefact. This process by means of which an artefact is interpreted is called concretization.

Mukařovský, like Ingarden, formulated this notion of concretization with reference to the work of art, but, in my opinions, this conception can be generalized to all kinds of communication processes in which information is shared or perhaps, better, jointly created. This is so, already because the model is based on insights derived from phenomenology. Since, to Mukařovský, concretization is a social act, the process of creating the artefact, as well as that of perceiving it, is determined by a set of norms, which may be aesthetic (and in works of art they would be predominantly so), but they can also be social, psychological, and so on. The work of art is that which transgresses these rules. Mukařovský points out, however, that these norms may be of any kind, going from simple regularities to written laws. Although Mukařovský doesn't specify this idea further, we can draw some conclusions, on the basis of what was said above (in section 2.1) about normalcy and normativity. There is a continuum from normalcy to normativity, without qualitative divisions being discounted. The "laws" of ecological physics, and the invariants of the *Lifeworld*, are of course on the side of normalcy. Many of the rules and regularities of particular socio-cultural *Lifeworld*s also pertain to normalcy. Still, many of them are also normative, without being laws in the literal sense of the term. Normalcy is what is expected; normativity is what is prescribed. Some kinds of expectancy borders on prescription. There are societies, groups and situations in which what is expected is *ipso facto* ordained. This is not supposed to account for the case of some contemporary dictatures, such, at present, Belorussia, in which "laws" are extemporarily instantiated, without ever being officially promulgated, for, in this case, the laws exist in the propaganda of the authorities in power. No matter how disturbing this situation is, from a theoretical point of view, it is, of course, much more problematic as something taking place in reality.

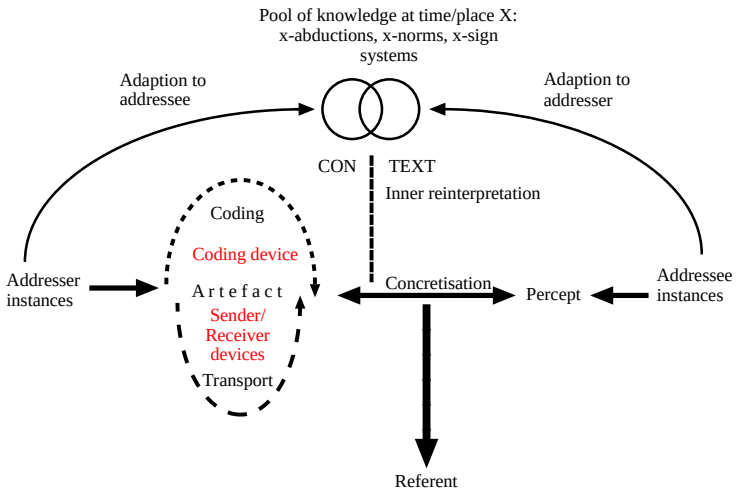

Figure 2.12. Model of communication integrating the Prague and the Tartu model, as proposed in Sonesson 1999.

2.4.3 The Generalization of the Prague Model into Phenomenology

Already because this model builds on the phenomenological conception of perception, it can easily be generalized to the everyday case of communication. All kinds of communication consist in presenting an artefact to another subject and assigning him or her the task of transforming it by means of concretization into a percept. Simply put, what happens in communication, in the relevant sense, is that some subject creates an artefact, and another subject is faced with the task of furnishing an interpretation for this artefact (cf. Figure 2.12 and Sonesson 1999b, 2014a). Displacement (Communication^2) may then be required, as when a letter is sent by train from one place to another, but it may also be the case that the addresser has to change location in order to initiate a semiotic act, such as sending a telegram (perhaps only relevant for such outmoded kinds of semiosis), or the addressee may have to take up some specific position to accommodate the act (as when going to a prehistoric cave, or even a museum, to see a picture, or to a theatre or a cinema to watch a play or a movie). As for recoding (Communication^3), it is sometimes needed, but most of the time, the same (or at least overlapping repertories of) signs may be used at both ends of the communication chain. The essential thing, in any case, remains the artefact and the instructions for bringing about the realization of its meaning.

In several earlier publications (Sonesson 1999; 2014; Sonesson 2018a), I have sketched this model of communication, but, so far, I have never pondered whether the task set by the addresser of the communicative act has something to do with the Gricean model of "non-natural meaning" (as opposed to the "natural meaning" of clouds, measles, animal tracks, etc.),

according to which such meaning only comes into being if there is somebody around having an intention (in the sense of purpose) to convey the meaning; or, more precisely, if there is an intention to intend, and perhaps even an intention to intend the intending. Elsewhere (in (Sonesson 2012; 2018a), I have argued against this model, to my mind conclusively, suggesting that it stands the facts of our experience on its head. Thus, for instance, even if you are in the middle of a desert, and you recognize something as being an instance of writing, you will take for granted that it must have been caused by some person or other (including angels, djinns, and whatever) having had the purpose to produce it, whether directly, by writing it, or by means of what I have elsewhere called a *remote purpose*, which supposes there to be some kind of device that produces the writing, which, by increasing degrees of remoteness from the subject having the purpose, may be a set of seals, a printing press, a typewriter, a telegraph, or the printer of a computer (See section 2.4.6 and Sonesson 2002). On the other hand, if, on the same spot, you recognize some shapes in the sand as traces left by a camel or a horse, and of whatever else you may be able to identify from the shapes imprinted on the ground, if you are William of Baskerville, Zadig, or one of the Serendippus brothers, you take for granted (until proven otherwise, as in the Sherlock Holmes story "Silver Blaze") that these traces have not been produced on purpose, and you interpret them accordingly (See Figure 2.13). This may seem to be a kind of interpretation which is only relevant (or at least only arrives at the level of awareness) to hunter-gatherers, but, in fact, it is very relevant to scholars presently investigating possible indications of there being life elsewhere in the universe, i.e. biosignatures (See Dunér 2018).

This suggests that at the beginning there is pattern recognition. In other words, there is a token which is mapped to its type, which does not necessarily mean, in this context, a specific type, but rather a type pertaining to a particular category of phenomena of the *Lifeworld*, such as, human beings or something kindred, in the first case, and things of nature, in the second case. But, in this second case, who sets the task of interpretation? Certainly not nature, which is always mute. The task is set by the collective knowledge of the community of which we are a part. In other words, William of Baskerville may be better than any other member of his community at interpreting the traces left on the ground by animals passing by, but his capacity in this respect can only be a refinement of the community knowledge existing in his sociocultural *Lifeworld*. If we generalize the counter-description of the Gricean model which I have proposed elsewhere (Sonesson 2012), we may arrive at something like the following characterization:

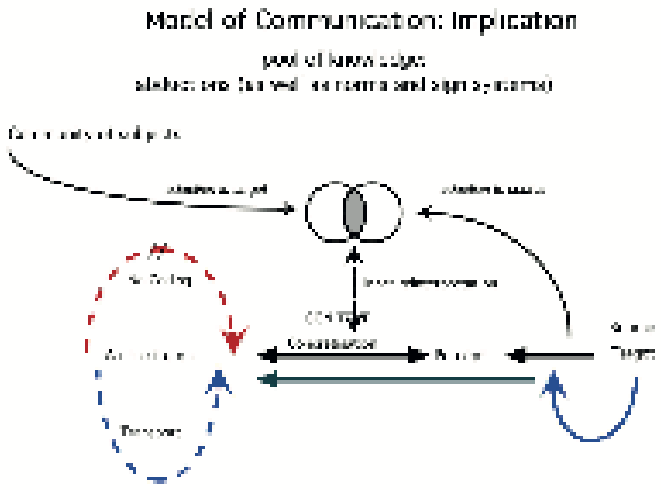

Figure 2.13 Model of (inadvertent) communication or, perhaps better, meaning conveyance, when there is no addressee, in the sense of a subject having a purpose in creating the meaning vehicle.

- *X* is perceived to be an instance *I* of the cultural object type *O*.
- Our cultural experience tells us that object *O* a) is normally produced with a (more or less clearly articulated) purpose – or b) is the result of an act which did not include *I* as one of its purposes;
- If 2a, there must be a conceivable subject *S* having such a purpose. If 2b, the subject to which the instance is assigned in not, at least in this particular case, supposed to harbour any purposes.
- In the case of 2a, the purpose of producing *O* is normally to convey a message *M* from the subject *S* to some other (specified or non-specified) subject(s) S2. In the case of 2b, *O* is produced as a marginal result of some activity having a different purpose.
- If there are no indications to the contrary, in case 2a, we have reasons to suppose that *X* has been produced with the purpose of conveying a message *M* from the subject *S* to the subject(s) *S2*. Similarly, in case 2b, if there are no indications to the contrary, we have reasons to suppose that *X* has been produced without any purpose of conveying a message of any kind, but as a result of an activity on the part of a subject which may be interesting in itself to *S2*.

Given this generalized model of the conveyance of meaning, it may be better not to say that the addresser sets a task of interpretation to the addressee, but rather that, along with the perceiving of the artefact, the addressee has the experience of a task of interpretation having been set for him, whatever the source of this task. This is coherent with the general thrust of the Prague school model, but it may be more specifically in line with the suggestions of Luis Prieto (1964, 1975a, 1975b), although neither the Prague School, nor Prieto had to take into account the complications which we have just envisaged. Another complication is that there are cases which, on the face of it, may seem to be intermediate between acts realized with a purpose, and those being purposeless. A more proper description of this case, however, is that there are acts

depending on indirect purposes: thus, for instance, if a camera is rigged up at the finishing line of a horse race, in such a way that the first horse crossing the line will trigger off the capture of the photo, then there is a sense in which the photo is automatically produced, as Jean-Marie Schaeffer (1987) claims, but a more correct description would be to say that a whole array of purposes have gone into setting up the camera in such a way that a picture is taken of the horses crossing the finishing line (See Sonesson 1999a; Mendoza-Collazos and Sonesson 2021). This is possible because of the continuous sedimentation of preceding acts (More will be said about sedimentation, and its relation to extended mind, in section 2.5 below).

2.4.4 Orientation to the Addresser – or to the Addressee

It is, I think, an important modification brought to the phenomenological model employed, most directly adopted from Roman Ingarden (1965), when Jan Mukařovský (1974) and his followers in the Prague School of semiotics set out to define the act of meaning from the point of view of the addressee, not from that of the addresser, similar in that respect to the now well-established pragmatics paradigm. Such an approach makes it understandable that traces left by an animal on the ground, or clouds harbouring rain, can be signs in equal measure to words and pictures (See Sonesson 2012 and 2.2.4 above). According to the Prague school model, all interpretation also takes place in accordance with a pool of knowledge, more or less shared between the addresser and the addressee, which has two main incarnations: the set of exemplary works of art and the canon, in the sense of the rules for how art works are to be made. Again, this double aspect of the pool of knowledge may be generalized from the special case of art to any artefact offered up for communication. On the one hand, there are certain exemplary artefacts, and, on the other hand, there are the schemes of interpretation. As we will see, the Tartu School contributed to this idea of the partly overlapping pool of knowledge presupposed by any act of communication when characterizing the difference between sender- and receiver-culture, which may be interpreted as different ways of focusing on the act of communication.

In order to concretize this idea of a pool of knowledge, we may think of it as made up of schemes of interpretation. The notion of scheme has a history in phenomenology, particularly that of Alfred Schütz (1974), as well as in cognitive psychology, from the original work on memory by Frederick Bartlett and the genetic psychology of Jean Piaget to the more recent contributions to cognitive science, where they are sometimes known as scripts, by the likes of David Rumelhart and Roger Schank. Summarizing this long and variegated tradition, Sonesson (1988: 17) describes a scheme as being ”an overarching structure endowed with a particular meaning (more or less readily expressible as a label), which serves to bracket a set of, in other

respects independent, units of meaning, and to relate the members of the set to each other". Bartlett talked mainly about memory schemes, and Schank notably mentions the restaurant script. The first is a scheme for mental operations, the second a scheme mainly for behaviour. Different cultures may have different memory schemes, which means, e.g. in the case experimentally studied by Bartlett, that a story coming from one culture is retold from memory by members of another culture using schemes prevailing in their culture. The restaurant scheme (or script) entails knowing more or less what you are expected to do while you are in a restaurant, which may also, no doubt, be different from one culture to another. More precisely, Schütz used the term "scheme of interpretation", and he claimed that it was historically constituted out of the sedimentation of earlier acts before being applied to the current act (See further section 2.5.1 and Figure 2.19). Although Schütz doesn't say so, we can now add that such a process of sedimentation may be genetic or generative (see 1.2.5).

According to an idea, suggested by Lotman (1976) as well as by Abraham Moles (1981), the addresser and addressee of any situation of communication start out with "codes" — or, as I would prefer to say, schemes of interpretation —, which overlap only in part, struggling to homogenize the system of interpretation as the communication proceeds. We can extend this idea by referring to the Tartu school conception that cultures may be sender-oriented and receiver-oriented (Lotman et al. 1975), transferring these properties to situations of communication. The communicative act may then be said to be sender-oriented or addresser-oriented, to the extent that it is considered to be the task of the receiver or addressee to recover that part of the system of interpretation which is not shared between the participants. It will be receiver-oriented, or addressee-oriented, to the extent that the task of recovering knowledge not held in common is assigned to the sender or addresser. In other words, a situation of communication is addresser-oriented when it is the addressee that has to adapt to the interpretative resources at the disposal of the addresser, and the situation of communication is addressee-oriented when it is the addresser that has to adapt to the interpretative resources at the disposal of the addressee.

Art, as conceived under the regime of Modernism, has been characteristically addresser-oriented; mass media, in the entrenched sense of the term (which is not really applicable to all modern media), have been noticeably addressee-oriented. A dialogue takes place when each of the subjects adapts his/her schemes of interpretation somewhat to that of the other; that is, in Piagetian terms, when there is both accommodation and assimilation. This would normally suppose there to be a large share of common ground from the beginning. On the other hand,

when addresser and addressee fail to negotiate the parts of the interpretation system that they do not both possess, the resulting concretization will be a deformation. One or both of the subjects will then assimilate the message without accommodating to it. In this sense, both addresser-orientation and addressee-orientation are deformations; but they are normally deformations that are prescribed by the culture.

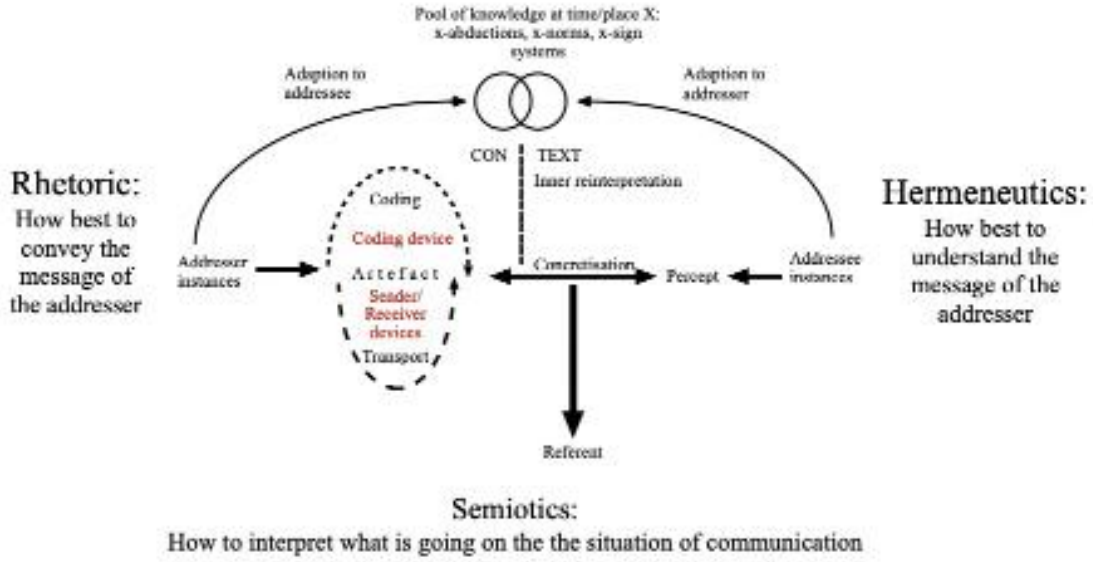

Figure 2.14 Rhetoric, hermeneutic, and semiotic aspect of the situation of communication.

Although they derive from quite a different tradition, or, more exactly, from two different traditions, there are familiar names for these orientations: the adaptation to the addresser, and more generally the whole dimension going from the addressee to the addresser, can be termed *hermeneutic*: it is about the way of understanding the other and/or his works. And the adaptation to the addressee, and the whole dimension going from the addresser to the addressee, can be called *rhetoric*, because it concerns the most efficient manner of getting the message through to the addressee. The overall dimension, which concerns the resources at hand, is properly semiotic (See Figure 2.14).

In the sense of phenomenology, the elementary meaning-giving act, at least in the case of human beings, appears to be the act of attention. Taking my inspiration from Aron Gurwitsch's (1964) ideas about the "theme" at the centre of a "thematic field", and surrounded by "margins", later reconceived by psychologist Sven Arvidson (2006) as different approximation to the "sphere of attention", I have suggested that the gaze may function as an organizing device, transforming continuous reality into something more akin to a proposition (See(Sonesson 2012;

2014b). It is possible to conceive of the orientation to the addresser or the addressee as being part of such an alteration of the act of attention. But attention clearly has a much wider scope, because it also pertains to the content of the semiotic act.

2.4.5 The Sign of the Addresser and the Sign of the Addressee

In the second section, when I defined the sign, I was careful to present it as a hierarchy of intentions, which could at least sometimes be understood as a hierarchy of purposes, without specifying the subject entertaining this set of intentionalities. In an act of communication, there are at least two subjects involved, the addresser and the addressee. In the analytical tradition of philosophy, is has always been taken for granted that the subject involved must be the addresser, which is an idea most clearly spelled out in the work of Paul Grice (Grice 1989). We have seen, on the one hand, that the Tartu School envisages the direction to the addresser and the addressee as being two alternative approaches, both valid in different socio-cultural circumstances, to the act of communication. We have also discovered that, to the Prague School, the preferred perspective was that of the addressee.

Thanks to the work of John Deely (2001, 2010a), we have become aware of the fact that Augustin was the first to conceive a notion of sign, which was a synthesis of the Aristotelian notion, modelled on the linguistic sign, and the notion of sign of the Stoics, according to which the sign consists in an inference from a singular fact observed to a diagnosis, such as, in medicine, from certain symptoms of a malady, or in meteorology, from particular weather phenomena to the future prospect of rain or shine. Something which bears observing here, however, is that while the first case can be envisaged from the point of view of the addresser or the addressee, the second case only acquires an existence from the viewpoint of the addressee – if it makes sense talking of the addressee, when there is nobody around to be responsible for "sending" the message. Of course, maladies do not send messages to be decoded by physicians, nor does the weather purposely inform the meteorologists about the future weather situation. Even animals, which are purposeful beings, do not leave the traces on the ground which allows the hunters to track them down. In fact, this even applies to human beings, who have escaped from some prison colony, who certainly did not leave the traces which discover their path of escape on purpose. And yet, the signs they produce still correspond to the sign definition proposed above, if we allow the subject of the definition to be the addressee, rather than the addresser.

Thus, we have to distinguish the addressee's sign (the Augustinian sign) as opposed to

the addresser's sign (the Aristotelian sign). In fact, the addressee's sign fulfils all the criteria for the sign function, if the subject is the addressee:

> (a) To the hunter observing the traces left by the animal on the ground, the traces are more directly experienced than the animal itself (*first asymmetry* between expression and content)
> (b) But the hunter is more interested in the animal than in the traces it has left behind (*second asymmetry*)
> (c) The hunter knows that the traces are not identical to the animal (*differentiation).*

If these criteria do not apply, there would be no sense for the hunter to follow the traces with the aim of catching the animal; instead, the hunter would be content to observe the traces.

In terms of speech act theory, from Austin to Searle, this means that the sign is defined, not by the purpose of the addresser, but by the "uptake" of the addressee. From the point of view of the traditional notion of communication, even as we have modified it above, this raises the question who the addresser is of the message read by the hunter, the physicians, the meteorologist, and so on. In earlier centuries, the answer would have been God or Nature. A more pertinent interpretation would be that the addresser is in part the community of which the addressee is a member, and in part the addressee him or herself. In other terms, the signified is conveyed thanks to the generative sedimentation of knowledge held within the community comprising the addressee, which is reanimated by the addressee at the particular time and place of his/her observation of the features, which, thanks to this very act of communication, are redeemed as the signifier.

The notion of uptake is in fact very obliquely characterized in the work of Austin (1962: 117, 120, 138), but it clearly has something to do with the meaning-bearing act as the act that it is. This is an issue which becomes acute when we are trying to identify extraterrestial communication coming from the outside, or to fashion a message which should be identified as such for "intelligent beings on other planets" (see Sonesson 2007, 2013c). Later speech act theory, from Grice to Searle, has taken this to mean the understanding of the purpose (or, rather a hierarchy of purposes) entertained by the producer of the act. Our own solution may be closer to the one suggested, no doubt independently, by Luis Prieto.

2.4.6 Signs about Signs or Signhood Conveyed

Above, I suggested that the sign can be minimally defined by the following properties:

> (1) it contains (a least) two parts (expression and content) and is as a whole relatively independent of that for which it stands (the referent);

> (2) these parts are differentiated, from the point of view of the subjects involved in the semiotic process (the addresser and the addressee, or, as we will see, sometimes only the latter), even though the parts may not be objectively differentiated, that is, not separate instances of experience in the common sense Lifeworld (except as signs forming part of that Lifeworld);
> (3) there is a double asymmetry between the two parts, because one part, expression, is more directly experienced than the other;
> (4) and because the other part, content, is more in focus than the other; and
> (5) the sign itself is subjectively differentiated from the referent, and the referent is more indirectly known than any part of the sign.

However, it may be argued, both from the point of view of speech act theory, and from that of Prieto, that this definition is incomplete, because for something to be a sign, it must be perceived to be a sign.

Consider the following scenario: You have reasons to think that nobody has been at this place before, or at least not for an appreciable amount of time, but then you encounter some curiously regular and systematic marks on the terrain. What happens then can be explained in two ways. For some reason, quite contrary to your earlier presuppositions of this being a desolate place, you decide to assign a purpose to these markings, as well as the purpose that these markings should be conceived to have a purpose, and so on, for as many rounds as you like, and then you suddenly discover that the marks are letters of an alphabet, which, taken together, form a message which can be understood to be constituted of words in a language, which together form a sentence which you can understand. Alternatively, you start from the observation that the markings resemble letters, that they can be combined to form known words, which in turn build of interpretable sentences, and since you are familiar from your life in less desolate places with these kinds of markings, you conclude that they have been made on purpose, including the purpose that the first purpose should be recognized.[23]

Speech act philosophy, taking its origin in the work of Grice (1989) and Searle (1969), would defend some version of the first alternative. In numerous papers, the first of which is Sonesson (1981), I have defended the second alternative. I persist in thinking that it is the only plausible one. Indeed, I think it can be shown that a lot of non-linguistic cases of communication anecdotally suggested by Grice, Clark, and Sperber, are really as symbolic, at least in the sense of being based on habits, custom or other regularities, as the linguistic examples (See Sonesson 1999b; 2018a and Section 2.5 below). This is not to say that, when all normal means of

[23] I have attributed this example to Searle, from Sonesson (1981) onwards, but I have been unable to retrieve it in his works. Nevertheless, I am certain that he would have interpreted this example as described above.

communication are unavailable, other vehicles of communication cannot be invented, as has been shown to be the case in the kind of study for which some scholars have usurped the term of "experimental semiotics" (see Galantucci and Garrod 2010), defined as the study of "novel forms of communication which people develop when they cannot use pre-established communication systems".

Luis Prieto (1964, 1972) has propounded ideas rather similar to those of Grice and Searle, quite independently of the speech act tradition. Prieto (1964): 28ff) claims that each "semic act" involves two messages: there is a "indicative notification", corresponding to the communicative intention, and a "significative notification", corresponding to the informative intention. It will be noted that the terminology of intention/purpose is not used by Prieto; nevertheless, he described the indicative notification as the addresser having the intention – or, more literally, being resolved – to convey a message to the addressee ("E se propose de transmettre un message"). The importance difference, however, is that Prieto (1964: 29) claims that the indicative notification is conveyed by the very fact of the sign ("signal") having been produced. It should be noted, nonetheless, that, unlike Grice and his followers, Prieto is merely concerned with what we would call signs. To be sure, Prieto never defines the sign, in the way we have done above, but he always uses examples, such as language, traffic signs, maritime signal system involving flags, etc., which clearly are signs in our sense.

Without entering at present into any other details of Prieto's analysis (see further Sonesson (2012), I have to admit, at this point, that Prieto, like Grice and Searle, clearly thinks that the secondary message, which announces the message status of the original message, is part and parcel exclusively of what Grice would have called "non-natural meaning", that is, meaning conveyed by language and perhaps some other resources, but certainly not by medical symptoms, meteorological facts, animal traces, and the like. Here I beg to differ. Just as we recognize that writing, because it can be identified as writing, is the result of some person having the purpose to convey some message to us, animal tracks, because they can be determined to be animal tracks, inform us about some animal being around, although this recognition does not justify us is thinking that the animal in question had any purpose in leaving those tracks. Indeed, if there is some basis for suspecting that the tracks were made on purpose, we would have reason to doubt that they were animal tracks, given the way we take for granted that such tracks are produced. In both cases, nevertheless, we are involved with pattern matching, i.e. of fitting a token to a type. It just so happens that the types to which we assign these different classes of tokens justify different conclusions about their history of production.

This argument requires us to take the point of view of the addressee, which happens to be the perspective of the Prague School of semiotics, which is a standpoint for which I have argued elsewhere (Sonesson 1999). The sign character of the sign is conveyed to the addressee, either (a) because it corresponds to a scheme recognized in the culture as being an instance of a sign; or (b) because some other sign or vehicle of meaning conveys the information that it is a sign. As we will see in the next chapters (as well as in Sonesson 2018b; 2018c) this means that scarecrows, animal mimicry, camouflage, and many other kinds of fakes are the obverse of signs: while the sign must be experienced as a sign to be grasped, the fake can only work as such to the extent that it is not seen to be what it is.

2.4.7 From Astrobiology to Prehistoric Archaeology

An increasingly popular domain of study, called astrobiology, is concerned to find life, and more ambitiously, intelligent life, on other planets, or, more plausibly, in other solar systems or galaxies. In parallel to the ventures to discover the possible presence, now or in the past, of life in its most primitive form, so far only on more or less close planets, using robot vehicles brought there by means of spacecrafts, there have been numerous endeavours to establish contact with life forms more similar to human beings, wherever they are situated in the universe, not only using telescopes for listening to, and trying to interpret, sounds emanating from outer space, but also endowing several NASA space missions with messages from earth which should supposedly be interpretable by any beings having reached our "level of development" (whatever that means) or having gone beyond that, anywhere in the universe. Since intelligent communication is supposed, as a matter of course, to be communication between natural scientists, these messages were largely formulated in terms of mathematical formulas, accepted in present-day physics. This, in itself, is highly problematic, since, as we have seen (in sections 1.2.2 and 1.2.5), there is a wide gap between the physics of the Lifeworld, and that of the natural sciences, which may well also obtain on other conceivable planets.

Reflecting on such planetary messages, Douglas Vakoch (1999) rightly diagnosed what he terms "the incommensurability problem", which may be paraphrased as follows: the models constructed by scientists on Earth vary considerably, in part because of their different social and historical backgrounds; so, it would be surprising if such variability were not augmented by the scientists having come from different planets, in which case biology may also be different (See Figure 2.15). This issue not only is relevant to scientific models but applies to the transmission of any kind of messages. In fact, as I have pointed out, once culture is taken into account, let alone biology, it even seems doubtful that line drawings of human beings, or even

diagrams showing the position of the earth in our solar system, as epitomized on the Pioneer plaque, can have any meaning for beings as brainy, or more so, than human beings living in some other planet. The idea is that, if these extraterrestrial beings are intelligent, they will be familiar with the same mathematics we are, and they will know the same chemistry. But even if this is true, it does not follow that they will represent them in the same way. That is, even if we suppose that they will recognize the same facts, and/or accept the same mathematical system, as we do, there is no obvious reason for them using the same expressions to convey this content (See Sonesson 2013c).

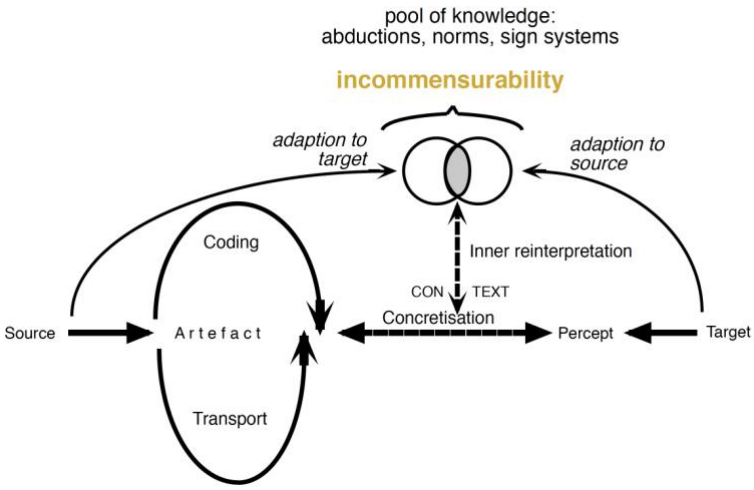

Figure 2.15 The place of incommensurability in the communication model.

Still, the primary problem, in such a situation, in not to transmit the specific content of the message, but to convey the fact that the thing manifested is a message. In a situation of communication, the first problem is not to find out what the message means: it is to realize that there is a message. That is, it involves the recognition of the message as such – as a message, rather than a message about something in particular. Such recognition requires us to share some common presumptions about the shape of possible messages.

Although Vakoch (1999; 2001; 2003) does not pinpoint this specific issue, he quotes some historical examples which have been a bearing on it. Thus, in the 1820s, a mathematician suggested messages aimed at extra-terrestrial civilisations could be formed by clearing massive stretches of Siberian Forest to produce geometrical figures; while others hoped to obtain this result by digging geometrically arranged channels in the Sahara to be filled with kerosene and set aflame during the night. More ingenious ways of constructing messages were invented by Charles Cros in 1869, by the Niemans in 1920, and by Drake in the 1960s. Cros suggested that several series of numbers should be sent out into space, each one having the same final sum.

When the numbers were translated into strings of beads of two different colours and these strings were aligned one over the other, a figure would appear. According to the Niemans' proposal, dots and dashes would be used instead – again corresponding to beads of different colours, with the dots and dashes of each string making up the same sum. Drake's proposal is of the same general kind but more complex: the message sent consists of 551 bits of information, the only factors of which are 19 and 29. When these numbers are taken to be the length and width of the message, the result is a pixelated pattern, which could be interpreted to be a stocky biped placed beside the star and nine planets of our solar system, along with an oxygen and a carbon atom, with their electrons. Thus, in spite of the mathematical sophistication, it seems that the end result in not very different from the better-known Pioneer plaque.

In the end, what is needed are criteria for a shape being a message. One such criterion is no doubt ruleboundedness: regularity, repetition, etc.: that is, symbolicity in the Peircean sense. Simple examples are the cleared stretches of Siberian Forest producing geometrical figures and the geometrically arranged channels in the Sahara lighted with kerosene. This is also the case with more complex proposals for extra-terrestrial messages – e.g., Cros' and the Niemans' schemes, as well as Drake's later proposal – in the first case, the same number for each line; in the second, "551 = 19 x 29" – though the same clue has to do service a second time as a signifier of "mathematicalness". Another such criterion is similarity: that is, iconicity (but this may lead to projection, as in Hoagland's monkey face and van Däniken's wrist watches and helmets). Indexicality, on the other hand, as found e.g. in traces, could easily suggest no intention to communicate: that is, messages involuntarily produced.

In the end, the problem of understanding messages from one galaxy to another may not be, in principle, very different from interpreting messages from the past, discovered by archaeological excavation, which could have been intended as messages, but addressed to contemporaries, or, even to the future, in which case the time span could not be anticipated at the time of creation. The issue could easily be illustrated by the many messages chiselled into rocks by different Mesopotamian civilisations, which all take for granted, even when spelling out the message in different languages that any future culture would be able to make sense of cuneiform writing. Even though European culture was accustomed to writing, it took a long time before representatives of that culture identified cuneiform as a kind of writing, and even longer before someone made sense of it.

One may think that identifying depictions through the ages is an easier task. In reality, it

may be even more problematic. A case in point is the so-called Berekhat Ram figure (250-280 000 BP; Fig. 2.16), which, if it is not the likeness of a woman, as has been claimed with scanty justification by Alexander Marshack, could nevertheless be the result of abrasion produced by regular movements indicating the intervention of a human agent (that is, "anthropogenic" movements), as argued by Francesco d'Errico and April Nowell (2000). What they latter authors believe they have proved, therefore, is that the modifications of the stone are not accidental, such as produced by the waves or by some other mechanical force, although the purpose may not have been to create the likeness of a woman. If they are right, this suggests that the first organism-independent records produced by human beings are indexical, rather than iconic, in character. If they are wrong, and the marks were produced by natural events, the records would still be indexical, but they will then only be signs from the addressee's point of view. And even if the marks on the stone are indeed "anthropogenic", they do not necessarily have to be produced with the intention of conveying a message, but may be failed attempts to create some kind of tool. In the latter case, again, they are only signs for the addressee – in this case the addressee being the archaeologist.

Fig. 2.16 The Berekhat Ram figure

Even granted that, however, these proposals beg the question: why would these hypothetical extraterrestrial scientists believe in the first place that these are messages – which is the primary requisite for setting out to reconstruct them. The only thing that may make such a scenario even remotely plausible is if ordinary perception is already a construction, as the constructionists maintain. But there is no reason to think so. Even if the Martians or inhabitants of the Moon could see these shapes and recognize them for what we think they are, they would only learn anything about us to the extent that they understood that these are messages send by us – and, even more fundamentally, messages, period.

2.4.8 Deeper into the Phenomenology of Communication

We have seen that the Prague Model, which has been an important incitement for our discussion so far, is already based on phenomenological findings. For our purpose, nonetheless, we will have to go deeper into the phenomenology of communication, starting with the fact that communication is an act or, more precisely, at least two acts, that of the addresser and that of the addressee. Husserl has had a lot to say about the nature of the act, but we will focus on its temporal character. From this perspective, as we will see, communication always involves at least two instances situated at more or less different points of time consciousness – and usually (if we except the case of auto-communication dear to Vygotsky and Lotman) lodged in different streams of consciousness, in terms of mineness.

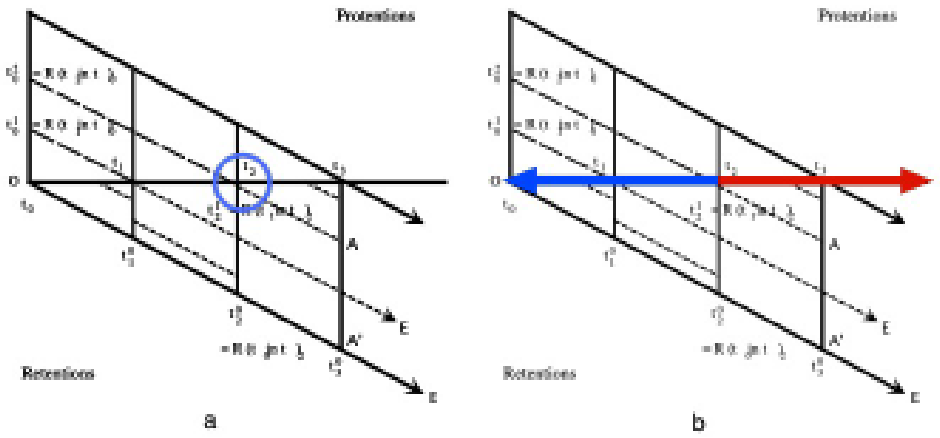

Figure 2.17. The temporal consciousness according to Husserl (1966), extended in both temporal directions by Sonesson (Sonesson 1999b): a) Retentions and protensions; b) acts of anticipation and remembering.

We owe to William James (1978: 179-182) the notion of a "stream of consciousness", or, as he also says, "of thought", in which the "specious present" is surrounded by "fringes" extending both to the past and the future. As Aron Gurwitsch (1957, 1964) has shown, James' idea of the stream of consciousness is very much the same as Husserl's (Husserl 1966) conception of time consciousness, each of them insisting (here in James's words) that it consists of "time-parts /---/melt/ing/ into each other as dissolving views, and no two of them feel the object just alike, but each feels the total object in a unitary undivided way" (James 1978: 279). Husserl, however, would seem to be more precise in his description, because he specifies that each present moment already includes references to the past (retentions), which comprehends

references to even earlier moments, and so on (retentions of retentions, etc.), and references to the future (protentions), enclosing references to even later moments, and so on (protentions of protentions, etc. Cf. Figure 2.17). This means that each retention flows into another, and so do the protentions, and there will be retentions of protensions and protentions of retention in addition. Retentions and protentions may already give rise to a kind of accumulation of meaning, in Lotman's sense, or more specifically, of sedimentation of meaning, as Husserl (1939) understood the latter term: as the layering of meaning over meaning in time.

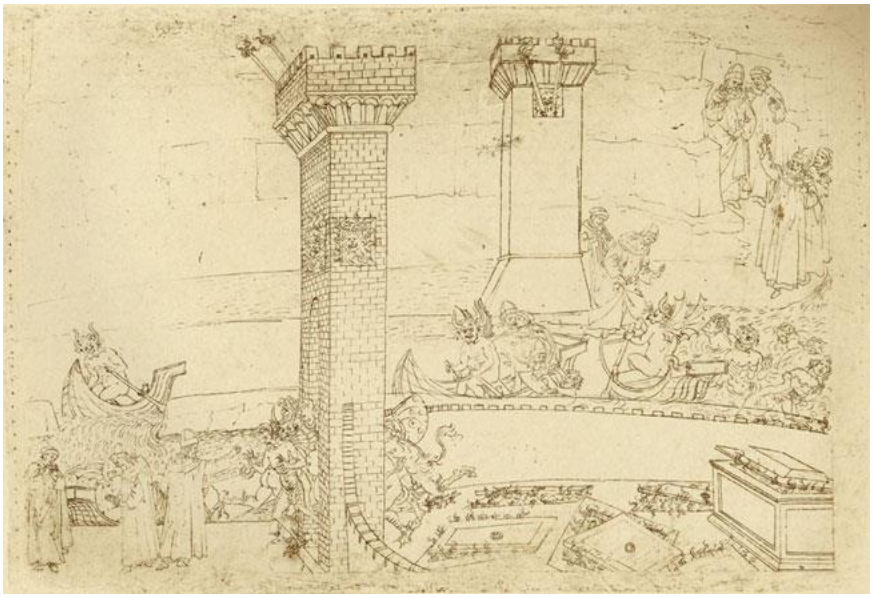

Figure 2.18. Plate VIII of Sandro Botticelli's illustration to Dante's *Inferno*, which contains retentions (the boat trip over the border river in the middle right) and protentions (the burning graves of the heretics below right) of the event illustrated in Dante's corresponding *Canto*, which describes the arrival at Dis city.

Thus, retentions and protentions are clearly distinct from the acts of remembrance and anticipation, which are active events in their own right. As Husserl (1966) insists, protentions and retentions are parts of acts, and should not be confused with the active acts of remembering and anticipation. It therefore would seem that it is not enough (but certainly necessary) to have a stream of consciousness, to be able to engage in time travelling. It is interesting to note, in this context, that Sandro Botticelli, whom we know as one of the foremost Renaissance painters employing central perspective focused on single scenes, returned to the Mediaeval practice of showing different stations of an event in the same picture, when illustrating Dante's *Divina Commedia*. He clearly did so with a very specific purpose in mind, because each one of his illustrations shows what happened shortly before and shortly after the scene described in Dante's *Canto*, each illustration thus overlapping from the point of view of content with the

antecedent and the subsequent ones (as observed by Schulze Altcappenberg 2000: 31f). In order to realize such illustrations, Botticelli, just as Dante, clearly had need of accomplishing the specific acts of remembrance and anticipation, but as the scene is experienced by the protagonists, Dante and Virgil, what is illustrated are the pretentions and retentions of their adventure (See Figure 2.18).

According to Donald (1991: 149), apes live entirely within the bounds of *episodic* memory, which means that "their lives are entirely in the present, as a series of concrete episodes, and the highest element in their system of memory representation seems to be at the level of event representation." To live entirely in the present may seem a simple condition, but if it implies awareness of the insertion of the present within the past and the future, it is already a complex capacity. Indeed, it would require what Husserl calls retentions (of the past) and protentions (of the future). This is very different from living in the present, without opposing it to the past and the future, as we would expect to be the case with Uexküll's tick. Donald is no doubt aware of this, since he attributes his episodic memory specifically to apes and human predecessors. But one would then expect there to be also a pre-episodic stage. I will argue that to live in the present *knowing it to be the present* is to live in the stream of consciousness with its retentions and protentions; but to live in the present without being able to appreciate its difference to the future or the past is an even simpler condition which seems to characterize, among many other animals, also the tick. In this sense, there seems to be a kind of pre-episodic memory, to the extent that we would like to qualify this is a memory at all.

Although we can never know what it feels like to be a tick, there does not seem to be any reason to postulate anything similar to the stream of consciousness in its experience. It was pointed out above (in sections 2.1.5 and 2.2.5), that the three acts of the tick must be accomplished in a certain order. Thus, at some level (not properly described as consciousness), the *Umwelt* of the tick is structured by time. But it is time structured according to McTaggart's B-series, that is, in terms of before and after, not, as in the stream of consciousness, following McTaggart's A-series, or in order words, in terms of past, present and future (Cf. Needham 1975: 1-14; Gell 1992: 149ff). To get from the B-series to the A-series, there must be an insertion of an ego, for which there is a lapse of time before the present as well as after it. Nothing like that would seem to be necessary for the tick to function as such, in spite of the putative subjectivity of the *Umwelt*. The tick does not need to remember that it has let itself drop from the bush when it starts drinking the blood of its victim.

But there are, of course, many creatures in the world more similar to human beings than

to ticks. Indeed, earthworms, as Darwin showed in a little-known publication (quoted by Hurford 2007: 37), carry different kinds of objects in different ways, which means, at least according to Darwin, that they are aware of many properties of the objects and adapt to them; this then puts them well beyond the feature detection of the tick. Whether earthworms also have a more advanced relation to time is, as far as I am aware, unknown. In a famous study, however, Clayton and Dickinson (1998) showed that scrub jays were capable of what Endel Tulving (1983) calls "time travel", because they remember where and when they hoarded food, and also the nature of the food left in different caches. This seems to suggest that scrub jays do not only entertain some kind of a stream of consciousness, but they are capable of accomplishing the active acts of remembrance and possibly also anticipation. There seems to be no denying that this is a kind of time travel, although it so far seems to be limited to a domain of particular interest to any animal, food resources. It doesn't follow, as Tulving seem to take for granted, that scrub jaws also possess what he calls "autonoetic consciousness" which is supposed to accompany the act of remembering, thus enabling the individual to be aware of his/her self in subjective time (See LeDoux 2019 : 294ff). Autonoetic consciousness would seem to be a kind of thematic consciousness, in the sense of phenomenology (see Gurwitsch 1957), and thus cannot be present at the episodic level, in Donald's sense, which would rather correspond to the "stream of consciousness".

It comes no doubt as less of a surprise that chimpanzees have been shown to be able to amass stones for using next day in order to throw them at the tourists coming to look at them at the zoo, and that both chimpanzees and orang-utans are capable of picking out the right tool beforehand for a task they know that they will be called on to accomplish later (Osvath 2009; Osvath and Osvath 2008; Osvath and Persson 2013; cf. Waal 2013). These are certainly active acts of anticipation, which would seem to also involve some acts of remembrance, and they are not as directly (though in the second case they may be indirectly so) geared to the procurement of food as in the case of the scrub jays. Thus, time travel, in Tulving's sense, seems to be present and going well beyond the experience of the stream of consciousness. Experimental results are, of course, only valid as long as they have not been disproved, and there clearly are many other researchers intent on claiming this ability only for human beings (See Osvath and Persson 2013). Again, whatever Tulving maintains, it doesn't follow that chimpanzees possess what he terms "autonoetic consciousness".

In a study which is a least as famous a landmark study in recent animal psychology as the one of scrub jays Cheney and Seyfarth (1990) showed that vervet monkey used different alarm

calls to signal the presence of different predators, which also required a different flight behaviour: bark for leopards, cough for eagles, and chatter for snakes. Whether this means that vervet monkeys are capable of using signs is a moot question, which is not our present concern. In relation to the temporality of the acts involved, however, it is interesting that Zuberbühler (et al. 1999), who, starting out from the observations of Cheney & Seyfarth studied a similar alarm call system in Diana monkeys, were able to demonstrate that the monkeys were more upset (giving more repeat calls) when, five minutes after hearing an eagle alarm call, they heard the growl of a leopard instead of the shriek of the eagle (Cf. Hurford 2007). This shows that, in some sense, the monkeys retained the memory of the meaning of the alarm call they had heard for at least five minutes. That is, in our terms, they still experienced the retentions of numerous anterior retentions of the alarm call. This is no evidence for time travel, however. Rather, it would seem to indicate that Diana monkeys have some kind of stream of consciousness, in which retentions upon retentions go on for at least five minutes. It is quite possible, of course, that another study will present evidence for Diana monkeys being capable of time travel. Nevertheless, it seems clear that we should have to differentiate the kind of memory testified to by the stream of consciousness, and that which allows for time travel. Let's call the first kind *running* memory, and retain the term episodic memory for the kind involving time travel or, in our terms, active acts of remembrance and anticipation.

Human beings, in any case, live within a genetic-generative horizon, in which past, present, and future are more or less consciously construed as part of a tradition or a life-story. The flux and reflux of retentions and protentions may be at the origin of memory records, and so may more obviously be the specific acts of anticipation and remembrance. It is only because of the workings of the stream of consciousness that there can be such a thing as sedimentation, which forms the basis of extended mind.

2.4.9 Summary

We started out this section with a review of Lévi-Strauss' idea of a science of communication, in the sense of the circulation of artefacts, in his view a science even wider than semiotics. In the second subsection, we narrowed down our study to the term "communication", which we claimed to involve at least three different notions, the historical manifestations of which have sometimes overlapped, in spite of the notions being quite distinct. The Shannon & Weaver model, which has been widely used in semiotics, and in many other human and social sciences, is seriously misleading, because it poses an analogy between the conveyance of information and the translocation of objects in space, and also identifies the former with the coding of

information. A minimal definition of communication, in the core sense of relevance to semiotics, consists of a subject creating an artefact, and of offering it to another subject as a task of interpretation.

If it is true, as this definition suggests, that the addressee is a least as active as the addresser in making sense of an act of communication, the distinction between sender- and receiver-cultures, as characterized by the Tartu School, becomes newly relevant, and can be applied to each particular act of communication. We then took this idea further, suggesting that, if the sign was defined from the point of view of the addressee, rather than the addresser, we could recuperate the full Augustinian sign, as discussed in the second section, including the Stoic notion of sign as inference. This allowed us to revisit the idea, familiar from speech act theory, but also formulated by Prieto, according to which a sign can only be interpreted once we have recognized it to be a sign. Without denying that there will be cases in which a meta-sign, or a recognition of a hierarchy of purposes, is required, we suggested that, in most cases, the recognition of the sign as sign is a result of the kind of pattern perception which is part and parcel of *Lifeworld* experience. We also suggested that the reason why terrestrial attempts to initiative extra-terrestrial communication have failed may have something to do with all socio-cultural *Lifeworld*s in our henceforth experience being human *Lifeworld*s. Finally, we delved deeper into the phenomenology of the communicative act, which, whatever else it is, is an instance of the act of consciousness, which is what allows it to form the foundation of sedimentations, and, thus, of extended mind.

2.5. From Sedimentation to Extended Mind

Sedimentation, we have suggested above (in section 2.4.3) is a result of any act of communication. Using a different terminology than Husserl, and having no doubt a somewhat different idea about the process, Yuri Lotman (1976) observed that the accumulation of information as well as of merchandise (for which read: material objects) precede their interchange and is a more elementary and more fundamental characteristic of a culture than communication. Material objects and information are similar to each other, in Lotman's view, and differ from other phenomena in two ways: they can be accumulated, whereas for example, sleep and breathing cannot, and they are not absorbed completely into the organism, because, unlike food, they remain separate objects after reception. At the time, Lotman may well have wanted to play on the ambiguity of the term information in the colloquial sense, and in the sense of the mathematical theory of communication. Here we will take it exclusively in the first sense,

thus identifying it with meaning, knowledge, and even, in its aspect of being accumulated, with memory – and with what Husserl calls sedimentation (See further Sonesson 1999b; 2010b).

2.5.1 The Accumulation of Meaning as Sedimentation

Any present act of experiencing an object or state of affairs is embedded in patterns of understanding which modify these experiences, resulting from a process that Husserl (1954) calls sedimentation, a term made more famous by Maurice Merleau-Ponty (1945). This is the process in which previous experiences come to shape and condition more recent ones. In this context, sedimentation is, of course, a metaphor, like the conduit metaphor discussed above (in section 2.3.1), but it is hopefully less misleading. To grasp the nature of sedimentation, and thus of the different kinds of memory, we will have to expand on the following judicious observation by Merlin Donald (1998): 11): "In humans there is a collective component to cognition that cannot be contained entirely within the individual brain. It is the accumulated product of individually acquired knowledge that has initially been expressed in a form comprehensible to other members of a society, tested in the public domain, filtered, and transmitted across generations." Husserl's idea (not referred to by Donald) is that such an accumulated product of experience can be reanimated in the phenomenological process, thus illuminating its validity, in the sense of its foundation.

A phenomenology geared to sedimentations should "inquire after how historical and intersubjective structures themselves become meaningful at all, how these structures are and can be generated" (Anthony Steinbock 2003: 300). In posthumous texts, Husserl distinguished between the *genetic* and *generative* dimensions of experience (Husserl 1973b; Welton 2000); Steinbock 1995). Genetic phenomenology attempts to explore the origin and history of the sedimentation process in any given set of experiences. Every object in our experience has a genetic dimension: it results from the layering, or sedimentation, of the different acts that connect it with its origin in our personal experience, which gives it its validity. Thus, genetic phenomenology studies the genesis of meanings of things within one's own stream of consciousness. The genetic method enables us to plunge into layers of human existence that are pre-reflective, passive and anonymous, though nonetheless active. The term genetic is meant to evoke the idea of the life of an individual from the cradle to the grave.

There is also the further dimension of generativity, which pertains to all objects, and which results from the layering, or sedimentation, of the different acts in which they have become known, which may be acts of perception, memory, anticipation, imagination, and so

on. Generative phenomenology studies how meaning, as found in our experience, is generated in historical processes of collective experience over time. The term generativity is meant to evoke the idea of generations following each other: "In distinction to genetic analysis, which is restricted to the becoming of individual subjectivity, a synchronic field of contemporary individuals, and intersubjectivity founded in an egology, generative phenomenology treats phenomena that are geo-historical, cultural, intersubjective, and normative." (Steinbock 2003: 292).

In his seminal paper on *The Origin of Geometry*, Husserl (1954: 378 ff.) elucidates the way in which geometry derives from the praxis of land surveying. Although, in this paper, Husserl did not make this distinction, such an origin would only be genetic for people living at the time, but it must be considered the result of generative sedimentation for all subsequent generations. Taking all this into account, the return to the origin cannot amount to a reduction of geometry to land surveying, in which case non-Euclidean geometry would not only be impossible, but so would all of the "discoveries" of mathematics after the formalization of the practice of land surveying. As Husserl goes on to mention, though he fails to bring it into focus, geometry, as well as any other system of ideal structures, clearly has an existence beyond all the practice which is sedimented into them, because they are already present outside of time and space – or rather, in all times and spaces (after the foundational moment, or more precisely, the sequence of foundational moments; Husserl 1954: 371; see Sonesson 2015).

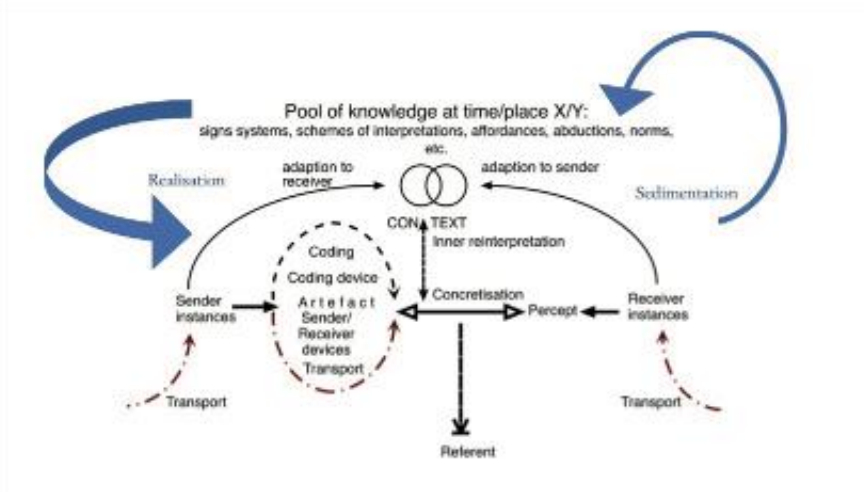

Figure 2.19 The act of communication, as construed in Sonesson 1999, with the addition of the process of sedimentation, which is the accumulated memory of historicized acts, and the process of realization, which recovers the structure of the act from the pool of knowledge which is sedimented.

It is important to note that the approach in terms of geneticity and generativity, unlike that preconized by Lotman, supposes accumulation/sedimentation to be as much a result of communication as vice versa. This does not only apply to semiotic acts, but to all acts

accomplished by situated subjects. In other terms, each act of communication (and of meaning generally) adds to the sedimentation resulting in the pool of knowledge, and each act is also a realization of such a pool of knowledge (see Figure 2.19).

2.5.2 Signs as portable memory

Not only is extended mind a notion which has been addressed within phenomenology. Also, within semiotics proper, the Tartu School has pointed out that the accumulation of information as well as of merchandise precede their interchange and is a more elementary and more fundamental characteristic of a culture than communication. According to Lotman (1976, 1979), material objects and information are similar to each other, and differ from other phenomena, in two ways: they can be accumulated, whereas for example, sleep and breathing cannot be accumulated, and they are not absorbed completely into the organism, unlike food, but they remain separate objects after the reception. Here Lotman seems to treat the sign as pure information, perhaps because he thinks mainly about verbal texts, where the material base is extremely changeable. More obviously, a picture is as much a material object as information, as much an artefact as an object of perception. This is why we can accumulate pictures in a double sense: as material things, in the safe-deposit box of a bank, or like experiences in the mind. In both senses they maintain a certain distance with respect to the body.

Some of the characteristics that Lotman attributes to information bring to memory those mentioned by Masuda (1980), one of the first propagandists of information society: in his view, information is not consumable, no matter how much it is used, but it can be transferred to a new place without disappearing from the point of origin; it is not accumulated if it is not used as is the case of material goods but, on the contrary, by being used increasingly and being integrated with other information. Against Masuda as much as against Lotman it is possible to object that even the most elusive kind of information must be incarnated in some type of material substance, quite apart from the fact that all access to the information in question depends on some material apparatuses called computers, hard disks, and compact disc player. In the world of ideas, the content of a book exists indefinitely; but in fact, it evaporates with the last paper copy which moulders away or the last person that dies or forgets the content. It could be argued, however, that while the first case is feasible in the case of books (and of language systems which disappear when the last speaker dies – or, rather, when the last two speakers do), only the second case applies to pictures. Pictures must really be conserved in a material form

independent of the human body.[24] Today, that material form may very well be a computer record. But also computerized information is dependent on the wear of the units of storage such as compact discs and hard disks.

In this sense all information goods are temporarily limited – even though some limitations can be of relatively long duration. Roland Posner (1989) distinguishes two types of artefacts: the transitory ones, epitomized, in his example, by the sound of a woman's high-heeled shoes against the pavement; and enduring ones, e.g., again using Posner's example, as the prints that the woman's shoes may leave in clay, in particular if the latter is subsequently dried. The cast of prints left by the woman's high heels is, of course, an organism-independent record, just as the marks of a Roman soldier's sandals found in prehistoric caves, and the handprints on cave walls (section 2.4.7 and Fig. 9).

The transitory artefacts, in this sense, also have a material aspect, just as the lasting ones; they only have the particularity of developing in time, which is why they cannot be accumulated without first being converted.[25] From our point of view, Posner's transient artefacts would seem to be simple instances of temporal memory, complete with retentions and protentions. Nonetheless, the sound sequence produced by high heels against the pavement, and other transitory artefacts, can of course be sedimented (as opposed to being converted into an enduring artefact, which is the case of the recorded sound), in the form of the (typical) leg movements producing this sound, that is, as a mimic record, accumulated in the body, but still distinct from it, since the movements can be learnt and imitated, and even intentionally produced as signs of (traditional) femininity. Whether or not the sequence of sounds produced by a woman's high-heeled shoes shocking against the pavement was a temporal object in its own right in Posner's experience, the protracted discussion of the status of melodies, at the origin of *Gestaltpsychologie* (See Weinhandl 1960; Sonesson 1989: 71, 82 ff.), to which Husserl also contributed, suggest that there must be enduring artefacts intersubjectively available which retain their character of temporal development.

Harold Innes (1950) differentiates all cultures according as they emphasize more

[24] They can, however, be preserved as the capacity for reproducing them, that is, as the sequences of repeatable actions, which is an instance of Donald's mimetic memory.

[25] Normally, it is Posner's transitory artefacts whose development in time causes them to seem somehow "less" material (which is of course nonsense but must be taken seriously in the *Lifeworld*). It is easy to understand that thinkers of the Enlightenment like Diderot and Lessing could conceive of language (which they tended to imagine in its spoken form) as a "more subtle material" than the picture that endures in time (at least until air is let into the prehistoric caverns or car exhaust is allowed to devastate the frescoes of a later time).

enduring storage media which are difficult to transport, such as stone tablets, or media which are less enduring, but easier to transport like the papyrus – in other words, according to the relative accent the cultures put on the aspect of accumulation and transport, in the sense of Lotman. All cases considered by Innes are, of course, enduring artefacts: it is only that their capacities for accumulation and communication, respectively, are more or less emphasised. The distinctions established within cultural history by Innes thus only concern Donald's theoretic stage (See Figure 2.11). Episodic memory is most clearly disembodied. It may refer to a bodily act, such as going in or out of a container-type object (such as, for instance, making love), but it is unable to generalize this movement beyond a particular moment and place, and thus it does not give rise to any kind of independent embodiment. Mimetic memory still accumulates its records sin the own body, but it only becomes such, to the extent that what is recorded in the body also exists elsewhere, in at least one other body, which supposes generalization or, more exactly, *typification*, the creation of a type referring to different tokens instantiated in different bodies. Typification, in this sense, does not require the semiotic function, but is probably a prerequisite for it. Mythic memory (which I would prefer to call linguistic memory or perhaps, as Donald sometimes does, semantic memory) is different again: it has a separate existence, but, like some kind of real-world ectoplasm, it requires the collaborative effort of a least two consciousnesses (which no doubt have to be embodied) for this existence to be sustained. Transitory artefacts, as verbal language or (as Posner would have it) the sound of high-heeled shoes on the pavement, acquire a body only to the extent that a sender and a receiver agree roughly on what they are. Only theoretic memory has a distinct body of its own: it subsists independently of the presence of any embodied consciousness, because it itself embodied. Of course, without anybody around to perceive it, organism-independent records are not of any use. Without any human beings present, they are really worse off than the famous acorn falling from a tree without anybody around to hear its sound.

2.5.3 Sedimentation as Extended Mind

According to Dan Sperber (1996), sedimented meanings (which he terms "public representations") do not have any real existence, because, first, they are only material objects, until they are experienced by psychological subjects, that is, as "mental representations"; and, second, they subsist, and are distributed (and transformed) because they are reproduced as "mental representations": "Public representations are artefacts the function of which is to ensure a similarity between one of their mental causes in the communicator and one of their mental effects in the audience." The first point is true in a way, but the second is not. In the case of

systems (like "langue"), the elements of the system (phonemes, letters, even contours in pictures) must subsist intersubjectively, while their combination may be given in sedimented meanings. This also applies to "parole" (books, for instance, whether written or painted), to the extent that they consist of a certain sequence of elements taken from such systems. Whatever the truth of Sperber's conception, it certainly goes against the grain of (the family of theories of) what in cognitive science is nowadays known as the notion of extended mind.

The notion of extended mind is often presented a being part and parcel of a novel way of conceiving cognition which is termed 4D-cognition, which comprehends the embodied, embedded, extended, and enactive mind. A fifth term, which unfortunately doesn't begin with an "e", is "distributed cognition", first coined by Edwin Hutchins (1995a, 1995b), which have sometimes been taken as the more comprehensive concept, sometimes as synonymous with "extended mind". If we except enaction, all the other notions may be said to be concerned with the locus of cognition and to place it outside of the mind, in the classical sense, often identified with the brain. Here we will not discuss enaction, which (as we saw in Chapter 1, and further in section 2.1) was already clearly delineated by Husserl and Merleau-Ponty. The same is true of embodiment, both as *Körper*, as when we use our fingers to count, as *Leib*, which accounts for the position of the person within the coordinates of space and time. Some scholars working in this tradition, notably Mark Rowlands (2010), have argued that all the 4E-kinds are not necessary and indeed that we have to make a choice between them. Something similar is suggested by Anderson (et al. 2019: 5), when opposing the two ways of conceiving a mathematical calculation using pen and paper:

> For both the embedded and the extended view, what we have here is a brain-body-pen-and-paper system involving a beyond-the-skin element that, perhaps among other things, helps to transform a difficult cognitive problem into a set of simpler ones (e.g. by acting as storage for intermediate calculations). For the embedded theorist, however, even if it is true that the overall mathematical problem could not have been solved, at least by some particular mathematician, without the use of pen and paper, nevertheless the external resource in play retains the status of a non-cognitive aid to some internally located thinking system. By contrast, for the advocate of the extended view, the coupled system of pen-and-paper resources, appropriate bodily manipulations, and in-the-head processing may itself count as a cognitive architecture, even though it is a dynamically assembled (rather than hard-wired) and essentially temporary (rather than persisting) coalition of elements.

This opposition misses what I think is the really important issue here: even if the pen-and-paper-architecture, including the manipulations applied to it, is genuinely cognitive, this can only be the case, to the extent that it is the result generative and/or genetic sedimentations.

As I have observed elsewhere, Husserl's conception of geometry as a system of connected

sedimented acts of land surveying, which can be used (but not validated) in the form of sediments, as well as Lotman's idea of accumulation and Donald's (2010) notion of exogram, are all reminiscent of what has more recently been termed "the extended mind". Yet, some of the ways in which this and similar terms have been used seem to me dubious, not to say paradoxical. Take the case of Otto and Inga, first broached by Andy Clark and David Chalmers (1998). As the story goes, Otto and Inga are both going to a museum. Otto has Alzheimer's disease, which is the reason why he has written down all the directions to the museum in a notebook to serve as his memory. Inga, however, is able to remember the directions using only her (un-extended) mind. The argument is that the only difference existing in these two cases is that Inga's memory is being internally processed by the brain, while Otto's memory is being served by the notebook. In other words, Otto's mind has been extended to include the notebook as the source of his memory. The notebook qualifies as such because it is constantly and immediately accessible to Otto, and it is automatically endorsed by him.

It is not entirely clear whether Clark & Chalmers really want to suggest that, in this way, the (non-extended) mind can be entirely bypassed, but something like this would seem to follow from their principle that what is functionally equivalent to processes in the mind (such as, in this case, memory) is an extension of the mind. In any case, this argument is explicitly made by Daniel Hutto and Erik Myin (2013), in a book with the suggestive title "Radicalizing enactivism: Basic Minds Without Content". Hutto and Myin deny that any "content" (something sometimes also expressed as "any meaning") is needed at all for semiotic and/or mental acts to occur, with the possible (only sometimes mentioned) exception of language. This seems to me an absurd conjecture: without a mind taking into account (though not necessarily reanimating, in Husserl's sense) what has been sedimented, there is nothing there. In other words, if Otto cannot read, which is a semiotic act (that is, an act of meaning or content), he cannot be doing anything at all with the notebook. The notebook is meaningless, if not actualized by a mind, just like writing in some unknown script. And that it is meaningless means that it cannot function in any way equivalent to Inga's memory, without the semiotic acts of reading and, in fact, the antecedent act of fixing the attention. Indeed, as everyone knows who has some real experience of people with dementia, Otto may very well write all the instructions down, but then he will very probably forget to look the information up.

In their more recent book, Hutto and Myin (2017) takes on mind *with* content, but they still restrict the latter to the single case of (verbal) language. There is much to be said about the semiotic inadequacy of such an account, but here we will concentrate just on their critique of

the storage metaphor. Clearly, Lotman's idea of accumulation, as well as Husserl's notion of sedimentation and (perhaps less clearly) Donald's (2010) term "exogram", rely on the storage metaphor, if they are not presented as being storage quite literally. Indeed, all these notions have been forged to explain how meanings may persevere in time and be transferred in space, and how they can be available to more than one subject at a time, that is, in other terms, intersubjectively. It is difficult to see how anything of this can be accomplished without some kind of storage, however metaphorical, being involved. More specifically, without such storage, culture, let alone cultural evolution, appears to be impossible. The reason for Hutto and Myin (2017: 233ff) marking their distances to the storage metaphor seems to be that they want to think of mind as not being simply extended, but continuously so. It is no accident that they refer to Lambros Malafouris (2013: 227ff) who in his discussion of the extended mind argues in meticulous detail for there being no limit between the potter's (un-extended) mind and the potter's wheel. One is inevitably reminded of the fundamental point made by Peirce:

> A psychologist cuts out a lobe of my brain and then, when I find I cannot express myself, he says, "You see your faculty of language was localized in that lobe." No doubt it was; and so, if he had filched my inkstand, I should not have been able to continue my discussion until I had got another. Yea, the very thoughts would not come to me. So, my faculty of discussion is equally localized in my inkstand. (Peirce 1958, §366)

And William James (1978: 291) expressed the same point in a more personalized (and less obviously cognitive) way:

> In its widest possible sense, however, a man's Self is the sum total of all that he can call his, not only his body and his psychic powers, but his clothes and his house, his wife and children, his ancestors and friends, his reputation and works, his lands and horses, and yacht and bank-account. All these things give him the same emotions. If they wax and prosper, he feels triumphant; if they dwindle and die away, he feels cast down, - not necessarily in the same degree for each thing, but in much the same way for all.

Another *locus classicus*, in this context, is, of course, the blind man's cane, which, according to Merleau-Ponty (1945), is experienced as being a part of the blind man's body. Even if we can often experience such an umbilical link between ourselves and the inkstand (or, to modernize the example, the computer), and between ourselves in the guise of a potter and a potter's wheel, the experience of this nexus has to be reconciled with the property of storage, which is necessary for the extended mind to have any function to fulfil, not only in cultural

evolution and history, but also as the intersubjective foundation, and the ongoing source of negotiation, of contemporary social life. Of course, this inkstand, computer, blind man's cane, and potter's wheel, with which I am at this moment so inextricably united, will not endure, but other instances of them will. They perdure as types, but they are materially embodied as particular instances in time and space. The important thing, in any case, is that, *however extended the mind may be, it is necessarily extended from a particular pole,* that of a mind in the literal sense, which is the mind of a human (or at least animate) being.

Nevertheless, all kinds of extended mind cannot in any obvious way be considered as materially instantiated types mapped directly to the corresponding types. Geometry, logic, language, and many other systems clearly make up complex grids, only some of the members of which are materially instantiated, while depending for their meaning on their place in the mesh. Perhaps we should think of sediments not only as having attained different degrees of petrification, but also being able to shift back-and-forth in that extent. This is playing havoc with the sedimentation metaphor, but so does already Husserl's notion of reanimation. Something like this is needed to explain the continuity between the mind of the writer and his ink stand or computer, on the one hand, and the perdurance of the writing systems he uses in history on the other (See the following section).

2.5.4 Two types of types

Before we can delve deeper into the way sedimentation is at the origin of different kinds of extended mine, we have to clarify the notion of type, and notably the way the type relates in different ways to its corresponding exemplars. The difference between type and exemplar is described by Peirce with the terms "type" and "token" (or "replica"). In the previous phrase, for example, the word "and" appears once, considered as a type, but twice considered as a token. The letter "t" is also one type only, at the same time that only in the first sentence of the paragraph there appears eight tokens of it. This reasoning is easily extended to other systems of meaning; a reproduction of Leonard's "Mona Lisa" is of the same type as another reproduction, but they constitute two exemplars or tokens of those which exist. Considered as a totality, this article is a single type, but it will appear in as many tokens as this lecture is downloaded. As a first approximation, it seems that it is a sign the type of which provides for more than one token which may be universally shared, in the sense of Sperber and Masuda, and which may be said to remain at the point of origin while being sent out to circulate.

Yet it is not evident that the relation between type and token is always of the same kind.

It seems reasonable to say that a painting first must be made in one exemplar before existing as a type; the first exemplar serves to establish the type, from which then further exemplars can be derived. Mutatis mutandis, this is also true of a photograph and even of a picture created in Photoshop, even though the process of engendering tokens is much less complex than in the case of paintings. In the same way, the first exemplar of an article must be written by the author, before a type is established, which then plays the part of a guideline for the different exemplars that are later created. In the case of phonemes, words, musical notes and so on, the procedure is different: there is not a first "l" which only then creates the type which is then repeated. It may certainly be possible to determine when a phoneme, or in any case a word, was used for the first time, but normally this is not relevant for the native speaker. And to the extent that it becomes relevant, the typicality has changed its character.

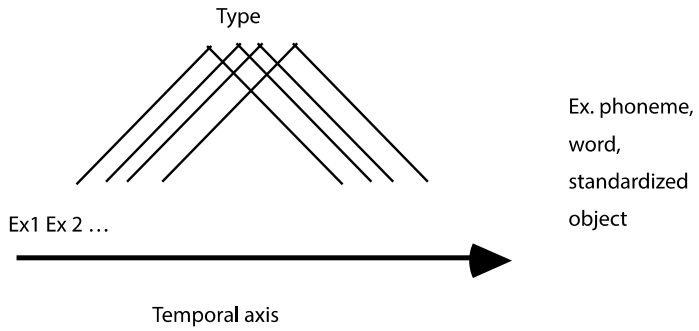

Figure 2.20. The temporally bound type of typicality.

It will be convenient to distinguish between *temporarily bound* and *temporarily free* relations between type and token; in the first case but not in the second, the type is established in time by means of the creation of a first exemplar (See Sonesson 1998). Tokens of temporally free types may be sent off in all directions, but the types are still always available at the place of origin and elsewhere (See Figure 2.20). The case of temporally bound types is more complex (cf. Figure 2.21). Written texts are temporally bound types, but they are entirely made up of temporally free types. The scribbles made by the famous author on the back of his bar bill may remain the only token of its type, if they are not rescued by his editor. But once these notes make it into the printing house, they are made available everywhere, at the bar where they were written as well as at any other place. Until recently, a picture was almost always, from the very beginning, a temporally bound typicality: whether it was a drawing or a photograph, all its elements where temporally bound — although the photograph is more easily made into a first exemplar engendering an indefinite number of tokens. This still applies to many pictures

created on the computer, in spite of the fact that their proliferation into types is made all the easier. Still, a computer picture can also be put together from different items out of clip-art selection, from fragments of scanned images, or even being the product of algebraic, that is, as a combination of temporally free entities. This means that, also in the case of pictorial communication, both the temporally free and the temporally bound types may give rise to an indefinite number of tokens. Thus, also pictures may still be present at the place of origin while reaching other coasts.

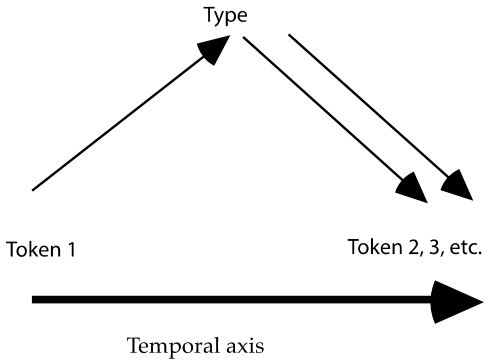

Figure 2.21. The temporally free type of typicality.

The distinction between temporally bound and temporally free types is not identical to the one which Nelson Goodman (1968) makes between *autographic* and *allographical* arts. Among the temporarily bound typicalities previously mentioned, the verbal text is allographic, whereas the visual work of work is traditionally autographic; in other words, the artwork, but not the work of literature, is defined as to its identity as well as to its value within a practice handed down in our society by means of its temporary association to the first exemplar created by a certain individual. This is why we do not have to queue up in front of the Stockholm National Library to read the only exemplar of "Röda Rummet" written by Strindberg, while a similar conduct is expected of us in the case of a work of visual art. The copy of the novel which we may buy at any book shop is a token of the temporally bound typicality produced by Strindberg, and so is the reproduction of Mona Lisa, which we can buy at the Louvre. But our current social practice assigns different values to these two instances of multiple tokens from one type.

To understand the decisive events of the history of the art, we have to take into account the entire hierarchy of values present in our society: the radicalness of the first ready-made that Duchamp exhibited did not consist in treating a temporally free typicality as if it were a temporarily bound one. In fact, the-bottle dryer and the urinal also depend on typicalities which

are temporarily bound. They are founded on some kind of prototype. The difference is to be found in the different values attributed to the first exemplar that creates the type in the production of the object of use and the work of art. By signing the urinal (with a false name, to be sure), Marcel Duchamp did not only transform a temporally bound type with an indefinite number of tokens into a type having only one token, but he also transmuted an allographic entity into an autographic one. And this is where the adventure of Modernist art begins: very soon (thanks to Ulf Linde), Duchamp's urinal becomes a type engendering new tokens. But to exist as art it still needs autography – the signature of the author.

2.5.5 Different Ways of Extending the Mind

As we have seen (in Chapter 1 and 2.3.4), Merlin Donald uses to term "exogram" in a similar way to what others call extension of mind, opposing it to the "engram", which is usually understood as a unit of information imprinted in the brain or other physical tissues of an organism. According to Donald (2010), engrams fix the record by physiological means, while exograms employ an unlimited number of physical media; the former cannot be reformatted, but the latter can. Since they disappear with the death of the subject, engrams are impermanent, while exograms are "quasi-permanent", or at least may exceed the lifespan of individuals. The former also have a limited capacity (allowing for a confined number of chunks), while the latter can be very large. Moreover, engrams are very vulnerable to distortion, which is less true of exograms. These are only some of the distinctions Donald establishes between the two kinds of memory record.

We are not here concerned with the thorny question of where different engrams, as neurological entities, are stored, but with that of their phenomenological location. While episodic memory clearly appears to be lodged in the mind, which may be the closest phenomenological correlate of the brain, mimetic memory, at least in its primary version, rather seems to be installed in different body parts, such as, most notably hands and legs. As for language, in the form of any particular speech act, it no doubt has its abode in the mind, but as a system of resources, it may already be a kind of external memory. The obvious candidates for exogram status are pictures (as understood by Donald) and writing. As for theory, it undoubtedly constitutes an exogram when conveyed by means of writing and/or pictures, but, in another way, it may seem to be more similar to the second manifestation of language, a kind of external meaning which is not housed in any fixed physical substance in any clear-cut way.

As we have suggested, extensions of mind, or exograms, are the result of the

sedimentation of intentional acts, whether they are sedimented by genetic or generative means. The products of such sedimentation clearly are of different natures, also apart from their genetic or generative provenance. Although the observations made by Innes, Lotman, Masuda, and others, recollected above, are suggestive, as are the distinctions made between different states of existence of language in structural linguistics, we are here fundamentally of virgin ground. The following should therefore only be considered a very preliminary approach to the fundamental task of telling apart different kinds of extensions of mind.

Let's start with habits, on the importance of which Peirce has insisted, or *habitus*, as this notion is now more widely known with a Scholastic term also used by Husserl, but made famous by Pierre Bourdieu. Perhaps we should distinguish habitus from mere habits as being a particularly complex and ingrained system of habits, as is suggested by Bourdieu, and/or as a stance taken on the background of passive synthesis according to Husserl (See Moran and Cohen 2012: 141ff). In any case, the phenomenological location of habits, in the sense of skill and gesture, is clearly once's own body, that is, it is part of mimetic memory, as thus still situated at the level of engrams in Donald's sense (See section 2.3.4). They pertain to what Zlatev (2008) has called "bodily mimesis". The case of tool use and tool making is already more intricate, since, at least at the initiation of the period when the skill is learnt, it supposes an interaction with an external object. As suggested by the blind man's cane as described by Merleau-Ponty, as well as by Peirce's inkstand (See 2.5.4), and perhaps even Lambros Malafouris' (2013) potter's wheel, these objects, or, more exactly, their affordances, later on get incorporated into the pattern lodged in the own body.

The case of imitation, also included in the mimetic stage according to Donald, is even more perplexing, because, in the central sense in which it involves the reproduction of the behaviour of another individual, it certainly extends beyond once's own body to that of another. Again, this interaction with the body of another individual is no doubt, in the long run, absorbed into once's own body, in the form of expected affordances. It is difficult, nevertheless, to fix the border between this phenomenon and the instances which first suggested to Hutchins' the notion of distributed cognition (see 2.1.4), the mesh of behaviours occurring on a ship or in a cockpit, which, apart from tool use, involves the interaction between different individuals. It seems to me that Manar Hammad's (et al. 1977) study of the working of the seminar of A.J. Greimas, although using a quite different terminology, can be considered another instance of distributed cognition, where, of course, the characteristic extended table of French seminars (something like a disproportionate table tennis table) has is part to play, but where the cognition

which is going on fundamentally involves the roles distributed to the individuals present. Indeed, even without anything like this forbidding piece of furniture, a similar kind of distributed cognition basically goes on at universities in other countries, and, to some extent, is even realized when, as during the 2020-21 pandemic, seminars had to move online. If we had possessed any notes taken down by a participant observer, we might even find out that the seminars of the Mediaeval Scholastics, even if they were no doubt different in many ways, still had some air of familiarity to us later-day seminar participants. More generally, many of the typical situations, or "frames", in his terminology, studied by Erving Goffman (1963, 1971, 1974), although differently labelled, would seem to epitomize distributed thinking. In phenomenological terms, a lot of the action is based on *habitus*, that is, sedimented acts, but some of these acts have to be reanimated, and new acts may have to be initiated, in the process of distributed cognition.[26] In this perspective, there is no clear limit between Donald's engrams and his exograms.

Before we go on to discuss other extensions of mind, it should be noted that autographic memory is much more than it is made out to be in Table 2.2, because its importance can only be appreciated when all other kinds of sedimentations contributing to it have been accounted for. As Simone de Beauvoir wrote somewhere, to her the most frightening thing about death was that all that she had learnt through-out life would then be lost. It is easy to retort that some of it is preserved in her writings. But this poses the question about the status of autographical memory as a type, of which all publications, and in fact all other manifestations of the life of an individual which have been safeguarded, are tokens. In this respect, autographic memory is exogrammatic, and yet, as Simone de Beauvoir observed, it is an engram to the extent that it is impermanent.

On Donald's mythic level, the distinction between *langue* and *parole* made in Saussurean linguistics is, *mutatis mutandis*, also relevant for other semiotic resources, although rarely in the simple way imagined by French structuralism. It is generally forgotten that Saussure actually added a third term, *la faculté du langage*, though the difference between the latter and *la langue* never becomes quite clear. It is a well-known fact that syntax (and grammar generally) is an aspect of language which remains largely absent from *Cours*, but let us grant, for the moment, that *langage* may comprise a system of rules, including those associated with syntax, and that *langue* would consist of a vocabulary, or, more exactly, a nexus of semantic fields. If

[26] Of course, many of these frames require the use of language: after all, what is a seminar without people talking? But, *as* frames they pertain to a more elementary level of exogrammization.

we generalize this distinction to that between a system of rules and a repertory of signs, it should be clear that, while language requires both *langage* and *langue*, many other semiotic resources, such as notably, pictures and gesture (not, of course, signed languages) are defined by *langage*, with *langue* only playing a secondary role. In other words, the latter may make use of temporally free types, but only as a second thought, and no bound ones, while verbal language necessarily needs temporally bound types (See section 2.5.4). A we saw above, however, a work of literature, and in fact any verbal text handed down orally or by writing, also requires the intervention of temporally free types.

Table 2.2. The exogrammization of memory, from the pre-episodic stage to that of mimetics. For the notion of pre-episodic memory, as well as the A- and B-series, see section 2.4.8 above.

Type of memory	Description	Sedimentation	Temporality	Spatiality
Pre-episodic	B-series	—	Innate release mechanism /Reflex act	—
Episodic	Retention/Protention (A-series)	Possible with repetition	Habitus	—
	Anticipation/ Remembrance	Often occurring	Autographic memory	—
Mimetic	Skill	In body part	Habitus	In body
	Tool use	Body part in interaction with object	Habitus	Body-to-object (later incorporated into body)
	Imitation (of the action of another subject)	Body in relation to the other subject	Entrenched habitus	Body-to-another-body (later incorporated into own body)
	Skill in autonomous action (dance, sport, acrobatics, etc.)	One of the above	Entrenched habitus	One of the above
Distributed cognition	Collaboration	Sediment with at least some reanimation	Entrenched collaborative habitus	Several bodies

No doubt, the distinctions made by Louis Hjelmslev (1959: 69-81) between “schéma”, “norme” and “usage”, and by Eugenio Coseriu (1962: 11-114), between “sistema”, “norma” and “habla” merit to be further explored, also in relation to other semiotic resources than language, but, for our present purpose, other inquiries are more urgent. The important issue for

us at present is that, while *parole* clearly seems to involve what Donald calls exograms, the status of *langue* and *langage* is much less clear. The problem is exacerbated if we take into account the distinction made by Merleau-Ponty (1945: 229) between "parole parlée" and "parole parlante", where the first consists of the layers of sedimented acts of meaning from which the latter constitutes a new-fangled departure. Whether the former is taken to be composed of genetic or generative sediments, they clearly are, in some sense, exogrammatic. But, as Merleau-Ponty indicates, they are still of the nature of *parole*, not *langue*. Perhaps Merleau-Ponty means to contrast the artistic employment of language to the more humdrum use, but we have learnt, from Humboldt and Coseriu, well before Chomsky, that all use of language is in principle creative. Or perhaps, as seems more probable from his later works, Merleau-Ponty (1969, 1988) is concerned with the difference between "authentic" dialogue, and more routine conversation. In actual acts of speaking, nevertheless, we all have recourse to a lot of more or less prefabricated formulae, that is, to "parole parlée". To the extent that this, at least in part, goes beyond individual consciousness, we can only make sense of this phenomenon as a kind of consolidated temporal consciousness, including its retentions and protensions, that is, as a kind of exogram, but very different from that of *langue*. And similar distinctions can be made with respect to other semiotic resources.

Table 2.3. The exogrammization of memory within the mythic stage.

Type of memory	Description	Sedimentation	Temporality	Spatiality
Mythic	System of rules	Intersubjectively maintained	Entrenched collaborative habitus	—
	Vocabulary (temporally bound types)	Intersubjectively maintained	Entrenched collaborative habitus	—
	Temporally free types	Intersubjectively maintained	Entrenched collaborative habitus	—
	"Parole parlée"	Intersubjectively maintained	Entrenched collaborative habitus	—
	Gossip/Rumour/Tradition	Maintained as a series of acts of communication	Temporally elaborated habitus	—

Here, again, Husserl's account of geometry as arising from land surveying becomes relevant. Land surveying is perhaps best described as an entrenched collaborative habitus, whereas geometry, as we know it today, is a system of rules endowed with a vocabulary. While it may certainly be the product of the generative sedimentation resulting from land surveying,

perhaps together with other kinds of everyday practices, it is genetically sedimented in us during our terms at elementary school. In the case of language, genetic sedimentation takes place at much earlier stages of life, but it is much more difficult to grasp the stages of its generative sedimentation. Indeed, this seems to be a case in which sedimentation has been so completely reified that it can only be investigated with other methods than phenomenological reanimation (See section 1.2.5). Something similar would seem to apply to the faculty of depiction.

Another kind of *parole* would seem to be a temporal extension of what Saussure, with an English term, calls "intercourse", and which we call rumour or gossip, when it occurs in a limited time slice (and when the theme is supposed to be trivial), and what is known as tradition, when it extends through the centuries (and is perhaps taken to convey more essential information). Whether the tradition consisted solely in a series of speech acts connected to each other (or thus surmised) through history, or whether some of these speech acts were materialized into written texts, it forms the subject matter of hermeneutics, and thus needs to have a status beyond the here and now. On the face of it, tradition may seem to epitomize "parole parlée", but, in reality, it can help us discover new information, which has been lost in the course of history. "Intercourse", spanning gossip and tradition thus seems to have a status in between engram and exogram.

Table 2.4. The exogrammization of memory within the theoretic stage.

Type of memory	Description	Sedimentation	Temporality	Spatiality
Theoretic	Temporally adapted artefacts (e.g. Innis' stelae)	In artefact	Enduring	Bulky
	Spatially adapted artefacts (e.g. Innis' letter)	In artefact	Impermanent	Lightweight
	Temporally and spatially more or less adapted artefacts (e.g. Peirce's inkstand and Merleau-Ponty's cane)	In artefact	Relatively enduring	Variable
	"Parole parlante" inscribed on artefact (e.g. Otto's notebook)	In artefact when related to system of rules and vocabulary	Relatively permanent	Variable
	Depictions inscribed on artefact	In artefact when related to human perception and, possibly, traditions	Relatively permanent	Variable

Donald's trinity of pictures, writing, and theory can be reduced to the former two: in fact, theory either has to be manifested in writing or in pictures, or in a combination of the two, or it must be treated as an instance of systems already available, at least in a rudimentary form, at the mythic stage (See Table 2.3). But we have to introduce other complications at the theoretic stage. One of these involves the distinction between storage media which a preferably adapted to spatial or temporal use, as suggested by Harold Innes (See section 2.5.2). Another distinction concerns artefacts perpetuating information of the kind already initiated in the mythic stage, such as writing as a novel manifestation of language, as opposed to artefacts which already carry a meaning from their precedent use, that is, what we, using a pseudo-Gibsonean terminology, have called cultural affordances, which is the counterpart of the mimetic skill epitomized by tool use (See Table 2.4). These are distinction which will be of importance in later chapters, but which we cannot develop at present.

2.5.6 Summary

We have been concerned, in the present section, to assemble notions which can be considered precursors to that of extended mind, such as Lotman's notion of accumulation, and Innis' ideas about temporally versus spatially adequate ways of preserving messages beyond the direct act of communication. We have endeavoured to go beyond the Peircean (and now generally accepted) distinction between type and token, spelling out two very different relations between token and type. In the process, we have suggested that the Husserlean concept of sedimentation (which is susceptible to reanimation) can be made to bestow a dynamical perspective on the notion of extended mind. This means, as we have insisted above, that any extended mind must have been extended from a genuine mind, but also, taking into account both genetic and generative sedimentations, that these extensions have acquired a status of their own within the stream of consciousness, which means that they may not always easily be reanimated. Phenomenology, of course, supposes that it can be done. But if extended mind, also known as the domain of exograms, is the result of sedimentation, then different processes of sedimentation will have different offshoots. One of the ways in which cognitive semiotics needs to go beyond both cognitive science and classical semiotics consist in establishing a taxonomy of different kinds of exograms. Contrary to current opinion, the problem is not to establish the existence of extensions of mind, which has long been recognized using different terms, but to spell out the differences between the various ways in which mind may be extended.

2.6. Relevance: Meaning before Signs

The idea of a system of relevancies was first delineated by Alfred Schütz (2011; 1970) in a posthumously published manuscript. It is possible to discover several possible anticipations of this notion of relevance, notably in the work of Schütz' great friend Aron Gurwitsch, and, retrospectively, in structural linguistics, which may have been unknown to Schütz at the time (although he was at the New York School of Social Research at the same time as Jakobson and Lévi-Strauss), and which, in any case, only partly overlap with Schütz' notion of relevance. Nevertheless, for most scholars today, the notion of relevance is wedded to the work of Dan Sperber and Deidre Wilson, and the further extensions of this theory, mostly authored by Sperber. Sperber and Wilson's approach was fundamentally based on the notion of "non-natural meaning", as characterized by Paul Grice.

Thus, in the following, we will basically be concerned with, on the one hand, the Gricean tradition of relevance, which was radically changed, in some respects, by Sperber & Wilson, and, on the other hand, with the phenomenological tradition stemming from Schütz and Gurwitsch, including its antecedents in Husserl's works. At the same time, we will be involved with three issues: first, whether the notion of relevance justifies the idea of meaning-making being entirely a question of peremptory decision being made at a particular time and place, or whether there is something like a system of relevancies, entrenched on the typical structure of the world taken for granted. Second, whether (scarce) empirical facts justify the claim for relevance being the result of the operation of an innate module in the human brain, or whether it may more plausibly be considered a kind of socially distributed cognition. And third, whether the contribution of relevance consists in presenting something new, or rather in offering the groundwork on which that which is new may emerge, i.e., the presuppositional structure, or perhaps both). This will lead us to suggest that Umberto Eco's idea of the Encyclopedia, as opposed to the dictionary, recreated in fundamental ways, Schütz' notion of the system of relevancies.

2.6.1. Some Notions of Relevance

According to Grice (1975, 1989), relevance is only one of the principles, together with quantity, quality, and manner, which must be observed, if communication is to work fluently, but Dan Sperber and Deidre Wilson 1995 claim all the Gricean principles can be reduced to the single principle of relevance. Interestingly, Grice (1989: 27), on the contrary, thought that the maxim of relevance had to be further amplified: "Though the maxim itself is terse, its formulation

conceals a number of problems that exercise me a good deal: questions about what different kinds and focuses of relevance there may be, how these shifts in the course of a talk exchange, how to allow for the fact that subjects of conversations are legitimately changed, and so on. I find the treatment of such questions exceedingly difficult, and I hope to revert to them in later work." He did not, as far as I have been able to ascertain.

Clearly, Sperber & Wilson had a very different interpretation of the notion of relevance, since they thought everything that Grice proposed could be reduced to this principle. The characterization of relevance offered by Sperber & Wilson is a classic case of a circular definition, the explication containing that which is to be explained: "information is relevant to you if it interacts in a certain way with your existing assumptions about the world." A more commonly quoted characterization of relevance given by Sperber & Wilson is that it should "yield the greatest possible contextual effects in return for the available processing effort". This tells us how to maximize relevance. It does not tell us what it is. We may come closer to what Sperber & Wilson (1995: 2ff, 55, 196, 202) mean by relevance if we regard it as the result of their attack of what they characterized as "the code model of meaning", also called "the semiotic approach". Their idea of semiotics is certainly too narrow (basically restricted to French structuralism), but they were not wrong in rejecting a model of the sign which had never been spelled out (see sections 2.2 and 2.4 above). They were mistaken, however, not only in dismissing signs entirely, but also in discarding any kind of typicality, or, to adopt the Peircean term, symbolicity, in the process.

In this respect, the theory of Sperber & Wilson comes right out of the criticism of Lévi-Strauss, earlier formulated by Sperber (1982), according to which the exchange of women (or mates, as Jakobson generalized the term) between different ethnic groups does not carry meaning in the same sense as the exchange of commodities or the exchange of linguistic signs – only that Sperber & Wilson deny this kind of meaning to language, too (See Sonesson 2010) and section 2.4.1 above). As a result of their critique, Sperber & Wilson conceive of meaning in terms of inference – and it so happens that this is the Stoic philosophers' understanding of the sign, which Augustin was the first to fuse with the Aristotelean notion of the sign as made up of expression and content, as John Deely (2001) has abundantly demonstrated (See section 2.2.4). Though it may be wrong to merge these different meanings of meaning, there is no point in rejecting the one or the other. We rather need to spell out their differences, as I have argued elsewhere (above and in Sonesson 2010).

"Relevance" (in French "pertinence") also happens to be the term used within structuralist

linguistics, and thus transferred to the linguistically inspired semiotics of the sixties, to designate those features of the sound wave, which made the difference between one phoneme and another, and thus could distinguish one word from another with quite a different meaning (See Trubeckoj 1939; Hjelmslev 1943); Prieto 1966; 1975). Thus, it is because of the relevance of the feature pair sonorous vs. mute, that /b/ and /p/ are different phonemes in English, and that "best" and "pest" are different English words. Still, a lot of the information contained in the sound wave does not serve to distinguish phonemes, and thus words, of the English language; some of this information, at the opposite end of the relevance scale, separates the voice of one person from that of all others; and in between is found everything which carries information about the dialect spoken, the emotional state of the speaker, and so on. Indeed, this is the kind of information which could become relevant a second time, defining what Louis Hjelmslev (1943), rather idiosyncratically, called connotational language, as exemplified, according to Hjelmslev himself, by the fact of everything he said conveying the meaning, "Danish language". Even if we allow for the fact that Hjelmslev really also spoke in French, and perhaps even in English (in which language he at least wrote some papers), the example is not ideal, because it supposes that exactly the same meaning can be conveyed in one language as in another (which Hjelmslev would be the first to deny). If, instead, we suppose that Hjelmslev spoke perfect French, but with a Danish accent (which he may not have done), the difference between the way he spoke and the speech of a Frenchman would be relevant a second time, for conveying the information that French was not his native language (See further Sonesson 1989: 179 ff.).

Although Schütz (unlike Gurwitsch) never appears to refer to the structuralist tradition in linguistics, his definition of the sign in terms of the apperceptual, appresentational, referential, and interpretational schemes (Schütz, 1962: 322) is very much in this spirit (see Sonesson 1989: 184). Indeed, the apperceptual scheme designates the order of objects to which the immediately perceived object belongs considered as a self, while the appresentational scheme concerns the same object considered as a member of an appresentational pair, thus referring to something other than itself. This is the distinction between substance and form in structuralist linguistics, exemplified, in the case of language, by the sound produced by the speaker (which may thus convey connotations in addition to the linguistic meaning) and the phoneme defined by the language system. The referential scheme pertains to the appresented object of the pair as "merely analogical", whereas the interpretative scheme concerns it as a member of a particular type of pairing. Perhaps we can understand this as involving, in a parallel fashion, the referent as a self, as opposed to the content, as which it is given in the sign. Again, we would have a

distinction between substance and form and, more concretely, between referent and content, or, in Peircean terms, between the dynamical and the immediate object.

This means that what is not relevant is not lost. It signifies, but at another level, and/or for another purpose. This is why I have used the distinction between relevance and winnowing to pigeonhole the distinction between the *Lebenswelt*, as defined by Husserl, and the *Umwelt*, as delineated by Jakob von Uexküll (see Sonesson 2010 and section 2.1.5 above). As far as I know, neither Husserl nor Uexküll were aware of the notion introduced by the other, although they both moved within an intellectual climate very much dominated by Neo-Kantianism. While the two notions have a lot in common, I believe that they can be retrospectively separated, by adding to the *Lebenswelt* properties not yet contained in the *Umwelt*. Indeed, I have suggested above (in section 2.2.5), the prototypical *Umwelt* is characterized by filtering, the *Lebenswelt* by thematic adumbration. The prototypical *Umwelt*, in this sense, is the one of the tick as described by von Uexküll. Many animal *Umwelten* are in this respect more similar to the human *Lifeworld*. Not only does a human *Lifeworld* consist of much more properties than that of the tick (which is not to say that there are no properties of "the world as such" which are filtered out of human experience), but these properties are not either there or not, but rather present in perceptual adumbrations. Thus, it might be said that properties are more or less relevant; but, more emphatically, they are relevant to different domains, interpretations, and purposes – or, as we now can say, to different systems of relevancies.

2.6.2 What Mary Smelled and What Clark Brought at the Tobacconist's

Since so little can be gained from the definitions offered by Sperber & Wilson, it will be useful to consider instead some case studies, which I have discussed elsewhere in a different context (Sonesson (1999b, 2012). They are all cases in which language does not play any part, but we will suggest that they still rely on rules and regularities for deriving their meaning. We will start with an example offered by Sperber and Wilson (1995: 55ff) themselves. When Peter opens the door to their apartment, in this scenario, Mary stops and sniffs ostensibly. Following her example, Peter notices that there is a smell of gas. What Mary does, according to Sperber & Wilson, can be paraphrased as "There is a smell of gas". On another occasion, Mary and Peter have just arrived at the seaside. Mary opens the hotel window overlooking the sea and sniffs ostensibly. In this case, Sperber & Wilson maintain, there is no one particular thing that Mary may be said to mean. In fact, however, I think it is reasonable to say that Mary does the same

thing on both occasions: by exaggerating the movements associated with smelling, she manages to frame off the movement, so that it appears as an iconic sign of what it would otherwise be. This gesture means, "There is a smell worthy of notice". No doubt the kinds of things we expect to smell at our doorstep and in a hotel room overlooking the beach are appreciably different. Both stories correspond to typical situations, which we have all experienced many times, if not in life, then at least at the cinema, so that we will immediately know what kinds of smells are being referred to.

In this case, Mary could be said to realize a metasemiotic quotation, transforming by means of a stretch of behaviour an instance into a type. Mary is exaggerating an action that she normally accomplishes as part and parcel of her ordinary, rather un-ostensive, life: smelling. In order to convey the message to Peter, she exaggerates this act of ordinary life. And because Peter recognizes the exaggeration as well as the ordinary act, he knows that she does so with a purpose. But first he understands what she means. Being regularities, type situations here discussed are situated at the level of symbolicity, in Peirce's scheme, but they do not necessarily involve signs (though in some case they may do). This important distinction cannot be made from a Peircean point of view (see Sonesson 2013a). Still, there can be no doubt that, at some level, taken-for-granted meanings are involved.

According to his autobiographical anecdote, Grice (1989: 93ff) goes to his usual tobacconist (from whom he also purchases other goods) to obtain a pack of his regular brand of cigarettes, and without saying anything, he puts down the sum of 43 cents, which, at the time, was the price of the pack, on the counter. The tobacconist understands what Grice wants and hands him the pack. In this case, Grice claims, he has meant something ("non-naturally"), which he had not in case he had put down the money on the counter only to demonstrate that he was in possession of the sum necessary for buying the pack. Grice manages to accomplish this feat, I submit, because of a whole series of regularities of the particular socio-cultural *Lifeworld* he shares with the tobacconist, but also because of some specific principles of relevance. It must obviously be supposed that none of the other goods that Grice is in the habit of buying from his tobacconist have the cost of 43 cents. It is possible, of course, that Grice has already bought something else having this price, but then it has not been one of those things he habitually buys. So, in this example, the gesture of putting down a particular sum on the counter only means something because there is a regular connection, known to Grice and the tobacconist, between the sum and the pack of cigarettes. It so happens that the relation between the sum and the product is conventionally assigned; but what makes the connection meaningful here is the

observation of a regularity in Grice's behaviour. In this context, it would be rather difficult for Grice to limit himself simply to demonstrate that he is in possession of the sum of 43 cents.

One is here reminded of Luis Prieto's (1966; 1975) idea of the sign as being a correlation between a series of signifiers and a series of signifieds, pertinence being the relation which links one of the former to one or several of the latter, and vice versa. Suppose that when Grice visits his tobacconist putting down 5 cents, he wants to have a box of matches and, when on more rare occasions, he puts down 1 dollar, he wants a lighter. If the tobacconist grasps this, he and Grice have created a small system of signs between them, which correlates specific sums of money with different objects that Grice is in the habit of buying at the tobacconist's. No doubt, this sign system has never explicitly been set up, but has emerged from an extended common experience of the regularities in Grice's behaviour. The tobacconist does not really have to spend any time thinking about Grice's intentions. They follow from his behaviour.

But that is not all there is to it. Herbert Clark (1996): 31ff) tells us about a similar, but inverted, situation, also supposedly autobiographical: Clark places two items on the counter of a drug store, and the clerk immediately understands that he wants to buy them. As Clark goes on to point out, this is a quite ordinary action of the everyday world. By placing things in certain places, such as the counter, we already convey the idea of what we want to be done. According to Clark's description, he also has to catch the eye of the clerk, but that is perhaps only necessary because the clerk, in this scenario, is occupied marking off items on an inventory. Also, note that in fact the items must have been collected at an earlier stage from the shop. If Clark puts his wallet on the counter, that does not mean he wants to buy it. But misunderstandings may result from such practices. Another case, which I have discussed elsewhere (Sonesson 1989: 333ff.), is the shop window. There is a difference here, because by placing things in the window one conveys the idea that things like these are for sale inside, and this is a more enduring act than the placement on the counter. But one also signals that the things in the window itself are for sale – except if one puts up an explicit message informing the prospective customers that this is not the case, or if everyone can see that the food in the window consists of wax imitations, or if there is a convention, as in the case of Nelson Goodman's (1968) birthday case ordered for next week, that the cake being presently in the shop window will not serve for the purpose. Grice's own example participates of the counter placement convention, but in addition common knowledge is required for concluding from the sum of money to the product, instead of the reverse.

To conclude, all these examples are far from being contingent effects of singular

situations: they all involve different kinds of regularities. This is not Grice's interpretation, and even less that of Sperber and Wilson (1995: 53–54), who actually claim there is a continuum between that which Grice calls natural and non-natural meaning. In doing so, however, Sperber & Wilson seem to reduce all meaning to ''relevance,'' without there being any principle to the relevance. On the contrary, I think there must be a principle determining what is relevant also in what Grice (1989) would call "natural meaning": the cloud only means rain to those who know about the relationship between clouds and rain, and who for reason of the *Lifeworld* choose to ignore other causes. Red spots of a certain type only mean measles to those who know about the symptoms of measles, and who do not care to take other causes or effects into account (See section 2.2.4. and 2.4.3). And, to proceed with Sperber's original example, the woman being exchanged between different ethnic groups means ''effect of an exchange with another tribe'' only to those who are familiar with this kind of exchange pattern, and who think this is the only (or most) important aspect of the meaning embodied in the woman in question, and of the whole situation of exchange.

2.6.3 Carneades at the Inn

According to Sperber & Wilson, there is only one principle of relevance, which is – relevance. On the other hand, the phenomenologist Alfred Schütz (1970) listed a series of principles, or more exactly "systems of relevancies", all broadly speaking social in nature, and having the function of guiding our interest in given situations as they occur in the *Lifeworld* (see Sonesson 2012). Sperber & Wilson, however, would seem to think there are no such principles, only the general task of making the best of the situation at hand. Although he does not formulate it in the same way, Grice also seems to sustain the idea of the ever-changing "utterer's meaning" reigning supreme. While something of this latter kind may remain in what Schütz (1970:25ff, 30ff.) designed as relevancies imposed by the actual situation, the main thrust of his argument consists in imputing relevancies to the typicalities of the *Lifeworld*, in Husserl's sense of the term. And though he does not really define the notion of relevance either (as is also noted by Jan Straßheim (2010: 1426), he certainly connects it to the notion of selection, itself dependent on interest, which is operative already in perception.

Just like Grice, Clark, and Sperber & Wilson, Schütz starts out from an anecdote taken from everyday life, even if, in his case, the anecdote is delivered to us from ancient sources: it is a story first recounted about Carneades, the ancient Greek philosopher directing the Platonic Academy at the time when it had converted to Scepticism. In this story (quoted by Schütz 1970:4ff from Cicero, De divinatione, I, XIII, XXIII], a man enters a room which is badly

lighted, not being sure whether what he sees in the corner is a pile of rope or a coiled snake. Initially, he has a roughly equally weighted motivation for believing the object to be the one or the other (see Schütz 1970:16ff; Cox 1978: 75ff; Schütz and Luckmann 1979, 1984: 252 ff.). Carneades' point at the time, obviously, was that no truth could be attained, but only verisimilitude. According to the anecdote, the man then realizes that the object is not moving, which offers him some simple evidence for taking it to be merely a coil of rope. In Carneades' terms, the first level of probability is reached, the most likely. Continuing the inspection of the object, however, the man is reminded that it is currently winter, and that snakes are torpid at this time of year. The original evidence is counter-evidenced, possibly convincing the man that extreme caution is called for. Finally, he picks up a stick, strikes the object in question, and observes that it still does not move, thereby corroborating the interpretation of it as a coil of rope. Instead of contravening evidence to the first verisimilitude, he now has confirmation of it. He has, therefore, not contented himself with gaining evidence at one level, but has sought out additional indications and counter-indications which could pertain to the situation.

In Schutz's terminology, the Carneadean man has sought out those perceptions and sedimented experiences from his stock of knowledge which are relevant to the problem at hand. As Schütz (1970) goes on to observe, Husserl (1939) might well be able to go along with this description, as far as it goes, calling it a case of problematic possibilities, but he would point out that the situation into which the Carneadean man treads is a kind of prepredicative experience, pre-constituted by passive synthesis, which accounts for the experience of similarity, likeness, contrariness, and all kinds of typicality of which the situation is largely made up. Such elements, I submit, are also what makes the analysis of this situation different from those which Grice and Clark, as well as Sperber & Wilson, offer of their respective anecdotes. Adopting a Husserlean perspective, Schütz points out that the case will be different, whether the Carneadean man enters his own bedroom, where everything, except for this object, is stamped with the property of familiarity, or whether instead, he enters a room where he has never been before, where in principle everything could be new to him.

However, this may be the point where something should be added to what Schütz says, though certainly along the lines of Schütz' analysis: Suppose what he enters is a bedroom, either at a hotel, or in the apartment of some friends who have convinced him to stay overnight for the first time. In this case, basically everything will be new to him, but on the level of instances, not on the level of types. He will expect there to be (at least) one bed, complete with bedclothes, and very probably one or two bedside tables, one chair or more, a few lamps, at least in the

ceiling, and (at least in the case of the hotel) a desk. No doubt this will only hold true if we transport the Carneadean man to our contemporary world, because, at his time, all this may not have been expected in a hotel room, and if we enter a hotel room of his time (supposing there to be something comparable), we would no doubt be surprised not to find all this furniture. In more or less recent times, we would also expect there to be a telephone, a television set, and a Wi-Fi connection in the room – if it is a hotel room, not, perhaps, if it is a room in our friends' apartment. Even though we cannot anticipate in detail how these objects will look in each particular case, they all form part of the "unproblematic field over against which problematic topics stand out", as Schütz (1970: 127) expresses the case elsewhere. Even so, the heap of rope/the snake will emerge as being the main problematic possibility, but perhaps more slowly than in the own bedroom. Even when crossing the Amazonian rain forest, the heap of rope/the snake may still stand out as the most problematic possibility in the end, but not, probably, if we are also confronted with something which might be a Jaguar or simply a speckled hide perceived for a fleeting moment in the midst of the forest.

2.6.4 Relevancies and Sedimentations

As Ronald Cox (1978: 138ff) rightly observes, Schütz in unclear about the processes accounting for the systems of relevance, whether they are active or passive, monothetic or polythetic, and whether they concern the noetic or the noesis side of the noetico-noesic correlation posited by Husserl. These issues are too complex to be broached here, but the publication of Husserl's later manuscripts concerning generative and genetic sedimentation may throw at least some light of these problems, in particular as they have been explicated by later commentators (See Steinbock 1995; Welton 2000; Sonesson 2015 and section 2.1.4. above). It is worthwhile mentioning, however, that, in his early writings, Schütz 1974: 109ff) introduces the notion of a scheme of our experience ("ein Schema unser Erfahrung"), not, as he immediately observers, in the sense of Kant, but as

> ein Sinnzusammenhang unserer erfahrenden Erlebnisse, welcher zwar die in den erfahrenden Erlebnissen fertig konstituierten Erfahrungsgegenständlichkeiten erfaßt, nicht aber das Wie des Konstitutionsvorganges, in welchem sich die erfahrenden Erlebnisse zu Erfahrungsgegenständlichkeiten konstituierten.
>
> In other words, a series of earlier "polythetic acts" are now reconceived "monothetically".

Once constituted in this way, these schemes are, as Schütz goes on to explain, applied to the interpretation of new experiences. This is clearly the same procedure which Edmund Husserl (1939) and Aron Gurwitsch (1972; 1974) called formalization, and which the second compared to what Jean Piaget describes as "abstraction from the action", which is a definition of the

scheme in Piaget's sense (See Sonesson 1989: 97 ff.); and it is also reminiscent of what the social psychologist Frederic Bartlett (1932) called "frames" and sometimes "schemes", as well as what has been known be these terms in more recent work within artificial intelligence and cognitive science (see Sonesson 1988: 14 ff.). In later works, Schütz repeatedly uses the term "scheme of interpretation". Schütz (1966: 299, 327f) also describes the sign as made up of four different schemes, thus containing the sediments of experiences deriving from different spheres of existence.

What remains unclear, however, is how this notion of scheme relates to what Schütz later on calls systems of relevancies. In his *Reflections*, admittedly, Schütz (1970: 2, 36, 39, 43, 170) mentions "schemes" and "schemes of interpretation" several times, and, at least on two occasions, he talks about "schemes of interpretational relevancies" (106f), which sounds as a hybrid between schemes and relevance systems. Curiously, the term scheme seems to be absent from Schütz' most important posthumous work, which abounds on the theme of relevancies, in terms of both structures and systems (Schütz and Luckmann 1979, 1984: 252 ff.). Might not the system of relevancies be conceived as made up of schemes, or being equivalent to schemes, in which case we have a least something more of an account of the passive synthesis behind it? We will no doubt ever know what Schütz thought about this, but this idea could still be taken as a cue for developing his idea of relevance systems.

According to Aron Gurwitsch (Gurwitsch 1957, 1964, 1985), as we saw above (section 2.1.2), every perceptual situation is structured into a theme, a thematic field, and a margin. The theme is that which is most directly within the focus of attention. Both the thematic field and the margin are in contiguity with the theme, but the thematic field is, in addition, connected to the theme at a semantic level. When attending to the theme, we are easily led to change the focus to something within the same thematic field. Changing what was earlier in the margin into a theme, on the other hand, is felt to require some kind of exterior incitement. In the margin is normally found some items of consciousness that always accompany us, such as our own stream of consciousness, our own body, and the extension of the *Lifeworld* beyond what is presently perceivable. But the margin will also contain all items that are not currently our theme, nor connected to this theme. Schütz often connects his systems of relevance to such a thematic structure, though his references to Gurwitsch are rather oblique (1970: 2, 86, 161). The idea certainly originates in the work of Husserl, as well as in that of William James (1978), but, to my mind at least, the most enlightening description was the one given by Gurwitsch, and it seems to inform what Schütz here writes.

Interestingly, Gurwitsch (1957: 271f, 310 ff.; 1964: 343f, 394 ff.) formulates some critical remarks on Schütz' theory of relevance, with reference to the 1945 paper "On Multiple Realities" (now in Schütz 1966: 207-259). Or, to be more exact, he claims that his use of the term "relevance" is not the same as that found in Schütz' work. And he goes on to deny that Schütz' term has anything to do with the theme-thematic field-margin structure of the field of consciousness which interests him. Clearly, at least in his later *Reflections*, Schütz (1970) took a different view. More to the point, Gurwitsch (1964: 342; his italics) observes that, to Schütz, "*a certain item is relevant to me* on the account of projects and pursuits that engage me" (which is also an aspect of Schütz work emphasized by Straßheim 2010), while to Gurwitsch himself, "*a certain item* is said to be *relevant to the theme* (which may well be a plan of action or a pursuit) and also to other items because of their relevancy to the theme".

More light may be thrown on this contention, if we consider the curious publication history of Gurwitsch's book about the field of consciousness. It was written while Gurwitsch was living in France, and it was first published in French, though in a translation from the original English manuscript. The French translation, however, does not use the idiomatic translation of "relevance" into "pertinence", but keeps the term "relevance", always, it seems, in square quotes (see Gurwitsch 1957: 271). In French, the term "relevance" does not exist, though it may later, at the time of French structuralism, have infiltrated French scholarly discourse coming this time from linguistics. Nevertheless, there is a French verb, "relever", which, among other things, signifies something like "depending on" or "pertaining to a particular domain" (Le Petit Robert: "être du ressort de, dépendre de, être du domaine de"). Indeed, this is precisely the meaning given to the term by Gurwitsch (1957: 270: 1964: 340, his italics): that which is relevant is not simply co-present with the theme, but it is "of a certain concern to the theme. They have something to do with it." This rapprochement supposes Gurwitsch to be knowledgeable in French, in spite of having written the manuscript in English. Indeed, not only did he publish a few articles in French, but the manuscript of his lectures in that language at the Institute of the History of Science of the Sorbonne has recently been published (Gurwitsch 2002).

According to Gurwitsch (1964: 342), Schütz seems to understand relevance much more with reference to a given, embodied, and situated Ego, "though occasionally using the term in a sense close to ours". This seems to me less true about Schütz' later writings, at least not as I have understood them above, taking into account his recourse to the Husserlean notion of typicality. Despite Gurwitsch's critique, I think we are justified in seeing in Schütz' relevancies

a kind of thematic adumbrations. At least Schütz' (1970: 26) topical relevancies could be understood in this sense: as "that by virtue of which something is constituted as problematic in the midst of the unstructuralized field of unproblematic familiarity – and therewith the field into theme and horizon." From a Gurwitschean point of view, nevertheless, one may wonder for whom something becomes problematic while other things remain familiar. The interpretational relevancies seem to involve the different possible interpretations of what the problematic item could turn out to be, which, in the Carneades case, may be a pile of rope or a snake, and perhaps other things, but certainly not a table or a bed (Schütz 1970: 38ff). These interpretations seem to me to be difficult to separate from the topical relevancies, of which they are rather a part, somewhat like a paradigm, a set of alternatives, in relation to a syntagm, the chain of connected items. The motivational relevancies are more obviously beside the point in a Gurwitschean perspective, because they have to do with the motives which make us act on our interpretations (Schütz 1970: 45ff). But Schütz might have been better inspired to treat topics, interpretations, and motives as different aspects of relevance systems.

It might be useful here to contrast (as in a volume edited by Pascal Boyer (Boyer and Wertsch 2009) autobiographical memory networks, which are said to define the self, with collective memory, in the sense of Maurice Halbwachs (1975), which has variously resurfaced in recent times under such names as distributed cognition and extended mind. Gurwitsch's concern, certainly, was not with the social foundation of relevance systems, but rather with epistemological and ontological ones, but his observations may still help us go beyond the individualistic bias in Schütz' sociology. While motivational relevancies form part of the relevance network which makes up the self, they remain foreign to the collective relevance network, in which topical and interpretational relevancies are inextricably fused. No doubt this is a way of "naturalizing" phenomenology, which Schütz certainly may be taken to have done, and which I think Gurwitsch also did, malgré lui, when incorporating Gestalt psychology, and the work of Kurt Goldstein, into his reflections (see Gurwitsch 1957; 1964; 1966).

If we give such a social interpretation to relevance systems, which, at least in the case of Schütz, is clearly warranted, I think we can go beyond the opposition which Gurwitsch sees between his own notion of relevance, and that of Schütz. In his critique of epistemological individualism, and in favour of externalism, Robert Wilson (2004: 77ff, 107ff) argues that most intentional contents of consciousness must have a "context-sensitive realization", that is, in other terms, they must "go beyond the head". Within phenomenology, this is of course trivially true, since intentionality is defined as transcendence in immanence, but Wilson is clearly heir

to the other tradition starting out from Franz Brentano, analytical philosophy, although he does not reduce intentionality to a linguistic problem. Interestingly, however, Wilson (2004: 112ff, 116f) claims that, apart from "entity-bound realizations", which are defined by properties entirely internal to their being, there are a lot of "wide realizations", in the case of which the "noncore part is not located entirely within" the individual, and also "radically wide realizations" in which the "core part is not located entirely within /…/ the individual who has" the property in question. An example of a wide realization would be the property of being a predator which is something which can only be understood in relation to a certain ecological niche, and also in relation to certain other animal species. A radically wide realization could be the act of signing a check, in which case the part accomplished by the individual, that is, the movement of the hand which produces a scribble, is a very small part of all the institutions and conventions necessary for securing the identity of the act.

Apparently without knowing it, Wilson has rediscovered the notion of "mind-independent" relations, which preoccupied the Scholastic philosophers (see Deely 2001: 353 ff., who gives such examples as being a judge, a priest, or a teacher; cf. Sonesson 2010: 209 ff. and section 2.2.4 above). As far as I know, however, the Scholastics did not make the fundamental distinction between wide and radically wide realizations. The examples given both by Wilson and Deely show that this kind of relations are very common: in fact, we will be hard pressed to find examples of phenomena which are not at least to some extent "wide" or "mind-independent". Wilson (2004: 141ff) makes still another important point: although most phenomena in consciousness may have "wide realizations", they are still owned by a subject: "And my belief that Paris is the capital of France remains my belief even though it has a wide realization". This is, I submit, how we should think of relevance systems. But they must certainly be radically wide realizations.

2.6.5 Relevance Between Contingency and System

One research path, after Dan Sperber's (1982) criticism of Lévi-Strauss idea of meaning, goes to his invention, together with Deidre Wilson, of relevance theory, which in itself is an outgrowth of speech act philosophy. Another itinerary, which at first appears to be divergent, led Sperber to evolutionary psychology, combined with modularity theory. As we will see in the following, there is a paradox to this, because it means that, at least to some extent, Sperber will have to abandon the absolute contingency of his pragmatics model. Nevertheless, the kind of structure which he now recognizes is found in the brain and, originally, in the genes. In the following, we will show that mainstream evolutionary psychology (in the sense of "socio-

biology", etc.), and in particular the modularity approach, is problematic, not only because of its importance to the argument of this section, but also, as we will see, to later parts of the book. Nevertheless, it is important to note, for the purpose of later chapters, that we will return to the discussion of evolutionary theory (as distinct from evolutionary psychology), and that we will then accept, with some modifications, the conceptions of some of its recent exponents (See Chapter 8).

Without delving deeper into this issue at present, we will suggest that the general principles posited at the biological level, by both experimentalists and ethnologists who are colleagues and followers of Sperber, can just as conveniently be understood in terms of the general structures of the *Lifeworld*. As we will see, another biologically inspired follower of Sperber tries to explain the emergence of modules in terms of the survival of the fittest, where the game is won by the one who has most new information to offer. But clearly, both in Sperber's and Schütz' versions of relevance theory, relevance has more to do with "the given" than with "the new". We won't have to discuss whether this just-so story has any merit as an explanation for the emergence of modularity. If so, it could just as well justify the structures of the *Lifeworld*. But, as Schütz can be taken to suggest, although somewhat obliquely, relevance involves both the given and the new. This should bring us to delve a little deeper into structuralist linguistics, particularly as further developed by M.A.K Halliday, the double distinction between Given and New and Theme and Rheme sems to be prefigured in the work of Alfred Schütz. Merging these two disparate approaches may therefore be seen as a way to go deeper into the intricacies of a theory of relevancies.

Trying to account for mainstream evolutionary psychology, as well as for modularity psychology, would certainly take us too far from the purpose of this chapter. Suffice it to say that what I have elsewhere (Sonesson 2016a) characterized as mainstream evolutionary theory may best be understood as on overwrought version of the so-called "modern evolutionary synthesis", which notably combines Darwinian evolution with Mendelean genetics, and that some of the main tenets of this theory have been popularized by such writers as Richard Dawkins and Stephen Pinker, the former infamously epitomizing the theory as that of the "selfish gene". The origin of modularity theory is found in Noam Chomsky's postulation of a "language learning device", which he claimed to be quite independent of general intelligence, and the generalization of this idea to other parts of the human mind, realized by Jerry Fodor, who nevertheless went on to caution others of the temptation to posit, "a massive modularity of mind". Stephen Mithen (1996) did not listen to this admonition, but claimed that the

prehistorical mind was made up of modules for at least social, natural history, technical and linguistic intelligence, which were nonetheless later fused together in the modern mind. The postmodern synthesis of modularity theory and evolutionary psychology, however, was accomplished by John Tooby and Leda Cosmides (2000), who had no misgivings about positing an open list of modules, or "devices", in the mind, and who thought that these devices, although they have supposedly been developed as responses to the evolutionary situation of the early Homo Sapiens, are still operative in contemporary human beings.

Although we cannot discuss here what modularity means to Fodor, Mithen, or Tooby & Cosmides, it will be necessary to mention what is taken to be the defining properties of modules: they are specific to a particular domain of mental operations, genetically determined, associated with distinct neurological structures, and computationally encapsulated, which it to say that each of them works independently of all other modules in the mind. This makes this brand of evolutionary psychology into some kind of phrenologist revival. Therefore, it is important to note that the relationship of modules to neurological structures is purely speculative. I, at least, know of no neuroscientist who believes in the existence of modules. Indeed, two neuroscientists (Panksepp and Panksepp 2000) have delineated "the seven sins of evolutionary psychology", one of which is "massive modularity", arguing instead for the plasticity of the human mind.

Although Sperber (1996) clearly declares himself a devotee of evolutionary psychology, he is mostly concerned with revising Dawkins' proposal for a theory of cultural evolution, denying part of the parallel between genes and "memes" postulated by Dawkins. It is only at the end that he initiates a discussion, which at first seems rather open-ended, on the existence of modules (see Sperber 1996: 113, 119 ff.). In later publications, nevertheless, Sperber (2000; Girotto et al. 2001; Sperber and Hirschfeld 2004) does not only use a modularity approach, but sets up a "defence of massive modularity" (Sperber 2001), trying to demonstrate that modularity theory is compatible with the flexibility of interpretations which seems to be a requirement of relevance theory (Sperber 2004). Still, if one wants to see concrete applications of Sperber's modularity theory, it might be better to go to his declared followers, such as Jean-Louis Dessalles (2000) and Pascal Boyer (2002), which is also what we are going to do in due time.

Along with a long row of other scholarly approaches, evolutionary modularity theory is clearly committed to the following views, as expressed by Robert Wilson (2004:15. My numbering and additions):

> /1/. The Internal Richness Thesis: Structures and processes internal to the individual /mind/ that are important to the acquisition and development of X are rich.

/2/. The External Minimalism Thesis: Structures and processes external to an individual /mind/ play at best a secondary causal role in the acquisition and development of X.

Wilson describes the set of approaches corresponding to these criteria as "individualism", and that may be correct as far as the mode of access to the structures and the processes is concerned, but the subset of these approaches espousing evolutionary theory must take for granted that those parts of the genes and/or brain structures which account for the different modules are essentially identical from one individual to another. The same data adduced by evolutionary modularity theory would therefore seem to allow for the opposite interpretation, according to which the external information is rich, and the contribution of internal structures is minimal. Developing ideas from the neuroscientist Merlin Donald (1991: 2001), I have elsewhere proposed that such processes and structures which are common to human beings may more plausibly be incarnated in "types of memory" shared between individuals, such as behavioural patterns, including gestures, acts of imitation, language systems, pictures, and writing (See Sonesson 2016a; 2020).

Nonetheless, evolutionary modularity theory is clearly committed to a couple of other constraints, which we could formulate as follows: 3. The processes and structures in one part of the mind (a module) are "encapsulated", that is, their workings cannot be influenced by other parts of the mind (other modules); 4. The functioning of the modules is automatic, and not open to inspection either within the module, or drawing on other mental structures, whether modular or not. 5. The modules were developed as a result of the evolutionary history of human beings, and are therefore adapted to the kind of environment, sensibly different from the present one, in which Homo sapiens first was differentiated from other species.

2.6.6 The System of Relevancies as Module or Cognitive Gadget

One should not expect scientific theories to adhere too closely to empirically verified facts, but evolutionary modularity theory appears to entertain an appreciable distance to such facts that have been ascertained. It is not my business here to demonstrate the falseness of evolutionary modularity theory, but only to show that the kinds of facts adduced to confirm the theory may just as well be accounted for by means of socially based relevance systems. We will start by having a look at the experiment which has been said by others to be the single empirical evidence possibly favouring evolutionary modularity theory: the revised Wason test (see Davies et al. 1995).

In the original version, Wason's experiment involved a set of four cards placed on a table,

each of which had a number on one side and a coloured patch on the other side. The visible faces of the cards showed 3, 8, red and brown. The task was to determine which card(s) must be turned over in order to test the truth of the proposition that if a card shows an even number on one face, then its opposite face is red. From a purely logical point of view, only a card with both an even number on one face and something other than red on the other face can invalidate this rule. Therefore, only the brown card and the card with an eight needed to be turned over. Wason's subject failed miserably to accomplish this task: less than 10 percent of them go it right.

Leda Cosmides 1989) replicated this experiment, formulating the task in more familiar terms: thus, if the rule is (rather realistically in the contemporary world) that, if you are drinking alcohol, then you must be over 18, and the cards show the age on one side and the beverage on the other, e.g., "16", "drinking beer", "25", "drinking coke", most people have no difficulty in selecting the correct cards ("16" and "beer"). Since any other combination would be an example of cheating in relation to this rule, which can be supposed to be a very important thing to know about an individual in prehistoric societies, Cosmides draws the conclusion that she has discovered the existence of a cheater discovering device, which has become specialized in the human brain as a result of our evolutionary history. Cosmides here goes very fast down the level of abstraction, because, even if we do not, in our everyday life, react according to the requirements of formal logic, this experimental result is very far from showing, until more studies have been made, that a specific cheater module is needed. In between formal logic, and the cheater device, there are several levels of abstraction, and one, particularly fundamental one, or so I believe, is the level of the *Lifeworld*, or, as Schütz would have said, the world taken for granted. Clearly, you do not need a specific cheater device to solve the version of Wason's puzzle presented by Cosmides, but only to have access to the common sense socio-cultural *Lifeworld* in which you live, in which certain issues happen to be, again in Schütz' terms, relevancies imposed by the present moment.

Without worrying about any of these subtle issues, Pascal Boyer (2002), from the start, declares himself a follower of Sperber, but, for most of his book, his references to Sperber's work remain rather oblique, and mostly couched in terms of "systems of inferences". As far as I can tell, this expression is never used by Sperber. The idea of there being a (or several) system(s) to inferences seems to contradict the very spirit of Sperber & Wilson's relevance theory; on the other hand, it appears to anticipate Sperber's later career as a devotee to evolutionary modularity theory. Interestingly, however, Boyer posits some "systems of

inferences" which could just as well be understood as social relevance systems, and some of them have been anticipated in my own work of phenomenologically inspired semiotics (Sonesson 1989, etc.), but also, in part, in psychological studies (Mandler 2006; DeLoache 2000, etc.). From a phenomenological point of view, it is rather the second term which creates problems, for, to the extent that relevance systems result from passive synthesis, they, like empathy (see Sonesson 2013a), cannot consist in inferences, properly speaking, but must be sediments of earlier acts

Boyer is out to explain religion, which may account for some of the "inference systems" which he posits. Still, he does not give any more specific reasons for positing these systems. An example of an "inference system" given by Boyer (2002: 131f) is that of face identification. There are reasons to think that face identification is a good candidate for being an in-built system, but the reasons Boyer gives for it being a module, when properly considered, would rather suggest it is a social system:

> We automatically register these subtle features that make two faces different, but we ignore these same cues when presented with animal faces. /---/ Our interaction with people depends, obviously, on whom we are dealing with. By contrast, our interaction with giraffes, snakes or hyenas does not depend on which animal we are chasing or running away from, but on what species they belong to, and that may be why our brains are biased not to notice those fascinating differences between giraffe faces.

To argue at the same anecdotal level, we may observe that we easily see the differences between faces of people to whom we are accustomed, but not to other faces. It is a common prejudice in Europe that all Asians look alike, and it seems that Asians hold the corresponding notion about Europeans. As soon as you start travelling in Asia, you begin to see things otherwise. And those who live closely with animals will not agree with Boyer's contention that we do not see differences in animal faces. Most children do not, however, grow up surrounded by giraffes or other animals, but by human beings, so this may readily explain why they easily identify different human beings, but not different giraffes.

Boyer (2002: 112ff) characterizes "inference systems" as "specialized systems" which only handle "a limited aspect of the information available about our surroundings" and yet produce "very smart inferences about that aspect". Some of those systems he mentions serve to make the distinction between things that move versus those which do not move, things that are animate and thus move by themselves and things which only move because something else has initiated the action, natural things and those which are artificially made, and so on. Together with three-dimensionality as opposed to two-dimensionality, these are the properties which I have distinguished as being part of the fundamental hierarchies of the *Lifeworld* (see Sonesson

1989; 2010). Jean Mandler (2006) demonstrated, in her studies of small children, that they could readily make the distinction between animate and non-animate beings, and Judy DeLoache (2000) showed in her experiments, that the distinction between two-dimensionality and three-dimensionality is something that children need time to grasp, which happens around three years of age. There can be no doubt that these are basic systems of relevancies, in Schütz' sense. As to the question whether they are innate or learnt, the jury is still out, and may continue to be so for ever.

In her recent book, Cecilia Heyes (2018: 9, 22) presents what she terms "cognitive gadget theory", in opposition to the "High Church evolutionary theory" ascribed to Tooby and Cosmides, and thus, by implication, to Sperber.[27] The way in which she characterizes such "cognitive gadgets" makes them sound similar to systems of relevancies.

> Cultural evolutionary psychology makes a radical departure from both evolutionary psychology and cultural evolutionary theory in proposing that distinctively human cognitive mechanisms— ways of thinking— have been built by cultural evolution. They are cognitive gadgets rather than cognitive instincts; pieces of mental technology that are not merely tuned but assembled in the course of childhood through social interaction. Some of the components and engines of construction are genetically inherited, but the designer of the human mind is natural selection acting on cultural, rather than genetic, variants. We are taught the thinking skills that make us peculiar. Those skills are not "in our genes."

2.6.7 Given Relevancies and New Ones

In our literature review, so far, relevance always seems to have to do with that which is known beforehand, presupposed, or inherited from earlier experience, which is applied to the given situation. In his attempt to account for the evolutionary origin of language, Jean-Louis Dessalles (2000), taking his cues from Sperber & Wilson, nevertheless understands relevance as the opposite of that which is taken for granted, that is, that which introduces some new element to the situation. While Schütz as well as Sperber & Wilson treat relevance, expressed in linguistic terms, as something given in the situation, Dessalles presents it as new information. It is true that he does so in the context of a just-so story which spans a lot of evolutionary time, but he does not deny that this may still be true of every situation of meaning-exchange since then. In any case, we will not here be concerned with the plausibility of the evolutionary origins hypothesized by Dessalles. Suffice it to say that, according to Dessalles (2000: 245ff), who thereby adopts a hyper-adaptionist framework, the famous survival of the fittest depended on

[27] Curiously, Heyes (2018: 32, 36, 44, 166) refers to Sperber several times, but only in passing, making it impossible to establish her view of his work.

the ability to offer new, and thus relevant, information, and the advantage lost by sharing this information with others was compensated for by the reputation gained by the one presenting this information, who thus had the opportunity to spread his (not hers, at the time) genes more widely. This may, in the end, be a caricature: Dessalles' proposal is considerably more complex, but, in the present context, we are only interested in the basic scenario. But, for those of us who have lived in France, it is difficult not to see this as a case of the life of the Parisian intelligencia being projected back in evolutionary time.

No matter what we think about the evolutionary paradigm proposed by Dessalles, it poses the curious question whether what it relevant is that which constitutes new information, or that which is presupposed. Straßheim (2010: 1427ff) has a long and intricate discussion of this alternative, couched in terms of "contextualisation" versus "continuation", and attributed, respectively, to Sperber & Wilson and Schütz. The former attribution is no doubt correct, as applied to Sperber & Wilson's classical book, but it is only true in a fairly Pickwickean sense for the later version featuring "massive modularity". As for Schütz, his indications may be sparse, but if we take into account his background in Husserl's work, and thus in the latter's model of time consciousness, the irruption of new facts can only be understood on the background of routinely experiences, as the disconfirmation of protensions based on earlier retentions of retentions of retentions, and so on.

In his model of time consciousness, Husserl (1966) specifies that each present moment already includes references to the past (retentions), which comprehends references to even earlier moments, and so on (retentions of retentions, etc.), and references to the future (protentions), enclosing references to even later moments, and so on (protentions of protentions, etc. See Figure 2.18). This means that each retention flows into another, and so do the protentions, and there will be retentions of protensions and protentions of retentions in addition. Retentions and protentions may already give rise to a kind of sedimentation of meaning, as Husserl (1939) understood the latter term: as the layering of meaning over meaning in time. Thus, retentions and protentions are clearly distinct from the acts of remembrance and anticipation, which are active events in their own right. As Husserl (1966) insists, protentions and retentions are parts of acts, and should not be confused with the active acts of remembering and anticipation. We may well think of the system of references, being of the nature of passive synthesis, as situated within such a system of protentions and retentions. However, if relevance is to afford anything new, an independent act of anticipation or, more paradoxically, memory, has to emerge on the background of such as stream of consciousness (see Figure 2.18). Indeed,

we should perhaps also add the third kind of independent acts of consciousness mentioned here by Husserl, that of phantasy. This should naturally account for the dialectics of continuation and contextualization suggested by Straßheim (2010: 1426ff, 1437ff).

When Schütz (1970: 124) writes: "The problematic emerges on the foundation of the unproblematic, and the unknown refers to the familiar; the novel experience is novel because it cannot be related and referred to the sum total of known things", he may simply be spelling out the basic structure of the *Lifeworld* as given in consciousness. As Straßheim (2016: 502), who quotes the first part of the formulation, suggests, this could be taken to imply "that the unquestioned routine course of things is the default which needs no explanation (it is, in this respect, 'taken for granted' by the theoretical observer as well), whereas a revision of the routine depends on a 'problem' which triggers it." Nonetheless, it could also be understood to mean that, in any given moment, the problem which stands out (which could be, but is not automatically, the piece of news) is, as a matter of course, embedded in the structure of the situation which is unproblematic and familiar. In other words, Schütz does not necessarily mean to say that, in the normal course of events, all presuppositions are fulfilled, but merely that what is new and/or problematic only can become salient on the horizon of all that remains customary and familiar.

Schütz' *Reflections* are preliminary notes for a publication, which not only explains but justifies their being somewhat contradictory and vague. Still, there are places, such as the following where that which is relevant, if perhaps not the relevance systems, appear as novel:

> Subjectively we may identify an actual experience with something already experienced as the "same," or the "same but modified," or a "like one"; we may "recognize" it or find out that there is nothing within the stock of our previously typified knowledge congruent or even comparable with the actual one — and then we will acknowledge this actual experience as novel, that is, as one which cannot be matched with something already experienced by means of the passive synthesis of recognition (Schütz 1970: 22).

Schütz may not have been as influenced by Gestalt psychology as Gurwitsch, but I think we can clarify this "interplay of operations" which the whole time "starts again" (Schütz 1970: 128) with a reference to the ideas of that contemporary movement of German psychology. We might say about typifications what Sander Sander and Volkelt (1962) said about wholes, that if the distance between the occurrence and the "good form" is small, the difference is not observed; next, it will be seen as a not quite perfect example of the configuration in question; and even further from the ideal, it can be experienced as in an equilibrium between two different "good forms". But, of course, it might also break up the good forms entirely.

In fact, I think there is a place, and a very central one indeed, for novelty in Schütz' relevance systems: it is the interpretational relevancies, as opposed to the topical ones:

> The interplay of operations starts again, or in our language new interpretational relevancies supervene and the whole process of inquiry recommences [---]. Motivational relevancies are simply taken for granted, and the topical kind are either interpreted as emergent novelties or as the results of the operation of interpretational relevancies. Now while it is true that methods refer merely to the ascertaining of what is interpretationally relevant, this latter concept refers to a topic at hand. How these topical relevancies emerge is beyond the reach of operational rules and methodology — except, as we stated before, that interpretational relevancies may make visible new aspects of the previous topical aspects hidden in the hitherto unquestioned horizontal implications (in which case, subthematization and even covering the prior topic may occur). (Schütz 1970: 128f).

It is a problem, nevertheless, as Straßheim maintains, that novelty tends to appear in Schütz' writings mostly as – a problem. As Straßheim (2016: 505) notes, "on the contrary, novel aspects may strike us as interesting in their own right, precisely because they are novel" going on to observe that "we often deviate from a routine for the sake of diversion, even at the risk that our curiosity may hamper the routine. After all, routines in particular tend to become boring." In fact, at least according to the Russian Formalists and the Prague School, the whole business of art is about breaking routines or, as they formulate it, render something strange or unfamiliar or, in Bertold Brecht's version to "alienate" ("verfremd") it. In several papers, I have, on the one hand, showed that this conception can be described using the Husserlean notion of time consciousness, while, on the other hand, I have maintained that the procedure in question in fact only is characteristic of Modernist Art. In my most recent paper on this theme (Sonesson 2016b), nonetheless, I discuss Ellen Dissanayake's somewhat attenuated version of this claim, according to which art originates in different kinds of behaviour, including ritual, which are geared to making things "special" or, as she also says somewhat pleonastically, to "artify" them. Ritual is, of course, a rather special way of breaking a routine, since it is a routine in itself, though less customary than those of everyday life. When it comes to breaking routines, nothing goes further than Dadaism, Surrealism, and Situationism. However, my main critique of Dissanayake's conception consists in pointing out that everyday life if full of "special", and even perhaps somewhat "strange", occurrences. So "spontaneity", as Straßheim (2016) calls it, is certainly there, in everyday life as well as in art. But it cannot do without the systems of relevancies.

Within linguistics, the distinction between given and new goes back at least to the Prague School, where, under the name of "functional sentence perspective", it was the only thing to

survive the extermination of the Prague school ideas by the Communist regime. Nowadays, however, these ideas are mostly associated with the work of Michael Halliday and his school. In fact, Halliday suggests a further division, opposing Given and New to Theme and Rheme, the distinctions of which do not necessarily coincide. Indeed, as noted by Halliday and Matthiessen (2014: 119f), the unmarked situation is for information structure to coincide with thematic structure, the Theme falling within the Given, and the New within the Rheme:

But although they are related, Given + New and Theme + Rheme are not the same thing. The Theme is what I, the speaker, choose to take as my point of departure. The Given is what you, the listener, already know about or have accessible to you. Theme + Rheme is speaker-oriented, while Given + New is listener-oriented. But both are, of course, speaker-selected. It is the speaker who assigns both structures, mapping one on to the other to give a composite texture to the discourse and thereby relate it to its environment (Halliday & Matthiessen 2014: 120).

This is curiously reminiscent of a passage written by Schütz (1966: 322)

> The sign used in communication is always preinterpreted by the communicator in terms of its expected interpretation by the addressee. To be understood, the communicator has, before producing the sign, to anticipate the apperceptual, appresentational, and referential scheme under which the interpreter will subsume it. The communicator has, therefore, as it were, to perform a rehearsal of the expected interpretation.

This is the sense in which also that which is new has to go through the process delineated by the relevance systems. If novelty cannot be held in common by the "sender" and the "receiver", it has to be divided up. But that, of course, is only true until the next sentence begins.

2.6.8 Eco's Encyclopaedia and the Dictionary

From early on in his scholarly career to the very end, Umberto Eco (1976; 1984; 1999; 2014; 2017) has been arguing, ever more persuasively, that semiotic content takes the form of an encyclopaedia, not a dictionary, where the latter is understood as a Porphyrean tree, that is, as a continuous binary subdivision of terms, in which no properties are ever encountered anew on the different branches. In contrast to the dictionary, Eco (2017: 40) describes the encyclopaedia as a rhizome:

> Every point of the rhizome can be connected to any other point; it is said that in the rhizome there are no points or positions, only lines; this characteristic is doubtful, however, because every intersection of two lines makes it possible to identify a point; the rhizome can be broken and reconnected at any point; the rhizome is anti-genealogical (it is not a hierarchized tree); if the rhizome had an outside, with that outside it could produce another rhizome, therefore it has neither an inside nor an

> outside; the rhizome can be taken to pieces and inverted; it is susceptible to modification according to the growth of our knowledge; a multidimensional network of trees, open in all directions, creates rhizomes, which means that every local section of the rhizome can be represented as a tree as long as we bear in mind that this is a fiction we indulge in for the sake of our temporary convenience; a global description of the rhizome is not possible, either in time or in space; the rhizome justifies and encourages contradictions; if every one of its nodes can be connected with every other node, from every node we can reach all the other nodes, but loops can also occur; only local descriptions of the rhizome are possible; in a rhizomic structure without an outside, every perspective (every point of view on the rhizome) is always obtained from an internal point in the sense that every local description tends to be a mere hypothesis about the network as a whole. Within the rhizome thinking means feeling one's way by conjecture.

Although at the time, he did not dispose of terms such as "rhizome", Eco, already in *La struttura assente* (Eco 1971) opposed what he there called the Q-model to the ordinary idea of dictionary entries. In Sonesson (1989: 73), nevertheless, I followed Arthur Koestler (1966: 27ff), in suggesting that reality (at least as it is experienced by human beings) is a "multi-levelled, stratified hierarchy of sub-wholes", where each sub-whole or *holon* is, in relation to higher levels, a dependent part and, in relation to its own parts, a whole of remarkable self-sufficiency. But I also followed him in presuming that such "holarchies" can be regarded as "vertically" arborizing structures whose branches interlock with those of other hierarchies at a multiplicity of levels and form "horizontal" networks, termed reticulations. In this view, arborization and reticulation are complementary principles in the organization of meaning. Koestler's model, it seems to me, accomplishes the same task as Eco's encyclopaedia, but it does so by supposing a multiplicity of organizational networks which intermesh at numerous points. In other terms, Eco's encyclopaedia is a merger of Koestler's holarchy and his reticulations.

Patrizia Violi (2017: 234ff) takes Eco to task for claiming that, at the local level, that is, in our terms, at the specific moment that the act of communication takes place, the encyclopaedia is flattened out into a dictionary entry. I think both Eco's point and that of Violi are well taken. To go beyond this opposition, and to get closer to grasping the nature of such a locally situated encyclopaedia, I suggest we should be exploring the notion of systems of relevancies. As we saw above, Alfred Schütz (1970) listed a series of principles, or more exactly "systems of relevancies", all broadly speaking social in nature, and having the function of guiding our interest in given situations as they occur in the *Lifeworld*. While Schütz (1970: 25ff, 30ff.) did not forget about the contingencies of the present situation, the main thrust of his argument consists in imputing relevancies to the typicalities of the *Lifeworld*, in Husserl's sense

of the term. To illustrate how we might seek out those perceptions and sedimented experiences from our stock of knowledge which are relevant to the problem at hand, Schütz (1970:4ff.), as we saw above (section 2.6.3) tells the story about Carneades, who enters a room which is badly lighted, not being sure whether what he sees in the corner is a pile of rope or a coiled snake. Initially, he has a roughly equally weighted motivation for believing the object to be the one or the other. Carneades' point at the time, obviously, was that there is no truth available, but only verisimilitude. According to the anecdote, the man then realizes that the object is not moving, which offers him some simple evidence for taking it to be merely a coil of rope. In Carneades' terms, the first level of probability is reached, the most likely. Continuing the inspection of the object, however, the man is reminded that it is currently winter, and that snakes are torpid at this time of year. The original evidence is counter-evidenced, possibly convincing the man that extreme caution is called for. Finally, he picks up a stick, strikes the object in question, and observes that it still does not move, thereby corroborating the interpretation of it as a coil of rope. Instead of contravening evidence to the first verisimilitude, he now has confirmation of it. He has, therefore, not contented himself with gaining evidence at one level, but has sought out additional indications and counter-indications which could pertain to the situation. Thus, Schütz turns a sceptic's argument to a narrative of our progressive search for truth – which we can approach though not definitively attaining it, as both Husserl and Peirce have observed (See further Sonesson 2018).

2.6.9 The Pool of Knowledge as an Encyclopaedic Thesaurus

To give more substance to the idea of relevance systems, we have to have recourse to the phenomenology of the field of consciousness developed by Aron Gurwitsch (1957; 1964; 1985), to which I have referred above (in section 2.1.6). Although Gurwitsch and Schütz became close friends in their shared New York exile, they never quite manged to bring their different phenomenological analyses to bear on that of the other. Nonetheless, this is exactly what we will try to do in the following. According to Gurwitsch, every perceptual situation is structured into a theme, a thematic field, and a margin. The theme is that which is most directly within the focus of attention. Both the thematic field and the margin are in contiguity with the theme, but the thematic field is, in addition, connected to the theme at a semantic level. When attending to the theme, we are easily led to change the focus to something within the same thematic field. Changing what was earlier in the margin into a theme, on the other hand, is felt to require some kind of outside incitement. In the margin is normally found some items of consciousness that always accompany us, such as our own stream of consciousness, our own

body, and the extension of the *Lifeworld* beyond what is presently perceivable. But the margin will also contain all items that are not currently our theme, nor connected to this theme.

This is an excellent beginning for a theory of attention, as Sven Arvidson (2006) has recognized, but it is not a full-blown theory. Schütz often connects his systems of relevance to such a thematic structure, though his references to Gurwitsch are rather oblique (1970, 2, 86, 161). The idea certainly originates in the work of Husserl, as well as in that of William James, but, to my mind at least, the most enlightening description was the one given by Gurwitsch, and it seems to inform what Schütz here writes.

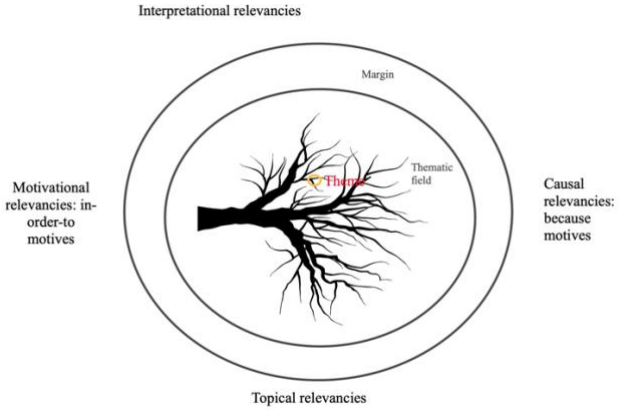

Figure 2.22. The field of consciousness, as conceived by Gurwitsch, with Schütz' systems of relevancies inscribed. Here we treat Schütz's sundry kinds of relevancies as different aspects of a system of relevancies. The figure shows arborization, in the sense of Koestler, but abstracts, in the interest of readability, from reticulation, which is what makes the difference between the dictionary and the encyclopaedia.

Reading Schütz' 1945 paper, and writing the manuscript in France, before his close contact with Schütz in the US, Gurwitsch (1964: 342) observes that "though occasionally using the term in a sense close to ours", Schütz seems to understand relevance much more with reference to a given, embodied, and situated Ego. This seems to me less true about Schütz' later writings, taking into account his recourse to the Husserlean notion of typicality. In spite of Gurwitsch's critique, I think we are justified in seeing in Schütz' relevancies a kind of thematic adumbrations. At least Schütz' (1970: 26) topical relevancies could be understood in this sense: as "that by virtue of which something is constituted as problematic in the midst of the unstructuralized field of unproblematic familiarity – and therewith the field into theme and horizon." From a Gurwitschean point of view, nevertheless, one may wonder for whom something becomes problematic while other things remain familiar. The interpretational

relevancies seem to involve the different possible interpretations of what the problematic item could turn out to be, which, in a case prominently discussed by Schütz, may be a pile of rope or a snake, and perhaps other things, but certainly not a table or a bed (Schütz 1970: 38ff). These interpretations seem to me to be difficult to separate from the topical relevancies, of which they are rather a part, somewhat like a paradigm, a set of alternatives, in relation to a syntagm, the chain of connected items. The motivational relevancies are more obviously beside the point in a Gurwitschean perspective, because they have to do with the motives which make us act on our interpretations (Schütz 1970: 45ff). But Schütz might have been better inspired to treat topics, interpretations, and motives as different aspects of relevance systems.

Pursuing the lead of my earlier discussion (see Sonesson 2018), I will now spell out the lineaments of a model of what may take place within the overlapping circles of the communication model, that is, the interacting minds of the addresser and the addressee (See Figure 2.22). For the sake of readability, we here abstract from reticulation, in Koestler's sense, which is what makes the difference between the encyclopaedia and the dictionary, in the sense of Eco. Interpretation, topics, and motivation are considered to be different aspects determining the choices made in the network. Following other texts by Schütz (1974; 1962-1996), motivations are divided into in-order-to motives (motives in the ordinary language sense) and because-of motives (causes). Altogether, this model can be considered to show a particular state of the field of consciousness, with the theme being situated, as in the story of the Carneadean man, right in the corner where a configuration appears (interpretational relevance), which could be seen as a pile of rope or a coiled snake or perhaps some third thing (topical relevancies). Carneades wants to enter the room, but hesitates, because of the danger which could result from this configuration being identified as a snake (in-order to motives), where this motive itself builds on the knowledge that snakebites may be poisonous (because motives).

Thus, the concrete situation serves to prune to the savage wood of the encyclopaedia into the likeness of a Porphyrean tree. Reticulation may not have to be given up, but it retreats to the margin of consciousness, when holarchy comes to the front.

This may be the moment to point out that there is another difference between the dictionary and the encyclopaedia, as these terms are usually understood: the business of the dictionary is to connect words to words (usually in different languages), that is, signs to other signs, or, if it is monolingual, expressions to contents, whereas the encyclopaedia purports to connect meanings (or signs) to realia, that is, referents. Perhaps a thesaurus would be a more adequate *analogon* here, since it includes terms with neighbouring meanings, or, in terms of

earlier linguists such as Weisgerber, Trier, and Coseriu, a semantic field – except, of course, that this semantic entanglement should not be cut off from realia, that is, the *Lifeworld*. This is the sense in which Peirce's notion of meaning is more helpful that that of Saussurean linguistics.

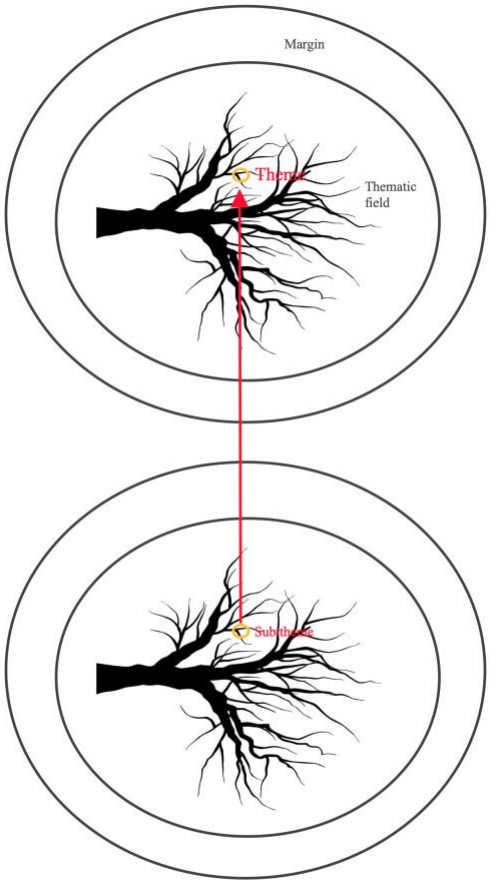

Figure 2.23 A sign interpreted as a double system of relevancies

If, for the moment, we leave out the issue of reference, and if we think of the encyclopaedia cum thesaurus in terms of relevance systems, which we have already interpreted as consisting of (sedimented) fields of consciousness, we have to envision any sign as consisting of a double, interconnected system of relevancies (See Figure 2.23). If so, this would mean that a dictionary (perhaps not a printed one, or its equivalence in digital form, but that of a bilingual person) is made up of two interconnected system of relevancies which are, in turn, connected to two other such system, no doubt in very complex ways (Figure 2.24). I originally designed the latter figure to account for metaphors, but clearly, there are importance differences between dictionary entries and metaphors. Thus, we will have to return to this question later on (see Chapter 7).

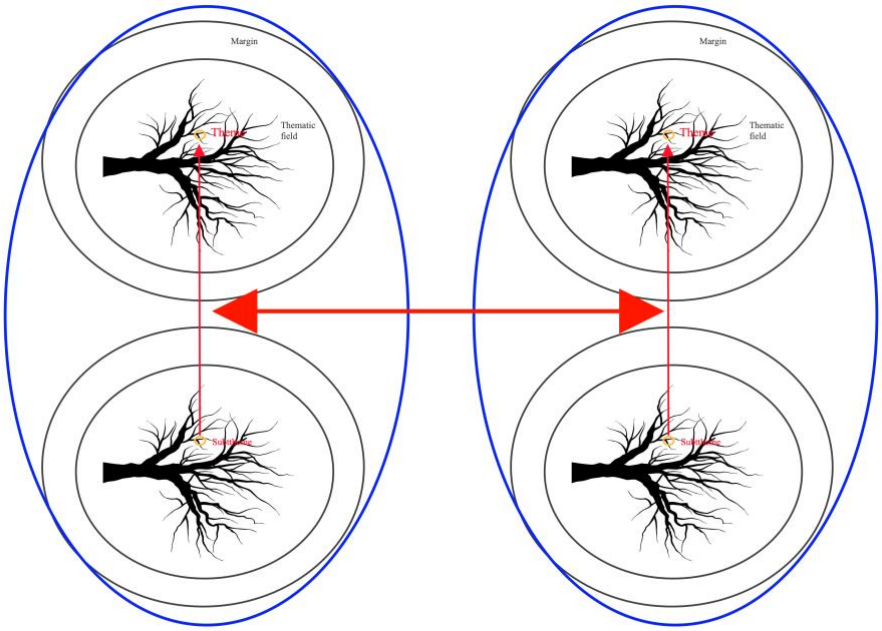

Figure 2.25 The mapping of one sign to another in terms of systems of relevancies

2.6.10. Summary

The idea of meaning as relevancy has been introduced several times, always with different, but slightly overlapping, import. To the structuralists of the Prague and Copenhagen Schools, it meant that part of meaning which had to remain constant to preserve the relation between expression and content in a given sign. To Aron Gurwitsch, it had to do with the way a (perceptual) meaning was situated within a thematic field, which was connected to it both in terms of meaning and in terms of context (in Peircean terms, perhaps, in terms of both iconicity and indexicality). To Alfred Schütz, relevancies form systems, which are socially available in particular situations, where they help us to make sense of our experience by offering alternatives of interpretation. Thus, Schütz seems to anticipate the notion of relevance presented by Dan Sperber and Deidre Wilson, in spite there being not historical connection. An importance difference, nevertheless, is that Schütz builds on the work of Husserlean phenomenology, according to which meanings are available to assist in the interpretation in a particular situation, because they have been sedimented in earlier experiences, whether those pertain to the specific individual involved (genetic sedimentation) or to those of a group, a society, or the whole human species (generative sedimentation).

There is a paradox to the Sperber-Wilson thesis, at least it has been pursued in later

publications by Sperber: it starts out as an all-out attack, nominally on "the semiotic code model", but in fact on the whole tradition of linguistics from the grammars of Greek and Roman antiquity, onto those of the Encyclopaedists and the French Ideologues, and further to structuralist linguistics, according to which (at least linguistic) meaning must be systematically grounded. In this respect, Sperber and Wilson followed the lead of speech act philosophy, as initiated, possibly, by Austin, but more obviously by Grice and Searle. But this leaves as a complete mystery where meanings come from. Sperber clearly thinks he has found a way of accounting for this by accepting what he calls "massive modularity". By so doing, however, he seems to go from one extreme, the total contingency of meaning, to the other, its complete predetermination in terms of innate modules. As should be clear from the argument above, I think that, apart from being contradictory, both alternatives are erroneous.

Sperber's modules may be better understood, in Cecilia Heyes' terms, as "cognitive gadgets", that is, as the result of cultural evolution. In more explanatory terms, however, they can be seen as the result of the processes of genetic and generative sedimentation, which gives rise to extensions of mind, entertaining more or less of a distance to the mind from which they are extended. Schütz's notion of systems of relevancies, when combined with Husserl's idea of genetic and generative sedimentation, can be used to account for the way we make sense of our experience, while both relying on systems of relevancies already constituted, and helping to constitute others, or at least to amend those already existing as we go along. If we project Schütz's idea of systems of relevancies onto Gurwitsch's notion of the field of consciousness, which could also be understood, with Arvidson, in terms of extent of attention, we can get a sense of what meaning is, without narrowing it down on the sign. Nonetheless, Eco's idea of meaning being embodied, not in the dictionary, but in the encyclopaedia, gives us further pause for thought. We can make sense of Eco's encyclopaedia in terms of systems of relevancies. But, after all, there is a sense in which dictionaries are more complex than encyclopaedia: they connect, if not different languages, expressions to content, that is, they involve signs. This is why we ended this section, and this chapter, with an anticipation of signs as complex systems of relevancies.

2.7. Conclusion

This chapter has taken us on a long and convoluted journey, but it has been necessary for laying the groundwork of a cognitive semiotic approach to pictorial meanings, both in their specificity, and how they are similar and different from other species of meaning. It is imperative, we have claimed, to start out from the *Lifeworld*, as the world taken for granted, which is fundamentally

based on perception, while also requiring the presence of time consciousness. Within the *Lifeworld*, the sign stands out as a very peculiar, but important, configuration by means of which meaning may be conveyed. Although many meanings are not signs, according to this definition, pictures, along with language, fulfils all requirements. Looking at the sign from the point of view of a process of communication, nonetheless, we discover other properties which turn out to be of fundamental importance, notably the difference between the sign of the addresser and that of the addressee, and the way the sign conveys the information that it is a sign.

The *Lifeworld*, as it has been described by Husserl and his close followers, is already embodied, enacted, embedded, extended, and distributed, but the recent discussion of these properties within cognitive science serves to prompt us to delve deeper into the import of these terms. In this chapter, we have suggested that Husserl's notion of sedimentation may be used to make sense of extended (and distributed) mind, but the real task is to distinguish different ways in which mind may be extended. This chapter contains a very preliminary approach to the latter problem, to which we aim to return in later chapters. In any case, we need to complicate our notion of the system presiding over meaning-making: a first approach could be to develop the idea of a system of relevancies first suggested by Schütz. In one way, this conception is more precise than the idea of relevance presented by Sperber and Wilson, but, at the same time, it is more open-ended with respect to the difference between the interpretation of language and of depiction.

Envoi

The next chapter will be concerned with the notion of iconicity, which is often taken to be the characteristic feature of pictorial meaning. Nonetheless, we will see that, even if iconicity is taken to be a property of signs, it applies to many semiotic resources other than pictures, including, notably, verbal language. Indeed, if we take iconicity to stand for a similarity of meaning, then also many affordances of a picture as an artefact are iconic. Although there are many precursors to Peirce's distinction between icons, indices, and symbols (using different terminology and making, mostly, more distinctions), we cannot nowadays address issues of iconicity without taking into account what Peirce meant by this term. As anyone trying to understand Peirce's work knows, iconicity is an instance of Firstness, just as indexicality is an instance of Secondness, and symbolicity an instance of Thirdness. But what does Peirce mean by these terms? Curiously, the secondary literature on Peirce's work does not seem to delve

deeper into the meaning of these categories. This is why we will have to start by trying to distil a sense out of the difference definitions which Peirce offers of these categories. Only then can we go on to discuss iconic signs generally, and pictures more specifically.

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