Part II: Theory of Knowledge

Chapter 5: The Meaning of Activity. The Semiotics of Activity Theory

Pp. 289-396 IN:

5. The Meaning of Activity
the Semiotics of Activity Theory

In this chapter, the category of meaning will be examined. In the previous two chapters, the discussion of the status of meaning was related to the problems of anthropology and epistemology, whereas the focus in the present chapter is limited to the *function and production of signs*. This concept is defined in the following way:

> Signs are *phenomena and objects carrying meaning*.

Thus, the field of semiotics will be examined, covering such issues as *signs* that are the vehicles of meaning, the *objects referred* to, the *subjects* involved and, of course, the very content of the *meaning*. The field of semiotics therefore is engaged in examining issues that have been discussed in such disciplines as philosophy of language, semantics, linguistic pragmatics and cognitive psychology.

To start the inquiry into these two elusive concepts, *signs* and *meaning*, I will reveal a somewhat embarrassing travel episode of my youth. The purpose is neither to illuminate the sometimes embarrassing troubles of tourist life nor to confess the awkward behaviour of my youth now long past. The function of the story is to illustrate the working of the entities that are subjected to the analysis of the present chapter, that is, the *vehicles of meanings*, the **signs**. I will present primarily the major types of signs that will be examined in the last sections of the chapter.

Now to the story of my youthful travels. Some 30 years ago, I arrived at the central station of Warsaw after a rather exhausting journey by train from Copenhagen. Due to the somewhat modest sanitary standard of the Polish trains of that time, I felt an intense need to relieve myself. Luckily, I soon found a locality that was evidently dedicated to this not very pompous, but essential purpose. In fact, there were two such facilities, in proper accordance with the sex segregation still maintained for intimate occasions like these.

There were separate entrances for both localities, and on each door, a word was painted. The two words were PANIE and PANOWIE. To my misfortune, no other people had indulged in the temptation to comfort themselves in the sanitary services, and as a further complication of matters, I was not properly prepared linguistically to decipher the inscriptions. Anyway, my visceral conditions were at the moment quite unfavourable for any immediate improvement of my rather superficial knowledge of the Polish language.

Instead of dedicating myself to a comprehensive study of this passionate Slavic tongue, I had to choose a strategy characteristic of mammals being in a situation where the force of motivation is predominant in comparison to the extent of their knowledge of the field. In other words, I was forced to rely on exploratory action. Somewhat hesitatingly, I chose almost haphazardly, but perhaps not quite, the door ornamented with the word PANOWIE. (In those days, long before women's liberation, I shall not deny the influence of a male-chauvinistic idea about the dominating sex having also the most impressive designation.)

Anyway, in a mixed state of yearning, hope and uneasiness, I transgressed the doorstep, a threshold that very well, at the same time, could have been a limit of decency. Indeed, my worst fears were realised, for inside the room of sanitation I caught a glimpse of two women, who, however, as a lucky reduction of my shame, were both quite decently dressed. After a hasty retreat, I corrected my error by opening the other door, resigned, but also assured, that according to information theory, I could be certain I was on the right track this time. I consequently opened the door marked with the word PANIE. However, to my astonishment and horror, this second choice was absolutely no improvement. Actually, I had only escaped from the frying pan by jumping directly into the fire. For in this second sanitary locality, there were not just two, but a handful of female passengers busily engaged in the pursuit of beauty, and thus heroically compensating for the shortcomings in post-Stalinist Poland of materials necessary for this demanding activity

With the icy looks from a half dozen of this assembly, consisting of, no doubt, impeccably devout Catholic women, I fled in my second desperate retreat within less than a minute. On the verge of a combined urological and cognitive breakdown, I returned with my fast vanishing residuals of will power to the first room, the one that bore the inscription PANOWIE. At least I would prefer the limited majority of just two females to an outnumbering by triple the amount.

This time, however, I took the time to perform a more thorough examination of the mysterious interior of this room of sanitary service, and I now discovered that the women were not visitors in the duty of either nature or beauty, they were charwomen, fighting a losing battle to keep a fair standard of sanitation in the sanitary services. To my great relief this time, I further discovered that in the rear of the room there were also two Polish men who were accommodating themselves at the urinals, evidently quite unaffected by the presence of the female cleaning personnel.

What is the meaning of telling this travel story? Well, it is meant to demonstrate some basic features of the class of phenomena and objects that is the subject of the present chapter, the *signs*. I have already introduced the mediating relation in human activity that I called *reference*; the functional value of this reference is *meaning* and the vehicle to which meaning is attached is a *sign*.

In the story, there are two kinds of signs. The first signs were the painted inscriptions on the doors, this kind of sign I call **specific** or **dedicated signs,** as they, in fact, are defined through their function of reference. The inscriptions in question, after all, were made with the sole purpose of referring to the exclusive right of sanitary use for one of the sexes. The specific signs of the story were, however, not very useful in their function of reference for a linguistically ill-prepared foreigner. The signs actually showing which room was for the ladies and which was for the gentlemen were the very users of the respective rooms.

Thus, the living persons were also signs, but of course not specific signs, as they were certainly not produced with the narrow purpose of showing foreigners in a state of urgency the proper sexual assignment of sanitary rooms. Such un-dedicated signs I call **unspecific** or **incidental** signs.

These *unspecific* signs certainly do not form a class of exquisite specificity. Indeed, I will demonstrate in a while that the entire anthropological object field coincides with the class of all signs, of which the *dedicated* signs amount to just a very small proportion, and the *unspecific* signs consequently amount to the absolutely greater proportion.

The story is further intended to demonstrate that the reference that is the function of signs is intimately related to the activity of which their actual function is a constituent. The meaning of the dedicated signs that were painted on the doors had as their context the activity of travelling, in which the operation of using a sexually appropriate bathroom plays a modest, but urgent part. The story also points to the fact that a necessary aspect of any human activity is the

production and use of signs. Meaning is the very quality of the intentional mediation that is the *specifica differentia* of human activity.

This story is meant to serve as an *aperitif* before a quite heavy meal consisting of many courses, in fact there will be six of them. The first main section presents and discusses the plethora of various theoretical positions concerning the *ontological* problems of semiotics. Eight different schools of thought will be presented, including my own position, the cultural historical school.

The next main section analyses the problem of semiotic *divisibility*, that is, the relation between whole and part. It is succeeded by a discussion of the dialectics between *meaning and operation* in semiotics. The following main section on *concepts* has as its starting point the famous mediaeval diatribe about individuals and universals. Then a personal contribution to the problem about *logical classes* follows. The concluding main section treats the relation between *semiotics and dialectics*.

First, the definitions and theories of semiotics must be examined.

There are three relatants of the concept of sign that will be discussed in this chapter:

1.   the signs as entities (vehicles of meaning)
2.   the subject (user of the signs)
3.   the referent (object of sign)

The specific disciplines dedicated to these aspects are:

1.   the study of signs: semiotics
2.   the study of subjects: psychology
3.   the study of objects: ontology

Of these disciplines, we have already introduced the last two and we shall therefore focus on the first in the present chapter. If we proceed to the relations between the three aspects, we also have three binary relations:

a.   subject-sign: the conceptual relation[1]
b.   sign-object: the semantic relation
c.   subject-object: the operational relation[2]

Of these relations, the third one has already been treated in the previous chapter on epistemology and we will accordingly concentrate on the two first relations. We will call relation "a" the conceptual relation and relation "b" the semantic relation. It must be remembered that the relation of real relevance is the full triadic relation, that is, the relation related to meaning:
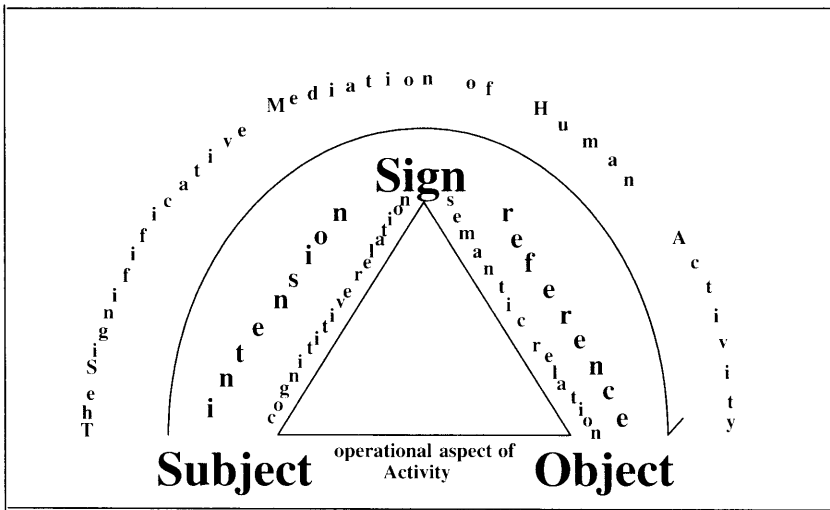
The Triangle of Meaning

fig. 5.1

This famous triangle of meaning was Ogden and Richard's (1936) attempt to convey Peirce's obscure semiotics (Colapietro & Olshewsky 1996) in a more lucid form. The presented triangle, however, is a version that is entirely my own, as the perspective intended is not just semiotic, but the total scope of human activity.

The triangle was presented first in the chapter on anthropology. In the diagram above, it is supplemented with an explanation of the relations between the three relatants of meaning. I have defined the incomplete relations as, on the one hand, conceptual, and on the other hand, semantic.

The conceptual relation is the relation between the subject and the sign, as it is distinguished from its object. I use the logical term *intension* to indicate this relation, because intension means the system of qualities constituting a concept. Thus, intension can be understood as what the subject has in mind, when he or she is using a specific sign.

According to one definition of semantics, another discipline of linguistics, one examines the relation between the word or the sentence (here generalised to the sign) and the object or state of affairs referred to.

The direct aspect of the relation between subject and object is called **operational**. In fact, it is a pure abstraction that such a direct relation can exist in human activity. Moreover, this abstraction contradicts the definition of human activity that was presented in chapter 3. However, just as it is an abstraction to talk about the relation between subject and sign in the absence of the object, it is also an imaginative act to conceive the relation between subject and object in the absence of the sign. Both of these abstractions are, nevertheless, useful, as they focus on the twin aspects of human activity.

The grand arrow of the diagram refers to the definition of meaning, according to Activity Theory, as the significative mediation of human activity.

This diagram will be used as a guide to the discussion of meaning in the present chapter. It is my intention to demonstrate that most of the positions referring to a theory of meaning can be identified by the emphasis placed on some of the categories and relations in the triangle of meaning and the neglect of other categories and relations. Typically, a specific theory of meaning will hypostasise a certain subset of categories and relations, at the price of ignoring other categories and relations, thus exaggerating the former and minimising the latter.

The initial presentation of the triangle of meaning points to the conception of meaning based on Activity Theory that was introduced in the preceding chapters. It should be emphasised, however, at this early point that there are ambiguities and shortcomings in this model, as there are in all models. In particular, the relatant *subject* is under-defined in relation to the problem of individuality and collectivity (discussed in the previous chapter on epistemology). To explain the full meaning of the grand arrow of significative mediation or, alternatively, the

bottom relation between subject and object as the operational aspect of activity, we have to understand the individual subject as contextualised within a societal collective, not to say a societal setting.

The total field of discourse concerning signs and their use is called semiotics. It is a rather complicated and ill-defined discipline, because it has, at the same time, the characteristics of a philosophical foundation of the sciences and an autonomous empirical science, more precisely a subfield of anthropology. Just as in the case of epistemology, the relation between semiotics and anthropology is thus *heterarchal*. We have to presume the existence of signs and their quality of meaning to entertain an anthropological discourse, and at the same time the semiotic phenomena and objects must be defined as a part of anthropology. This somewhat disturbing condition of semiotics was treated in the preceding chapters as *reflexivity*, and it will be treated at the end of the present chapter.

Now, however, we shall begin by investigating the ontological status of the phenomenon we are dealing with, *meaning*, as it is conceived by the various schools of semantics. I intend to treat these positions in a way that is, at the same time, critical and constructive, having the *ideé fixe* of dialectics that whatever their erroneous and sometimes even bizarre nature, each of the schools contains a kernel of truth contributing to an adequate and complete theory of meaning.

5.1 The Ontological Status of Meaning

In this section, the main conceptions concerning the ontological status of meaning will be discussed. We shall relate the different schools of semantics to the categories and relations of meaning. For each major position, I will present a graphical diagram that represents the triangle of meaning according to the position in question. I will use the following graphical conventions:

1. The fundamental entity or entities will be circumscribed by a square.
2. The derivative entity or entities will be circumscribed by a circle or ellipsis.
3. The entity or entities that are ignored simply will be left without any circumscription

We shall start with the position that hypostaces[3] intension, the very category of meaning.

5.1.1   Absolute Idealism, the Hypostacy of Meaning in itself

Plato's theory of ideas is not only one of the first consistent theories of meaning, but also one of the most influential. Plato suggests that the meaning of the fundamental concepts that he calls ideas are transcendental, prior and more essential than the phenomena of ordinary life. In this objective or absolute idealism, the three tangible relatants of meaning that were introduced in fig. 5.1 dwindle to mere epi-phenomena. The objects are just shadowy reflections of the eternal forms (eide)[4]. Moreover, the consciousness of uneducated human individuals is nothing but a simple-minded belief in the reality of these shadows.

> Then before we began to see and hear and use our other senses, surely we must have acquired knowledge of what equality is, if we were then going to compare with it the equal objects that we perceive, and think that all these kinds of things are doing their best to be the same as it, but inferior.[5]
>
> Now if we had it [the knowledge of the form of equality] before birth and were born with it, have we both before birth and as soon as we were born known not only equality and greater and smaller but everything of that kind? For our present argument is not simply about equality, but about beauty, goodness, justice, holiness and, as I say everything to which in asking questions and giving answers in discussion we give the title "what it itself is". Therefore we must have had knowledge of all these things before we were born.[6]

Plato's teaching of the forms will be discussed in the section on concepts (5.4.1.4).

Also, Hegel is a firm believer in the objectivity of ideas:

The idea is the true in and for itself [an und für sich], the absolute unity of Concept and Objectivity.[7]

In Hegel's philosophy, we find another version of absolute idealism. The main difference between the former and the latter is that the Platonic ideas are static and the Hegelian dynamic. Actually, this distinction is a logical consequence of the disparity between Plato's "reactionary" conception of evolution and Hegel's "progressive" conception.

The dynamic Hegelian conception of ideas is expressed in the following:

> The idea is essentially *process*, as its identity is only the absolute and free content of the concepts, on the condition that it is absolute negativity and thus is dialectical.[8]

Plato had a conception of a cosmic and historical evolution in which the original ideas of divine origin were depreciated by their incarnation in our sordid existence. Thus, the historical events of his own time were understood as the degradation of the original aristocracy to the contemporary regime of a corrupt democracy. Plato consequently believed that the role of the philosopher is to correct this decaying world by returning to the true and eternal ideas (Popper 1945).

On the other hand, Hegel's philosophy of evolution was "progressive". He was a firm believer in the benevolence and "cunning of history".

> This [state of affairs] that the subjective purpose, as the power of those processes, in which *objectivity* is tearing itself to pieces and elevating itself, is keeping itself outside these processes, being the conserved of these, this is the cunning of reason.[9]

The relation between the true ideas and their historical realisation was indeed a relation of imperfection, even according to Hegel, but his conception of evolution was the inverse of Plato's. Evolution, especially as it was reflected in human history, was moving uphill. That is, it was moving from an undifferentiated, unreflexive and non-free state to a state of reflexivity and freedom. The true ideas were not the originator of an almost forgotten glorious past, but the splendid, and luckily fast approaching end point of history.

Whatever the considerable disagreements between Plato and Hegel, they thus share the appreciation of meaning-in-itself as the essence of being. They differ primarily on whether the nature of this conceptual essence is to be understood as eternal immobility or as a transcendental principle of dynamic historicity.

The Triangle of Meaning –
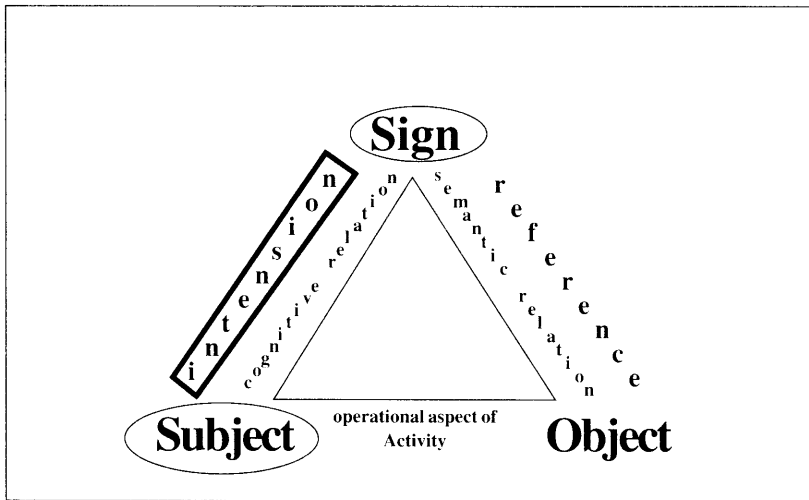## according to Absolute Idealism

fig. 5.2

When we move from the wonderland of absolute idealism to the next position of semiotics, the mechanical materialism of extensionalism, relations are totally reversed.

5.1.2   Extensionalism, the Hypostacy of the Object

In philosophy of language and semantics, the antithesis of absolute idealism is the radical realism found in extensionalism. Whereas absolute idealism emphasises the intension as the true nature of meaning, extensionalism renounces the elusive concept of *intension* on behalf of its counterpart *extension*. The classical concept of *extension* stands for the *extent* of a certain word or expression. The extension of the word "horse" is thus the class of all animals belonging to this elegant species.

In the mediaeval diatribe on the problems of universals (to be treated in section 5.4), the antagonists were (conceptual) realists claiming the reality of concepts and nominalists repudiating this claim on behalf of the sceptical position of reducing the concepts to just names (nomina). Occam's[10] famous principle of

parsimony is, in fact, a paradigmatic expression of extensionalism; a warning against introducing terms without a clear and tangible meaning.

The Triangle of Meaning –
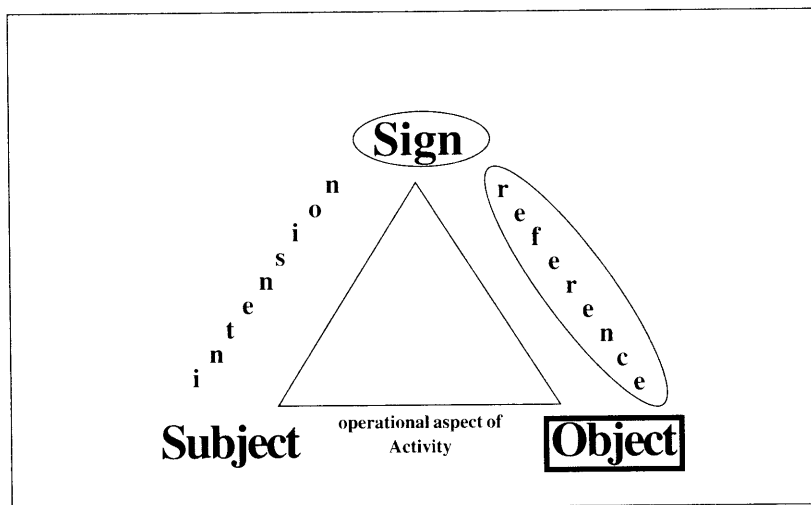## according to Extensionalism

fig. 5.3

The heritage of Occam has been an anti-metaphysical tendency in Western science and philosophy, whose most prominent exponent in the twentieth century was logical empiricism or positivism.[11]

There is, however, a logical contradiction in this tradition – a tension between realism and phenomenalism. The starting point for extensionalistic realism is in the objects, as in the example of the meaning of "horse" mentioned above. There are traces of this position in the semantics of Montague, which will be introduced shortly. Pure extensionalistic realism gives a solid, but rather narrow semantics.

On the other hand, extensionalistic phenomenalism rejects the confinement of its extensionalistic kin by defining the extension as a class of phenomena, that is, sensory given experiences, often called sense data in logical positivism.

This is in a way an understandable position, but the result is an abandonment of epistemic and possibly even ontological realism, as seen in the case of Mach (1900). Thus phenomenalistic extensionalism, paradoxically enough, approaches the position of psychological subjectivism, which will be discussed in a subsequent section.

I shall therefore stick to realistic extensionalism, of which I will briefly mention two representatives, Montague and Davidson.

5.1.2.1   Montague's Referential Extensionalism

Montague[12] has constructed a semantic theory in which the building blocks are the *individual objects* and *symbols* referring to these objects. He then defines the meaning of any predicate term as the class of individuals of which it is true to assert the predication concerned. Thus, the extension of *red* is the assembly of all individual objects that are red. A predicate can also be a natural kind, of which we have already heavily used the equestrian standard example.

He then proceeds to define a *relation* as the constellation of individual objects for which the specific relation happens to be true. Thus, the relation *loves* has as its extension all ordered pairs of human beings (possibly supplemented by higher vertebrates) for whom it is true that each stands in relation to loving the other.

This ascription of meaning to a relation of course can be extended to any degree of complexity. The relation of *between* is for instance a 3-place relation, where the first term refers to an individual object occupying a spatial position with the referent of the second term on the one side and the referent of the third term on the other side. ("The subtropics are between the temperate zone and the tropics.")

I have stressed here the somewhat square extensionalism of Montague, but this is not the whole story. His theory is a good deal more sophisticated than that. He is also an adherent of the modal logic of Kripke (1980), defining the modalities of necessity and possibility by the apparatus called possible worlds. He is thus in a way more of a formalist than a genuine realist. I will therefore return to Montague in the subsequent analysis.

5.1.2.2   Davidson's Verificationistic Extensionalism

Davidson is a proponent of the verificationistic theory of sentence meaning, developed by logical positivism, and Tarsky's theory of sentence truth. Logical

positivism is similar to Frege's theory by defining the *meaning of a proposition* as the truth value it possess, if any.[13] That is, in order for a sentence asserted as a proposition to possess any meaning, it must be either true or false, otherwise it has no meaning; it is plainly *meaningless*. If it has meaning at all, this meaning will be either true or false. The criterion of meaning is now whether the asserter can specify the procedure of verifying his/her assertion.

Tarsky, being a mathematical logician, gave a more precise and, in its content, more substantial theory of sentence meaning.[14] According to Tarsky, when a sentence is uttered by someone in a certain language, this sentence is true in the language used, if and only if we can translate the sentence to a formally constructed language. This language must be of the same type as the one used in *Principia Mathematica*, in which we can refer to a certain state of affairs that happens to be the case. The celebrated example is:

'Snow is white' is *true in English* if and only if *snow is white*.

Davidson's semantic theory[15] dispenses from the restriction of a formalised object language by defining the truth of a sentence uttered as its conditions of verification.

The sentence

'The earth moves.'

was asserted at a famous occasion (and later after being denounced, possibly still whispered by Galilee), its meaning is according to Davidson the way of checking whether it is true or not. I presume that such a procedure was exactly what poor Galilee suggested to The Holy See.

Davidson is evidently quite close to advocating an operationalistic theory of meaning, where the procedure of deciding the truth of an assertion is not just a rather sensible way of solving a disagreement, but, in fact, the very "content" of meaning.

5.1.2.3   The Problems of Extensionalism

We have already seen that phenomenalist extensionalism tends to give up realism, consequently approaching ontological agnosticism or even idealism. Actually, the strong-headed position of objective extensionalism has the same kind of troubles in maintaining its relation to reality. Montague needs a formal language and thus, as we shall see in a moment, ends up in a kind of formalism. Davidson, as his fellow operationalist, can hardly escape a cognitive relativism, because the very criterion of verification makes the objective extension a captive of the cognitive horizon peculiar to the community of the language users.

Now let us take a closer look at Montague's definition of a relation, the relation of *being married*, for instance. According to Montague and his formalistic followers, the relation of marriage is completely *specific* to a specific language, according to a data base giving the identification-numbers of all individuals registered as married. Let us imagine that, in spite of all the efforts in the Ceti-project[16] (Communication with Extra-Terrestrian Intelligences), we should be overtaken by such a Ceti-civilisation engaged in a similar project (e.g., CECIL – Communication with Extra-Centaurian Intelligent Life-forms). Our exo-biological/sociological colleagues from Alpha Centauri, who we assume are of a hermaphroditic life form, would most likely have a hard time understanding our mating behaviour in general and the institution of marriage in particular.

What can the confused Centaurian colleagues from this possible world expect from the followers of Montague semantics? Well, their way of explanation would be to get a printout of all the pairs of identification-numbers that refer to all married couples.

This thought experiment happened to be my first reaction to the formalistic set theory, when I as a student of mathematics in 1960 was presented with this reductionistic extensionalism. However, I was never convinced of the universal truth and only partly of the usefulness of this extensionalism of set theory. In fact, I am still unconvinced today more than thirty years later.

A Davidsonian semanticist would be somewhat more courteous to our Centaurian guests than the set theoretical extensionalist would be. Instead of burying the poor hermaphrodites in a giant list from a data base, the Davidsonian guide would instead hand the Centaurian scientists a technical procedure. This procedure would prescribe how to test whether a specific pair of human beings constituted a married couple or not. Such a procedure might consist of the following steps:

1. check whether they both are adults (above the legal age limit of minors)

2. check whether they are of opposite sexes

3. check whether there is evidence remaining of a certain ritual being performed in the past. A ritual made by an authorised ecclesiastical or municipal person asking the two persons whether they consent to being defined as being *married*, to which they both answered in the affirmative.

4. possibly the procedure should be appended with even more steps to guarantee against anomalies, such as: bigamy; effective, but not legal divorce (for instance in countries with religious restrictions to divorce); and pro forma marriages, in which case, our (in all likelihood) unbearably embarrassed exo-biologist or exo-sociologist would be forced to clandestine investigations of the sexual behaviour of the alleged married couple.

I find this example of some relevance, as the problems of our severely tried CECIL researchers would in fact approach the problems with methods of fieldwork found in cultural anthropological fieldwork.

We have now reached a crucial point. Suppose for a minute that our Centaurian visitors by some chance should be able to assimilate the *mores* of a specific country in the same way as a Terrestrian anthropologist would, but without having the general human origin and the native cultural experiences of such a non-alien field worker.

Let us now imagine that after returning home, this imaginary Centaurian individual (for whom we are blocked by logic in using the personal gender marked pronouns *he* or *she* and by politeness in applying the alternative gender unmarked pronoun *it*) published a learned treatise with a title in the Centaurian tongue corresponding to "About the institution of marriage among the sexually propagated life form of Homo Sapiens on Terra".

However, this successful exo-sociological fieldwork would not accord with the principles of the verification procedure for the truth conditions of the relation of being married, neither at its starting point nor in its results. Rather, the fieldwork would presuppose a most informal intimate naturalisation into the way of life of this Terrestrian people. That includes participation in the very activity of the people studied. By the way, I suppose that we should be a little sceptical about the extent of the Centaurian's participation in the daily life of human beings, and of the alien researcher's understanding of the specific activities or actions outside the area of direct participation.

In particular, we could have strong doubt about the Centaurian's capacity for understanding the sexual feelings and conjugal emotions of human beings in a case as the one just discussed. It is, however, not the possible methodological problems of comparative interplanetary sociology that are the main concern of our story.[17] The moral is, simply, that no explicitly, and in the case treated operationalistically, defined procedure of verification could ever do the job of expressing the meaning of terms such as "being married".

The two tendencies in semantics just introduced, *absolute idealism* and *extentionalism*, are antagonistic with respect to their ontology. The intensionalism of absolute idealism tends to have a denying or sceptical attitude toward the independent existence of an external object world. Further, it also tends to deny the empirical possibility of the true acquisition of knowledge about such a material reality[18] by means of empirical investigation. On the other hand, this school considers intension, meaning-in-itself, to possess such an autonomic existence. The position of extensionalism is a total reversal of this position. Here, the primary existence of an external material world is the ontological basis, and meaning is considered a kind of derivation of this material bedrock.

Their ontological antagonism aside, intensionalism and extensionalism, however, do agree on one important point:

That meaning is grounded in something outside the human users.

Thus, they both are realists of some sort, the intensionalist being a *conceptual* realist, and the extensionalist being a "*material*" realist.

In contrast, the next two main positions in semantics are negative or sceptical towards any kind of realism. Both deny the trustful absolute ontology and epistemology of the realistic positions and both take a relativistic stance.

I suggest that these relativistic positions can be classified as formalism and subjectivism.

5.1.3   Formalism, the Hypostacy of the Sign

The positions to be presented in this section are just as curious as they are influential: the formalist theories of semiotics. In these positions, it is the *sign* that is placed on an epistemological and semiotic pedestal. The naked vehicles of meaning are hypostasised to the distinguished status of consistency and truth.

I shall present two different positions within this major type of semiotics. The first position is *logical formalism*, a school of semantics relying on the rigorous formal systems that are constructed with the intention of avoiding the ambiguities of our "natural" languages.

The second position, *linguistic formalism*, also regards the *structure* of semiotic systems as prior to the meaning produced by these systems, but in contrast to logical formalism (its linguistic relative), it relies on the formal structures of the "natural" languages discarded by the formalists.

5.1.3.1   Logical Formalism

According to logical formalism, we rely exclusively on our own artificially created mathematical symbols. Empirical phenomena can only be trusted when they are ultimately brought into congruence with the logic of the formal signs.

Formalism was originally a position in the theory of mathematics. As a remedy to save mathematics from a deep crisis at its foundation, around the turn of the last century[19], Hilbert(1977) suggested that mathematics should free itself of all reference to the material world of things and the ordinary activity of human beings. The formalistic conception of mathematics was to set this obscure science, the status of which will be discussed in the next chapter, in a protected reservation outside all problems of ontology and semantics. The mathematical activity was then to be understood as only a game. Thus, any part of mathematics is defined by some initial symbols and some rules for manipulating these symbols.

Paradoxically enough, this program of formalism had the impressive, but self-destructive triumph of producing the final formal proof of its own inaccessibility. Gödel[20], some twenty years after Hilbert's launching of formalism, successfully proved that any mathematical syntax sufficiently elaborate to cover the whole numbers would fail in the game of formalism by either being incomplete or inconsistent.

However, through the immense influence of another seminal work of formalism, the *Principia Mathematica* of Russell and Whitehead, formalistic logic and methodology continued its march of victory for several decades, seemingly unaffected by the *Mane Tekel* that was written by Gödel a few years after the publication of Principia. The formalistic tendencies of logical positivism that are quite strong in the young Wittgenstein and in most works of Carnap received a hard blow in philosophy and the anthropological disciplines (such as semiotics) when Wittgenstein (1974) started an impressive self-criticism that was widely spread in the Anglo-Saxon world from the late fifties. Through the technological boost of formalism in the wake of the computer revolution, however, there has been a renaissance during the 80s of formalism in such new scientific movements as Artificial Intelligence and Cognitive science.[21]

The semiotic way to describe formalism is the following: this position reduces semiotics to a discipline solely constituted by syntax, that is, the rules for producing the signs.[22] By hypostacing the formal signs and forgetting about the subject, the object and the mediation of meaning (i.e., the function of the signs), semiotics is thus simplified to pure syntax, the fields of semantics and pragmatics seem to be very redundant.

The attraction of this position is of course that the slippery and dreary problems of the repressed aspects of meaning seem to be totally eliminated for the logically ambitious, but ontologically rather absent-minded formalist.

The Triangle of Meaning –
according to Logical Formalism

fig. 5.4

We see in this diagram a selection of categories and relations rather akin to the former case of extentionalism. There is, however, a crucial distinction. Where extentionalism places the object as its fundamental category and the sign as the derivation produced by the relation of reference, logical formalism reverses this relation by having the sign as its primary and the object as its secondary relatant. The pure expression of logical formalism is found in the model theory of formal logic.[23]

After this lengthy historical introduction, I will now present some examples of formalistic semiotics.

5.1.3.1.1 The Model Theory of Formal Logic

The model theory of formal logic incorporates the following tripartite apparatus:

---

1. **A formal language** defined by a certain formal syntax that provides rules of composition for the constituents of the formal language, guaranteeing that by following these rules only well-formed sentences are produced.

2. **An extralinguistic domain of reality**, basically consisting of a) *objects*, for which *set-theoretic abstractions* can be defined (these abstractions are sets of objects sharing a certain *attribute*, such as the quality of being red), and b) *relations*, which are ordered pairs or ordered sets of a higher dimension (such as, the relation between 3 entities for which the former is an offspring of the latter two).

3. **A semantic function** depicting the linguistic entities of the object domain.

5.1.3.1.2 The Inverse Semantics of Montague

I have already characterised Montague as an extentionalist similar to Davidson. However, he is so inclined to the model theory of formal logic that even his theory tends in the direction of a formalism of the logical type.

The model theoretical apparatus of Montague is basically a predicate logic with a corresponding semantic function:

1. **The language of predicate logic**
   consists of individual terms (names), predicates covering an individual
   term or an ordered set of individual terms and propositions, which are
   syntactically well-formed compositions of the constituents

2. **The object domain**
   consists of a set of individual objects

3. **A semantic function** from 1. to 2.
   with the following rules of correspondence:
   a. each individual term refers to a certain individual object
   b. each predicate refers to a set of individuals (one-place predicates),
      such as "red" referring to the set of objects being red, or a certain set
      of ordered lists of n individuals (n-placed predicates), such as NN
      being the offspring of XX and YY presented by Offspring (NN, XX,
      YY)".
   c. truth-theoretical ascription that defines the truth value of every
      proposition in accordance with the extentionality principle defined
      in the previous section.
      Thus, the sentence "Elizabeth was the offspring of Henry VIII and
      Anne Boleyn" is true if and only if the entities referred to by the
      respective 3 entities were in the historical case in such a relation that
      the second entity and the third entity had mated to produce the first
      entity.

One characteristic of this approach is that the ultimate relation between pure signs and the objects to which they refer is turned upside down. Even if the formalist is a realist in his/her ontology, as Montague[24] is, he or she tends to put the carriage before the horse, or rather tends to put the formal system of signs before the entities of the real world.

Why does this reversal occur? It is, in fact, quite evident to people not trained to think in the calculus of formal logic that the formal rules governing the artificial signs are just representing an extreme example of the way we try to make order in our non-formal experiences of the real world and of real objects.

I consider formalism to be an attempt of the formally trained scientist to escape the uncertainties and ambiguities of daily life and daily language. I also regard formalism as a kind of occupational disease. This can be seen in the professional narrow-mindedness of persons trained in abstracting from reality and living most of the time in the shadowy world of formal structures and calculations.

This reinterpretation of formalism will be considered in the section on the formal sciences in chapter 6.

5.1.3.1.3 The Search for Reality in Situation Semantics

Another very successful approach to semantics originating in formal model theory is *situation semantics*.[25] Here, the scope of Montague's predicate logic is enlarged by ascribing any case of meaning to a situation, in a way somewhat less dualistic and upside down than seen in the logical model theory. A *situation* is a section (in time and space) of reality, and in this section a *state of affairs* and the *utterance of a sentence* referring to this state of affairs are collinear constituents. With this object-utterance parallelism, situation semantics is trying to incorporate even the so-called propositional attitude, that is, mental phenomena like seeing, knowing, believing or doubting something to be the case.

It seems as if situation semantics integrates the missing relatant of the subject, and that it at the same time rectifies the hypostacy of pure signs in the formal model theory. This is, however, hardly the case. The category of the subject is still a mere puppet of formal logic, having only the most rudimentary resemblance to real human beings. Even the very concept of a situation is a rather meagre construction. It consists of a physicalist conception of a state of affairs, inspired by the early positivism, and a Fregean conception of propositions as

the result of semantic composition. Here, the reference of the constituents is embedded in sentences conveying a reference to the situation.

In effect, situation semantics is still confined to the wonderland of formal signs and formal logic.

We can conclude that the position of logical formalism is characterised by two main points:

1. It reduces the subject to a mere appendix of the formal signs

   and

2. It conceives of the object as a picture of the formal signs

5.1.3.2 Linguistic Formalism

The tendency to hypostacise signs is most widespread in logically trained disciplines originating in mathematical logic and having offshoots in philosophical semantics, computational linguistics and other branches of cognitive science. There is, however, another variant of formalism, in which the sign is still the fundamental category, but where the secondary relatant is not the object, but the *subject*. However, the subject, in this case, is to be understood not in the individual sense, but as a *collective* entity being the *linguistic bearer of signs*.

Actually, this collective subject is more or less identified with language itself. Language is not conceived of as a medium used by human beings for communication, but rather the other way round, as a subject using the human being as a means of expression.

The Triangle of Meaning –
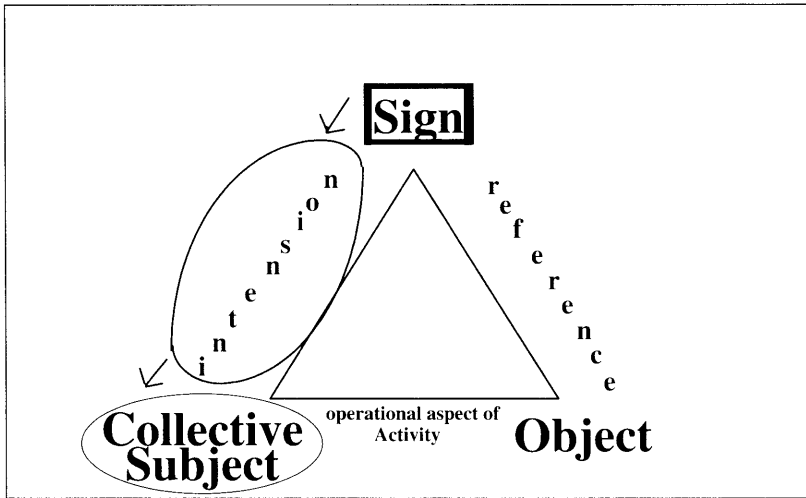## according to Linguistic Formalism

fig. 5.5

The most famous expression of this linguistic formalism is the celebrated Whorf-Sapir[26] thesis of cognition. This is a theory of linguistic relativity that postulates the absolute determination of world perception by the basic categories and structures of the language system.

According this thesis, such decisive categories as *object, time, place, causality, intentionality, and individuality* are all determined by the basic grammatical forms of the specific language used in a given culture. For instance, it makes an important difference whether we have a distinction between syntactical entities corresponding to *subject, verb* and *object*, whether we have a tempus system of *past, present* and *future*, and whether we have a pronoun of *first person singular*.

Whorf's theory of linguistic determination was profoundly based on his field studies of the Pueblos in Arizona. He found linguistic features of the Pueblos' language that seemed strikingly different from the languages of our own Indo-European family. Thus, the Pueblos do not have a tense system of past, present and future. Instead, they have an aspect system, and a distinction between an objective or factual realm and a subjective realm of existence. Talking about

future events is therefore characterised by placing these events in the realm of what Whorf called *subjectivity* or *hope*.

Whorf pointedly expresses his theory of cognition in the following way:

> Every language contains terms that have come to attain cosmic scope of re-
> ference, that crystallize in themselves the basic postulate of an unformula-
> ted philosophy, in which is couched the thought of a people, a culture, a ci-
> vilization, even of an area. Such are our words 'reality, and [...] 'space,
> time, past, present, future'.[27]

In addition, in the same collection of papers, he aphoristically writes:

> Language thus represents the mass mind; it is affected by inventions and
> innovations, but affected little and slowly, whereas to inventors and inno-
> vators it legislates with the decree immediate.[28]

Perhaps I should stress that it is not my intention here to purge myself through a polemic attack on Whorf and Sapir. Not only were they both excellent contributors to the sciences of anthropology and linguistics, but also their hypothesis of the relation between language and our conception of the world is certainly of relevance and value. The idea of this presentation actually is to place this relativistic language theory in a position that expresses a necessary, but insufficient subset of the categories and relations of meaning.

Levy-Strauss' structuralistic theories in anthropology have a position similar to the classic Whorf-Sapir thesis.

Linguistic formalism is a close neighbour to the sociological subjectivism that is introduced below. The similarity lies in the selection of the sign and the collective subject as their main categories. The difference between the two positions, however, is based on their disagreement concerning which of the selected categories should be conceived as the primary and which is the derivative one.

5.1.4   Subjectivism, the Hypostacy of the Subject

In subjectivism, the subject is taken as the fundamental category. The sign is considered a mere extension of the subject, and the object is often ignored or reduced to a purely subjective status.

Of the relations, only intension therefore has any relevance. Reference is not on the agenda, as the object is a rather shadowy subjective phenomenon, and object-oriented activity is certainly not the concern of the subjective positions.

In the previous section on formalism, I presented two very different forms united in their emphasis on the sign, but in disagreement on the elaboration of this category. Logical formalism, one of the versions, is preoccupied with the logical problems associated with the relation between sign and object. The other version, linguistic formalism, is focused on the interconnectedness of language and culture.

In a similar way, there are two quite different versions of subjectivism that are defined by their positions regarding the hypostasis of the subject. This duality is a consequence of a defect in the very structure of the meaning triangle.[29] The category of the subject is, in fact, ambiguous in its representation of the human individual and the human collective at the same time.

In accordance with this duplicity of the category of the subject, there are *two* different positions of subjectivism. The first stresses the *individual subject* as the main source of meaning, the other emphasises society or culture, the *collective subject*, as the bearer of any meaning.

5.1.4.1   Psychological Subjectivism, the Hypostacy of Consciousness

The starting point for *Psychological Subjectivism* is in the individual person using signs and especially in the consciousness of this individual. In this way, Psychological Subjectivism resembles absolute idealism. There is, however, an important distinction: for the latter, meaning is a supra-individual phenomenon, whereas for the former it has a strictly individual status.

The Triangle of Meaning –
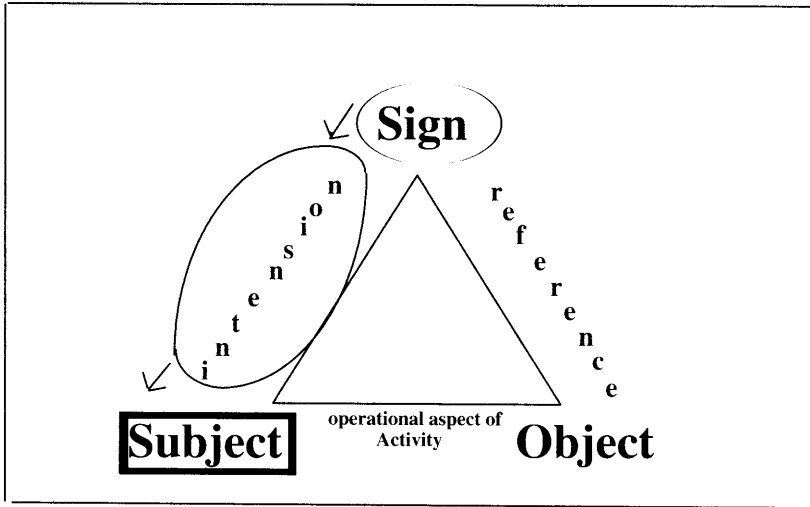## according to Psychological Subjectivism

fig. 5.6

Cognitive or semantic theories that stress the psychological predispositions of processes as a prerequisite for meaning are included in the position of Psychological Subjectivism. An eloquent representative of this position is the psycho-linguist Fodor, who as a follower of Chomsky[30] has returned to the rationalism of Descartes. Fodor thus postulates a so-called *language of thought* as the pre-linguistic foundation of any language, and innate ideas of, for instance, basic semantic categories as the starting point for acquiring concepts. Fodor describes this acquisition of concepts in the following way:

> Nor need a Rationalist deny that the character of the concepts we entertain depends upon the character of the world we live in. No simple concept is available unless it is triggered, and while the function from triggers onto the concepts they release is innately specified, it is the way the world is that determines which triggers we in fact encounter. Our innate endowment determines which world we can, in principle, understand; but only the interaction of that endowment with the stimulations we receive determines which science we actually develop.[31]

As expressed in the latter part of the quotation, this nativistic theory has epis-temological consequences, which Fodor himself, somewhat provocatively, characterises as "methodological solipsism".

Fodor's nativism, of course, is not the only conceivable position within Psy-chological Subjectivism. A quite different version is the subjectivism of the psy-chodynamic schools, according to whom the perception of the external world is largely determined by the working of our unconsciousness.[32] Despite this impor-tant disagreement regarding rationality and irrationality, the Cartesian and the Freudian conceptions are both psychologistic versions of subjectivism.

The antipode to the psychologistic versions of subjectivism is *sociological subjectivism*, according to which the isolated, cognitive pre-wired individual is replaced with a sociological entity as the basic category in the theory of meaning.

5.1.4.2   Sociological Subjectivism, the Hypostacy of the Meaning System

The dramatic consequences of concentrating on an isolated subject are seen in Fodor's description of his solipsistic and nativistic individual. As we shall now see, the sociological version of psychologistic subjectivism is different, but even this antipodal version of subjectivism has rather unpleasant features. In the diagram below, there is again a collective subject, just as with linguistic formalism. Now this category is, however, the defining locus of meaning.

The Triangle of Meaning – according to Sociological Subjectivism
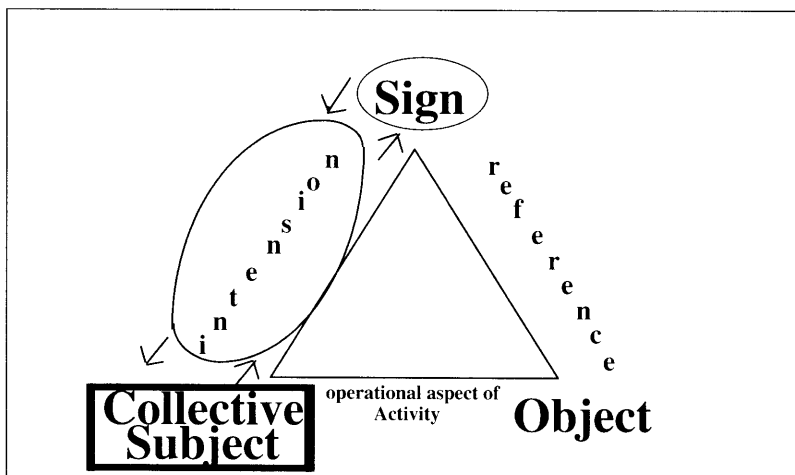

fig. 5.7

Sociological subjectivism has been a dominant tendency in the social sciences during the major part of the twentieth century. Thus, it is represented in the field of sociology through the social constructivism of Berger and Luckman[33] and the ethno-methodology of Garfinkel[34]. In social psychology, Harré[35] is an exponent. Moreover, in philosophy, the transcendental pragmatics of Habermas[36] is, in fact, likewise a version of this position.

The emphasis on society as the producing agent of meaning, of course, is not just an absurdity. In the first chapter of this book, I introduced the conception of the meaning system as a societal product. The weakness of this position, however, in a way resembles the emphasis in the related linguistic formalism on the basic structures of language as the mould of our conception of the world. Thus, all matters of meaning are understood by sociological subjectivism to be confined to the self-contained domain of society. Therefore, even sociological subjectivism is a kind of epistemological relativism, just as linguistic formalism is.

Close kin to sociological subjectivism are the pragmatic approaches to meaning and language. The originator of this semantic position is C. S. Peirce, the founder of pragmatism and semiotics. I willingly admit my great debt to this highly original philosopher, who developed, among other things, the concept of sign and the idea of the triangle of meaning. I also acknowledge the important inspiration I got from Peirce's pragmatic theory of truth, especially in reference to the reality criterion established as the epistemological key in this treatise.

However, Peirce also created a pragmatic tendency in the theory of knowledge and language in the sense that it not only stresses the importance of practical life in the development of human knowledge, but also actually reduces questions of truth and meaning to questions of practical adequacy. This is akin to the pragmatism of W. James, and to normal use of language, as in Wittgenstein's analysis of language.

Peirce sometimes took the step from considering practice as a basic criterion of truth and meaning to practice as co-extensive with truth and meaning. This can be seen in the following passage from one his most influential papers, "How to make our ideas clear":

> Consider what effect, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object.[37]

In the next quotation, however, we find a more careful, dialectical (rather than relativistic) theory of knowledge:

> ...a conception, that is, the rational purport of a word or other expression, lies exclusively in its conceivable bearing upon the conduct of life.[38]

The integration of the pragmatic relation, the practical use of signs, into a realistic context is one of the main objectives of the present analysis of meaning. The two concluding sections are devoted to positions with this objective.

5.1.5   Putnam's Realism as an Integrated Theory of Meaning

In the preceding sections, I tried to demonstrate that all of these positions in semantics and philosophy of language, however incomplete and unbalanced, contain a rational kernel. They all tend to emphasise a subset of the necessary categories and relations of meaning. Their drawbacks are linked partly to their exaggerated promotion of the subset they select, and partly to their neglect of the remaining constituents.

However, within the dominant Anglo-Saxon, analytical philosophy, there is a stubborn exponent for a position deviant from the rest. Hillary Putnam has been the somewhat isolated advocate for a realist philosophy, covering epistemology, philosophy of science, theory of mind, and what is of central importance here, the theory of meaning.

Putnam's career has been a prolonged vendetta against the idealistic and/or individualistic tendencies of the mainstream theories of meaning. He aptly gives a résumé of his criticism in a paper with the classical title "The meaning of 'meaning'":

> Traditional semantic theory leaves out only two contributions to the determination of extension – the contribution of society and the contribution of the real world![39]

Here, Putnam could appear to be a hard-headed extentionalist, but he continues by saying that meaning can neither be identified with extension nor with intension, understood as the concept of an individual speaker.

In a series of *Gedankenexperimente* with a (to my personal taste delightful) flavour of science fiction, Putnam demonstrates the interplay of physical reali-

ty and sociological knowledge production in the fabric of meaning. For instance, he discusses a case of a Twin Earth, an imaginary planet that is supposed to be identical to our own, except in one single respect. On this *dobbelgänger* planet, the liquid on which life is conditional is not water, not the fluid material on which our life processes depend. Instead, it is another liquid having the same phenomenal attributes, at least for our extra-terrestrial fellows, but a different chemical composition. In his discussion on the extension and intension of the two liquids, Putnam introduces his concept of "the linguistic division of labor". According to what he calls a "socio-linguistic hypothesis", meaning is not something attached as a psychological disposition to the human individual. In contrast, it is constituted by the cooperative efforts of different people with different kinds of knowledge and skills.

Putnam talks about this linguistic community as a collective body, and therefore possibly could be suspected as being a collective subjectivist. He evades, however, subjectivism by his determined insistence on a realist epistemology and what he calls the indexicality of the use of words, that is, the necessity of being able to point to the objects and phenomena that we are communicating about.

Putnam combines these two tendencies, realism and collectivity, in the following passage:

> ...the grotesquely mistaken views of language which are and always have been current, reflect two specific and very central philosophical tendencies: the tendency to treat cognition as a purely *individual* matter and the tendency to ignore the *world*, insofar as it consists of more than the individual's 'observations'. Ignoring the division of linguistic labor is ignoring the social dimension of cognition; ignoring what we have called the *indexicality* of most words is ignoring the contribution of the environment. Traditional philosophy of language, like much traditional philosophy, leaves out other people and the world, a better philosophy and a better science of language must encompass both.[40]

Putnam's specific theory of meaning is somewhat eclectic, as well as slightly loosely constructed. He defines meaning as a vector consisting of four parts:
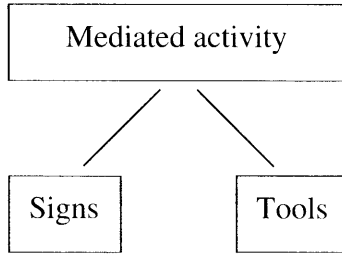
1. syntactic markers (the grammatical class)

2. semantic markers (the natural kind)

3. stereotype (very much resembling the concept of prototype in
    cognitive psychology[41])

4. extension (the scientifically established denotation of a term or
    expression).

The purpose of this section has not been to advocate for Putnam's specific
contribution to semantics, but rather to promote the basic philosophy of lan-
guage of which Putnam is a representative. This realistic and to some extent
even collectivist position in several ways resembles the conception of the cul-
tural historical school, which is the subject of the next section.

5.1.6   The Theory of Meaning in the Cultural Historical School [42]

In chapter 3, I sketched my own conception of meaning as a primary media-
tor of human activity. The basic inspiration for this anthropological approach to
the category of meaning was the work of L. S. Vygotsky. In his posthumously
published book "Mind in society", he actually uses the term "mediated activi-
ty" and then suggests that there are two types of mediators, the tool and the
sign:

> ... the basic analogy between sign and tool rests on the mediating function
> that characterizes each of them. They may, therefore, form the psychologi-
> cal perspective, be subsumed under the use of signs and of tools using the
> schema [below], which shows each concept subsumed under the more gen-
> eral concept of indirect (mediated) activity.

```
        ┌──────────────────────────┐
        │    Mediated activity     │
        └──────────────────────────┘
                 /        \
                /          \
        ┌────────────┐  ┌────────────┐
        │   Signs    │  │   Tools    │
        └────────────┘  └────────────┘
```

(Vygotsky 1978, 54).

Vygotsky actually understood this duplicity of culture as based on signs as well as tools to be a consequence of a general anthropological dialectics of externalisation and internalisation. The sign is attached to the external side of activity, what I call its operational level. Nevertheless, an external operation can be internally reconstructed by means of signs; it can be freed of the external, operational restraints, and thus it can begin to occur internally.

In this dialectics, Vygotsky evidently saw a key to the ambiguity of meaning as a category that belongs to both the psychological and the sociological sphere. The duplicity of signs is also found in the double function of language: that is, language (and any culturally produced sign system in general) has an *intrapersonal* as well as an *interpersonal* use.

Vygotsky gave a kind of manifesto of what was to become the social or cultural historical school in the following passage:

> The internalization of cultural forms of behavior involves the reconstruction of psychological activity on the basis of sign operations. Psychological processes as they appear in animals actually cease to exist; they are incorporated into their system of behavior and are culturally reinstituted and developed to form a new psychological entity. The use of external signs is also radically reconstructed. The developmental changes in sign operations are akin to those that occur in language. Aspects of external or communicative speech as well as egocentric speech turn "inward" to become the basis of inner speech.
>
> The internalization of socially recorded and historically developed activities is the distinguishing feature of human psychology, the basis of the qualitative leap form animal to human psychology.[43]

As the primary successor to Vygotsky, Leontiev has contributed to an activity theoretical understanding of meaning by making the term *meaning* one of his main concepts.

In a way that resembles Frege's famous semantic distinction between the *reference* (Bedeutung) and *sense* (Sinn)[44], Leontiev suggests an opposition between objective meaning (Bedeutung) and subjective sense (Sinn). Leontiev introduces these concepts within the framework of his epistemological reflection theory in the following way:

> ...the meaning is objectively enclosed in an object or a phenomenon that is in a system of given relations and interconnections. It is reflected and fixed in language and in this way gets its permanence. In this way, it makes up the content of the societal consciousness. As the content of the societal consciousness, the meaning is at the same time turned into the individual's real consciousness, which makes it possible for the subjective sense of what is reflected to be at the same time something objective.
>
> The conscious reflection is thus characterised by a specific inner relation between the subjective sense and the objective meaning.[45]

And Leontiev continues:

> The meaning is a generalisation of reality that is crystallised and fixed in its vehicle, the word or the word combination. It is the ideal, spiritual form in which the societal experience, the societal praxis of humanity is kept. The imagination, the science and the language of a given society exist as systems of certain meanings. The meaning is thus a part of the objective historical phenomena. This is the starting point.
>
> The meaning exists however even as a fact of individual consciousness. The world is perceived by humans as a societal-historical being, which is furnished with the concepts and the knowledge of their societal époque that is also limited by these concepts and this knowledge, and whose wealth of consciousness in no way is restricted to the treasure of their personal experiences. People do not acknowledge the world as a Robinson making his own discoveries on an uninhabited island. In the course of a person's individual life, he or she will appropriate the experiences of the earlier generations to the extent that he or she learns to master meanings. The meaning is thus the form in which the individual human being appropriates the generalised and reflected human experience.[46]

This is a sketchy, and until now, quite unelaborated, but inspiring theory of the relation between the collective and the personal status of meaning, that is, the duplicity that resulted in the splitting of the subjective positions.

Leontiev, in fact, develops Vygotsky's vision of the dialectics between semiotic externalisation and internalisation in his concept of meaning. He proposes

---

meaning as externalised sense

and

sense as internalised meaning

As to the question of the reference and use of meaning, Leontiev stresses its triple status:

---

1.   As a necessary precondition (and reflection) of human activity

2.   As an objective expression of the external objects

3.   As an integral part of the culture as a social historical product.

I shall return to the crucial point of the relation between meaning and activity in a following section (5.3), where the contributions of some of Leontiev's pupils will be described. Before going on to the more specific topics of semiotics, I will take the liberty of presenting my own definition of meaning, and thus, according to Leontiev, it must be characterised as the personal sense of the meaning of 'meaning'.

5.1.6.1   My own Definition of Meaning

In the chapter on anthropology (chapter 3), I introduced my definitions of the concepts of sign and meaning. However, these definitions will be stated more precisely here.

I propose that a **sign** is:
>   any object or phenomenon confined to the field of human activity
>   (naturally present to or produced by humans) if and only if it is refer-
>   ring to some object or phenomenon anywhere in the entire cosmos.

In my definition of **reference,** I do not use the extentionalistic position just criticised. Instead, I suggest that **reference** refers to the psychological processes of something being perceived or imagined by a person to be directing his or her thinking toward some other object or phenomenon (at least another aspect of the original sign), and thereby being a mediator or the mediated activity of humans.

I propose that **meaning** is:
>   the functional value of a sign that makes a specific reference
>   possible.

Just as tools have the functional value of making certain object-oriented operations possible, signs have the corresponding functional value of making certain mediations feasible, either intrapersonal mediation in individual thinking or interpersonal mediation in interpersonal communication. However, I will not elaborate on these definitions of sign and meaning here, but will return to my own contribution to the theory of meaning in the subsequent sections on the more specific topics in semiotics.

The survey of positions in the discussion of meaning just presented has emphasised ontological matters. Connected to the disagreements about the existence or predominance of the categories and relations of meaning there are,

however, in addition some classical semantic problems. I will present five of these debates.

The first is the debate on semiotic atomism versus holism. In other words, can meaning be decomposed into constituents or not.

The second debate concerns the relation between the operational aspect of human activity that is seemingly purified from any ideas, and the ideational dimension of human Activity, which often is understood as immaculate, unblemished by mundane operational labour.

The third debate continues the celebrated controversy about the status of universals. In other words, do concepts that do not have a tangible referent still refer to something, or at least have some kind of meaning. Or are they, in fact, meaningless chimeras of the mind.

The fourth debate is dedicated to the logical problems in semiotics related to reference and reflexivity. The question of non-referentiality discussed in connection with the universal is more generally analysed, and specifically I will focus on the logical problem of self-reference.

The fifth and final section broadens these logical problems of reference and reflexivity into a discussion of the relation between semiotics and dialectics; i.e., the interaction between the meaning and the object of meaning is discussed. Likewise, the logical and the causal, historical nature of reflexivity are covered, with a particular emphasis on the case of scientific theories. Thus, the final part of this chapter paves the way for the subsequent chapter about the theory of science.

5.2   Whole and Part in Semiotics – the Hermeneutical Circle

In the presentation of logical formalism, I stressed the hypostasis of the sign. This position raises these mere symbols of the meaning systems to the very substance of meaning. Emptied of any intensional content, and solely related to objective reality through a depiction, the signs are conceived as a logical or mathematical function implemented as a purely formal device. This preoccupation with the syntactical rules of sign, devoid of any immanent meaning, has been heavily propagated in such areas as mathematics, logic, linguistics and lately cognitive science.

There are, of course, reasons for this successful, but paradoxical attempt to solve the meaning problem by the lobotomy-like operation that removes all meaning. One motive is to avoid the subjectivity and scientifically unbecoming lack of precision attached to intension. By sticking to the incorruptible rigour of unequivocal rules, the application of which seems to be elevated above discussion and beyond the doubt of interpretation, this approach is well suited for implementation in computers (e.g., as it is done in AI).

Another reason for removing any meaning is that the syntactical strategy of formalism is a componential approach, an atomistic Semiotics. The problems of subjectivity and interpretative ambiguity are very much related to the integral formations of meaning found in a specific text, or even embedded in the contextual setting of a text. Ultimately, meaning is determined by the totality of the culture in which the text is produced and communicated. I will argue in this section that the features of semantic componentiality *and* contextuality are fundamental aspects of meaning.

5.2.1   The Componential Semantics of Frege

The godfather of logical formalism is Frege, a figure who, perhaps to the surprise of my readers, has not been presented in the systematic presentation of this position. In his analysis of the logic of mathematics, Frege founded a general approach to semantics that was based on a vision of rigorous reconstruction of the workings of propositions.

There are actually three regions of the Fregean universe:

---

1.   the pure symbols, void of meaning, and just objects to some formal rules of composition and transformation

2.   the physical objects of reality

3.   the domain of public knowledge and belief.

The ontological status of regions 1 and 2 and the conception of their relation in model theory have already been discussed, a conception that is to my judgment fatally reversed. The denotational value of a sign that is to be understood as the physical object for which it stands is what Frege calls *Bedeutung*, a term generally translated as *reference*. Frege provides the following example: the term "The evening star" was used in Antiquity to denote the heavenly body that is today known as the planet Venus.[47]

I have briefly mentioned already that Frege, besides his concept of reference, introduces the concept of *sense*, in German Sinn. The celebrated example also given by Frege is that the use of the term:

> "The Evening Star"

can be distinguished from the use of the term

> "The Morning Star"

These two expressions originally denoted two different celestial entities.

Frege took a realistic stance, maintaining that no matter what our predecessors believed, the reference of both terms was one and the same, namely our neighbouring planet on the hotter side of the Solar system. However, there was a difference regarding sense. The two terms did not have the same meaning for the people of the past.

Frege states the relations between name, object, reference and sense in the following quotation:

The reference of a proper name is the very object that it denotes. The notion we have about it is quite subjective: in between is placed the sense, not as subjective as the notion, but neither identical with the object itself.[48]

Frege's componentiality scheme indicates that a sentence includes three kinds of constituents:

1.   **Individual terms**, each having its own reference, such as *Socrates*

2.   **Predicates**, that is, a universal characterisation of something. such as *being a man*

3.   **Logical operators**
     such as negation, conjunction, disjunction and the quantors

The *predicate relation* was a great logical invention of Frege. giving him the assertions that are the atomic kernels of any sentence. The sentence is turned into a proposition, that is, a postulate about reality, and a proposition. in accordance with the Aristotelian rule of contradiction, must be either true or false. This is a logical, but not very satisfying aspect of Frege's theory. In his bottom-up-approach, he wanted to give the whole (that is the sentence) a reference in the same way as the isolated term that was its component. Frege defines the reference of a sentence as its truth value.

Thus the two propositions:

P1: Caesar conquered Gallia

and

P2: 3>2

have the same reference, namely truth. Thus the two sentences are, somewhat contra-intuitively, defined as being co-referential.

Further, according to Frege, this is even the case for the alternative propositions:

> A1: Caesar conquered Germania

and

> A2: 3>4

which both have the same reference, namely falsity.

Frege, however, was well aware of the, for most people, rather unsatisfactory, laconicity characterising this definition of sentence reference. Further, in accordance with his reference-sense distinction, he therefore introduced even the *sense* of the sentence. The sense of a whole sentence is conceived of as the result of the syntactical composition of the senses attached to the single terms; the sense of the object as mentioned in the quotation above, and the sense of the predicate, where Frege makes a distinction between the extention of a concept and the concept itself.[39] The exact total composition of sense was never worked out by Frege.

One important reason for maintaining the distinction between reference and sense on the sentence level is the logical problem found in sentences expressing what are today called propositional attitudes.

When we are dealing with matters of sheer unequivocal reference, it is possible to substitute synonymous terms. For instance, the sentence

> "Venus is the second planet of the solar system"

and

> "The evening star is the second planet of the solar system"

and for that matter even

> "The morning star is the second planet of the solar system"

are all co-referential propositions.

That is, however, a distinction without much content, as these three sentences are, at the same time, equivalent with "*3>2*" and the fact that "*Caesar conquered Gallia.*" The main point, from a logical perspective, is that we can freely make substitutions of co-referential terms, without compromising the truth value of the sentence.

Let us now, however, turn to more subjective matters, to the problems of *sense*. If for instance we take the well-known family saga of Oedipus, the following propositional sentence can be stated:

> 1. Oedipus knew that the woman he married was queen Iocaste.

We can likewise state:

> 2. Iocaste was the mother of Oedipus.

Let us now, however, try the trick of substitution that was so successful in the case of our solar conversation. Let us try then to substitute the term queen Iocaste with its co-referential, the mother of Oedipus:

> 3. Oedipus knew that the woman he married was the mother of
>   Oedipus.

A sentence that according to transformational grammar can be a little more elegantly expressed as,

> 3a. Oedipus knew that the woman he married was his mother.

This sentence is evidently false. Not even Freud would have accepted such a verdict on the already severely hit king of Thebes.

Problems like the non-substitivity of belief-propositions have been met by impressive attempts to solve the problems in logical semantics, such as the situation grammar already mentioned, and the modal logic based on the apparatus of the so-called possible universes. Only a modest amount of progress, however, has been achieved.

Problems related to the substitivity question are dealt with in computational linguistics in connection with the so-called anaphors. These are pronouns in a sentence referring to entities not explicitly defined in the sentence itself, but defined either in a preceding or subsequent part of the text of which the sentence is a part, or possibly quite implicitly understood.

Several colleagues of mine studying linguistics at the University of Copenhagen[50] examined the following examples in an attempt to implement anaphoric analyses in a computer:

> 1. The teacher sent the pupil to the headmaster, because he wanted peace in the classroom.

> 2. The teacher sent the pupil to the headmaster, because he wanted to drink lemonade in the classroom.

> 3. The teacher sent the pupil to the headmaster, because he was to give him a curtain-lecture.

In these sentences, the semantic problems are in a way the reverse of the ones concerning non-substitivity. Without the slightest hesitation and effort, we can here substitute the relevant references for the anaphors. No existing computers, however, are able to do so. Further, I am a firm believer in the somewhat ill-argued position that none will ever be constructed that will have such an ability.

Let us briefly look at these sentences. In the first one, the "he" of the subordinate clause is evidently co-referential with the subject of the main clause (i.e., the teacher). Just as evident is the reference of the "he" in the second example, where the anaphor is now pointing out the pupil. Finally, in the third example, we have in effect not one, but two anaphors, the first anaphor is a *he* denoting the headmaster, and the second is a *him* referring to the pupil.

All this seems rather unproblematic, as the references are quite evident. But *why* is it so evident to us? I suppose the evidence is mostly restricted to people with school experiences of an educational époque that now probably belongs to the past. For people with a different educational experience, it is quite possible that the references of the anaphors would not be evident at all, or they would possibly be evident, but have completely different references.

I can imagine two types of settings. The first is a highly authoritarian system, a Koran school of a Muslim country perhaps. In this case, the sentences might be beyond understanding for the following reason. An act of such impudence as the one performed by the pupil of the sentence would not be totally out of question. *If*, however, such a rude behaviour were to occur, the teacher would not need to bring the headmaster to the rescue, because the teacher would without hesitation take his long stick and slap the offender in order to teach the latter a lesson about proper Muslim behaviour.

I can also imagine modern schools, where at least the second example would be unintelligible, because most kids would be drinking soft drinks all the time, without anybody taking the slightest offence.

I have presented these examples not only because they demonstrate the problems connected with the practical implementation of the Fregean thesis of componentiality, but also because they are well suited to showing the contextual character of all information conveying meaning. All information conveying meaning is contextual, which means that the componential or bottom-up-procedure of logical formalism is, at the very best, an incomplete way of conveying meaning and sometimes even a blind alley producing a total annihilation of meaning.

Stated in a more precise manner, formalism is incomplete when it is not complemented by hermeneutical devices presenting the context that formalism has just removed. Thus, formalism can only function as a specific method of decontextualisation within a context of, at least, implicit contextualisation. This may seem somewhat paradoxical, however, it is a quite logical state of affairs.

I have stressed meaning as an aspect of human activity and the meaning structure as part of the culture of a society. Thus, the context of any piece of information carrying meaning is ultimately *human activity* for which it is a mediator or *the cultural system* of which it is a part.

5.2.2   The Holistic Hermeneutics of Gadamer

The analysis of the divisibility problem in semantics has been subject to a somewhat different, but to a large extent parallel treatment in the discipline of hermeneutics. One leading analyser of the art of interpretation is Gadamer, who describes the relation between part and whole in, for instance, works of art as a *hermeneutic circle*.

Inspired by the German romantic philosophy of art, he introduces this concept in the following:

> Fundamentally seen, understanding is always a movement in a circle, where the repeated return from the whole to the part and back again is something essential. Further, this circle is always growing as the concept of the whole is a relative one and the integration into constantly greater settings all the time has implications for the understanding of the part.[51]

Gadamer also has, however, another characteristic of meaning for the expression "the hermeneutic circle". Supplementing the dialectics of part and whole is the related dialectics of pre-understanding and understanding. This dialectic is one of the cornerstones in Heidegger's philosophy.

The way meaning functions in human activity, thus, has two characteristics, each of them blocking the way for the componential strategy of logical formalism:

1.   the textuality of semiotics

2.   the contextuality of semiotics

Semiotic textuality refers to the top-down-determination by which the meaning of the total text (that is the integral entity of the meaning conveying sign) is influencing the interpretation of the textual components, just as much as we have the reverse influence on the totality by the parts.

Semiotic contextuality refers to the even more far-reaching feature of our understanding being influenced from what is not at all present in the text, not even as an implicit totality of meaning.

Sometime around the mid-1980s, there was an anti-Fregean swing in cognitive science, which had been until then very closely following the strategy of semantic atomism that was the lock, stock and barrel of the original Artificial Intelligence endeavour.[52] For instance, several theorists articulated a polemic against semantic and cognitive atomism, the Fregean faith of early AI (e.g., Dreyfus & Dreyfus, 1986; Winograd & Flores, 1986). Instead, a holistic and intuitionistic philosophy of a decidedly Heideggerian vintage was proclaimed.

As opposed to rules, intuitive gut feelings are recommended, the belief in effective algorithms is replaced by an orderly heuristics, the orderly semantic memory is denounced in favour of episodic recollections and so on.

In a way, this tendency is a somewhat exaggerated reaction. It is Frege turned, so to speak, downside-up.

The enigma of human meaning and knowledge is not solved by a semi-mystical holism and entuitionism. I would like to be the victim of prejudiced entuitionists no more than to be the object of mad scientists or raving computers. That this is not a far-fetched eventuality can be seen in the following passage from Dreyfus and Dreyfus (1986):

Pat Benner quotes an expert psychiatric nurse clinician, highly regarded for her judgment: "When I say to a doctor, 'the patient is psychotic', I don't always know how to legitimize the statement. But I am never wrong. Because I know psychosis from inside out. And I feel that, and I know it, and I trust it". (ibid. 34)

Some years ago, I was involved in a political debate about the legal position of people hospitalised in mental institutions. Since then, I cannot help feeling a

certain chill down my spine at the thought of leaving the question of who is considered to be psychotic to the self-confident intuition of this incarnation of the "big nurse" in the movie *One flew over the cuckoo nest.*

5.2.3 My own Reflections on Part and Whole in Semantics

Finally, textuality and contextuality can be explained using the following model (by decontextualising the complexity according to the custom of formalism), "Context, Whole and Part":

Context, Whole and Part

fig. 5.8

The three levels, *context, whole* and *part*, form the standard hierarchy that characterises how our reality is organised. This is true for ontology, where the context is the physical or ecological field of any entity, and the part is a component or attribute of the entity. It is even a relevant way of describing activity itself, with the context now being the total activity, the whole a certain action, and the part an operation. In addition, as already seen, the hierarchy is even highly relevant for the meaning structures.

When studying something, be it a real entity, a case of activity or meaning, we have the following dialectics to deal with the three levels:

A Model of Dialectics between Abstraction (Serialising) and Concretisation (Deserialising)

Perspective	Concrete	Abstract

Level of Context	Decontextualising → Contextuality → Decontextuality ← Contextualising

Level of Whole	Generalisation → Specificity → Generality ← Specification

Level of Part	Atomisation → Totality → Atomicity ← Totalisation

General Dialectics of Con- tualisation/ Decontex- tualisation	(Abstraction) Serialisation → Qualitative Procedure → Quantitative Procedure ← (Concretisation) De-Serialisation

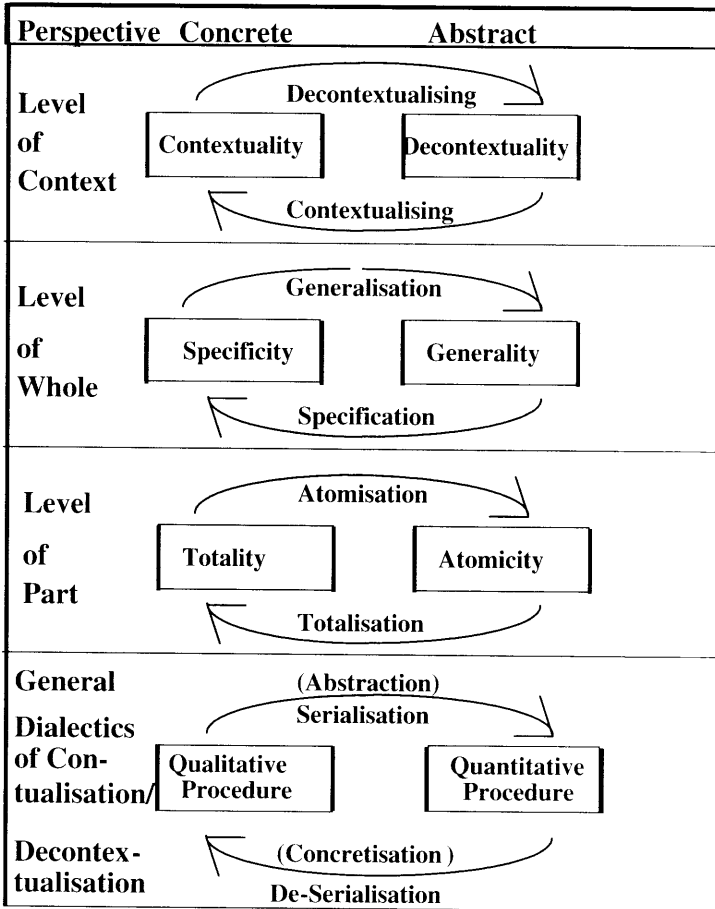**fig. 5.9**

In this model, the three analytical levels are placed as the horizontal dimension. In contrast, the complementary set of seeing something is arranged as the vertical dimension, consisting of a concrete and an abstract perspective.

Starting from the top, we have two ways of dealing with the problem of the context surrounding an object. If we take the concrete set, the objects will be

seen in their proper environment, that is, placed among their neighbouring entities and with relations to these. If we, on the other hand, choose an abstract set, we are abstracting from this context, from the surrounding of the object. Both sets of conceptions are, of course, quite legitimate, and, in fact, complimentary. The relevant choice depends on the specific task in which we are engaged toward the object. Consequently, there is a dialectic of the two sets, and consequently two alternating processes going back and forth between the two sets. These two processes are in charge of **contexualising and de-contexualising**.

On the next level, we are analysing the way of seeing the object as an autonomous entity. Regardless of the kind of object we are dealing with, we can cope with the object in two different ways. On the one hand, we can treat the object as a specific entity, having its own ontological individuality. Using the terminology of Jens Mammen (1983), it possesses a numerical identity. On the other hand, we can consider the object as just an anonymous member of its own kind. It is a specimen of a general category, rather than an individual object. We thus have two sets concerning an object, the **specificity** and the **generality** set. Corresponding to these sets, we have the transitional processes of **specification** and **generalisation**.

Below the level of the whole, we have finally the level of the part. Here we are talking about the components of which the object consists. If we examine the object as a composition made up by these components, we are taking the position of **totality**, which is a concrete perspective. If we, however, take the opposite position, the abstract perspective, we have chosen **atomicity**. Between these dual sets, there are the transitory processes of **totalisation** and **atomisation.**

These three dualities can be understood as perspectives of a comprehensive duality, which I have baptised the **qualitative** or **concrete** and **quantitative** or **abstract** points of view. The **qualitative** perspective is thus the combination of *contextuality, specificity and totality*, whereas the **quantitative** point of view is characterised by *decontextuality, generality and atomicity*. Just as with the three different levels, we have the dual transitions between the comprehensive sets, that is, the process of serialisation or abstraction, when turning from the qualitative to the quantitative set, and the process of de-serialisation or concretisation when going in the opposite direction.

This model of a general dialectics of cognition has, however, a special relevance for the problem of context in semantics and logic, where the tendency of

our contemporary culture has been predominantly to favour the quantitative procedure.

With this diagram, I have tried to demonstrate the duplicity of the strength and the limitation in the atomistic procedure of logical formalism. With the era of the industrial society, there has been an increasingly widespread affinity for what I call **serialisation. Serialisation** is the tendency to deal with the objects and problems of the world as decontextualised standardised systems, totally determined by their composition of a certain set of components or parametric attributes.

That is, there has been a bias towards seriality, towards the decomposition of contextual, specific totalities into decontextualised generalities of atomic components.

The immense success of formalised science, of scientifically-based technology and of technologically-based industry, since the great rationalistic movement of the 17th century, has created the following belief. Truth is found in the deconstruction of the immediately experienced reality into a serialised representation that can be the object of rigorous, formalised logic.

This tendency toward serialisation was, however, certainly not limited to the technical world of rising Capitalism. Even the administrative, political system was moving in the same direction. Thus, in the same manner, people were seen and treated as serialised entities, as just inanimate objects. This fact is documented by the birth of a brand new scientific discipline, namely *statistics*, the etymological history of which shows that it was originally conceived of as a tool for the rulers of states.

In the very same epoch, where rationalistic philosophy, natural science in the modern sense, and mechanistic technology blossomed, the statistical institutes of governments as well as of insurance companies were founded.

The bias toward a serialistic conception of human beings is far more than an imported attitude from natural science into the anthropological field. It is, rather, a logical consequence of an ontological change in the whole fabric of society.

This attitude of serialisation, understandable as it is from the background of scientific, industrial and administrative success, is, however, also an expression of a one-sided worship of formality. The very process of decontextualisation, of serialisation, is totally unthinkable without the complimentary process of contextualisation, of de-serialisation. The very mathematical turn of physics

since Galilee presupposes the implicit, unformalised knowledge of the physical world that is nowadays accurately called *naïve physics*.[53]

Actually, the common sense physics that has been the object of semantic research in information technology is highly sophisticated. In a way, the naïveté should refer to the physicalists, who believe that reality is totally reducible to physical equations.

There is certainly nothing wrong with the attempt to formalise reality. Sometimes, parts of reality are shown to be nicely analysed by a formal model, and we can hardly know in advance whether formalisation will be successful or not.

However, there are two objections to much of the formal thinking that has been characteristic of the last four centuries.

1. the ontological reversal of object and model (the repression of reality)

2. the serialistic bias (the repression of totality)

The first tendency doubts and denies the objectivity of the unformalised reality, and hypostacises the formal model to the standing of a pseudo-reality. This turning the world upside down is demonstrated in the logical model theory, where reality is the model of the formalism.

The second tendency is to doubt the objectivity of unformalised totality, and hypostasise the decomposition as the true reality.

As mentioned in the criticism of the intuitionistic turn of the mid-eighties in cognitive science, I do not see the semi-mystical worshipping of un-analysable totality as a remedy. Rather, I will suggest that the formal (serial) and the informal (concrete) attitudes to reality are dialectical twins; that truth is the result of the interplay between these opposites, as opposed to the unbalanced and blind submittal to only one of them.

Especially in the analysis of a formal model or procedure, it is always recommended that one look for the feedback channel from the model to the original object. This process of concretisation is often implicit, and sometimes even totally invisible, as our ability to understand the world in a concrete way is a strongly built-in tendency.

If we, however, try to ignore the subterranean stream of a deserialisation that helps to keep our world a coherent and intelligible totality, it will just result in a wrong understanding of the formal or serial attitude. It could eventually threaten to dissolve the entire fabric of our culture. This would be a dissolution not only on the level of the formalised description of the model, but even of our very actuality, which is to an ever-increasing extent a human product.

We shall now leave the problem of whole and part. Serialisation will be discussed again in chapter 6, where it is analysed from a philosophy of science.

5.3   Meaning and Operation – The Relation between Communicative and Operational Activity

In the introduction to the concept of activity, the duplicity of afference and efference was emphasised. That is, the dialectics between the pursuit of understanding and performance was introduced. This duplicity is often referred to as the relation between communication and activity. I prefer considering activity to be a super-concept, and instead splitting it into two sub-concepts called communicative activity and operational activity.

5.3.1   The Communication Analysis of Pragmatics

In the preceding sections, we have been preoccupied with signs and meanings as more or less autonomic entities or phenomena to be studied by the discipline of semantics, much in the same way that a flower is the object of botanical investigation.

Most of the semantic positions that have been presented have been primarily dedicated to those immanent attributes and rules of signs that refer to their formal (syntactical), referential (extensional) and conceptual (intensional) qualities. In a way, these points of view are an expression of the fact that signs are *objective* products of human activity.

A perspective of meaning different from these syntactical or semantic points of view is the pragmatic angle, which is the study of the function of signs as instruments of human communication. In pragmatics, the focus is shifted from the immanent signs to the *use* of the signs.

As we have seen, there has been a definite tendency toward a linkage between the classical linguistic approaches based on syntactical and semantic studies and an atomistic conception. On the other hand, there has been a corresponding tendency to a linkage between a pragmatic approach and a more holistic attitude.

This shift from a formal, syntactical approach with a strong atomistic tendency to an informal, pragmatic-oriented view with a holistic flavour is thus found in the philosophy of Wittgenstein, who started as an ardent follower of Frege. However, in Wittgenstein's later works, the use of language was considered the key to any understanding of language.[54]
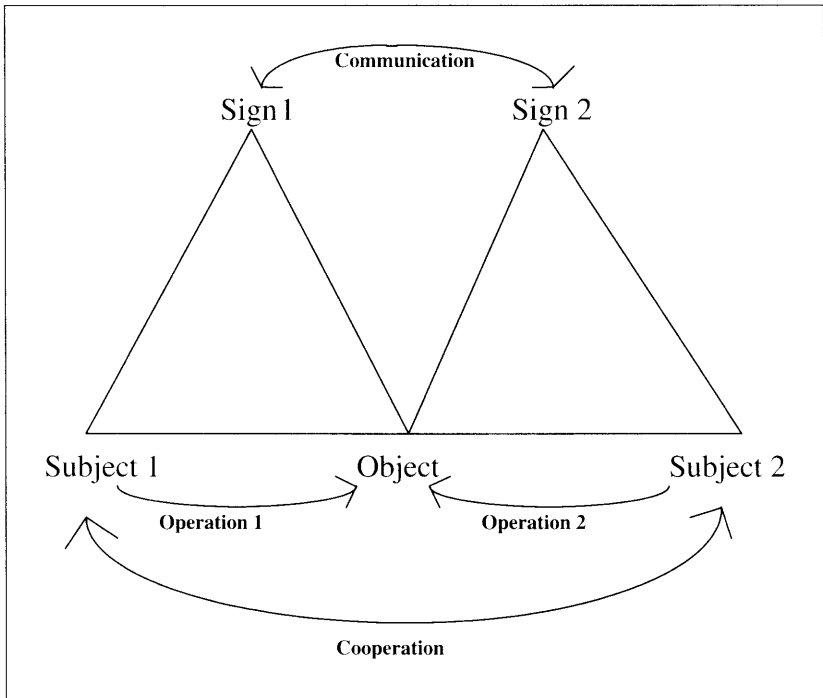
A Model for Pragmatics

fig. 5.10

In this diagram, I have tried to illustrate the extended semiotic scope of pragmatics, as the singular subject of the meaning triangle is replaced by several mutually communicating subjects.

5.3.1.2   The Relevance Theory of Sperber and Wilson

An interesting example of a reasonable compromise between semantic atomism and pragmatic holism is the relevance theory of Sperber and Wilson (1986). Sperber and Wilson were inspired by the pragmatic principles of Grice (1957 & 1975), who also has greatly influenced the universal pragmatic ethics of Habermas.

Grice defines communicative behaviour in the following way:

> '[the speaker S] meant something by x' is (roughly equivalent) to ' [S] intended the utterance of x to produce some effect in an audience by means of the recognition of this intention'.[55]

By the elegant mutuality and reflexivity of his definition, Grice has unveiled some of the basic characteristics of human communication. Sperber and Wilson use this definition as their starting point. Additionally, they include some Gricean maxims as luggage on their pragmatic expedition, such as the requirements of being informative, concise, truthful, reliable, relevant, plain, unambiguous, brief and orderly. Finally, they use the seminal Gricean concept of *implicature*, which refers to the logical presuppositions that are built into a sentence.

The purpose of this short presentation is not to offer an examination of the more technical details of relevance theory, which is a curious and somewhat eclectic hybridisation of the holistic ideas of pragmatism and the atomistic principles of cognitive science. Instead, it is merely to present one of the ingeniously constructed examples from Sperber and Wilson's book, illustrating how a normal conversation is defined within a common context, which is at the same time cognitive and intentional. The following slice of dialogue between two professional trendsetters is a characteristic example:

> Peter: I'm tired.
> Mary: The desert is ready. I'll make the specialty of the Capri restaurant.[56]

From an immediate semantic point of view, there seems to be no connection between the first and the second sentence. Peter is informing Mary about his fatigue, and Mary, apparently somewhat absentmindedly, talks about her dinner plans. The authors' analysis of this little scene from modern urban life reveals, however, that:

1. The actual information that Peter is communicating to Mary is not just that he is tired after a no doubt industrious effort in an important metropolitan office. The crucial point is that this laborious effort has made him too tired to fulfil his duty of making the dinner on the day of the conversation, a day that Peter is scheduled to perform the matrimonial cooking.

2. The reply given by Mary (Peter's wife) is, at first glance, quite oblique in relation to Peter's statement of fatigue. Actually, it is, however, a most affectionate reply, the content being that:
   a. she understands and acknowledges the fatigue of her hard-working husband
   b. she has consequently decided to relieve him of the not insignificant burden of preparing a meal, appropriate for people with demands for high quality living
   c. she, in concord with the convention of her culture, conceives such a dinner as consisting of a main course and a dessert
   d. happily enough, she has something in the fridge that can serve as a dessert
   e. for the main course (a somewhat more complicated matter than the dessert, as the former normally has to be served in a hot condition), she has decided to cook an Italian specialty (the book is insisting on *osso buco*)
   f. this specialty is well known to both of them, as they have gotten it previously in a restaurant called Capri.

The authors' position is polemical to one of the distinctive features of the formalistic communication theory that is based on the work of Shannon and Weaver[57], who suggested that a *code* is used as a transmitter of signal and information. Instead of mechanical coding and decoding, they propose that the processing of signs is based on cognitive *inference*. They skilfully show these inferences to be highly contextual. The context is partly *ecological*, consisting of the actual common surroundings that are the setting of conversation. The context is, however, also the *cognitive* pool that is shared by the communicators and of which they have a mutual and reflexive meta-knowledge.

Having demonstrated the realism and holism of pragmatics that is so refreshing after our long march through formalistic deserts and idealistic swamps, I still have the final job of dialectics to perform.

To perform dialectics, I suggest the following procedure:

The Steps of Dialectical Sublation

1. to show that both types of *two opposite approaches* have a *rational kernel*
2. to show that *both of the opposites* are consequently *incomplete* and in-valid, by hyperstacing their own kernel of truth and thereby denying the complementary kernel of truth of their opponent
3. to struggle for a *sublation* of the partly valid, partly in-valid dual antagonists.

5.3.2 The Contradiction between Interactionism and Instrumentalism in Activity Theory

Traditionally, there has been a long discussion in Soviet Activity Theory about the relation between communication and activity.

We can here distinguish the following positions.

5.3.2.1 The Meaning (Communication/cognition) Eliminating Operationalism

This position emphasises the operational and object-oriented aspect of activity and reduces all communication to these aspects. This tendency was especially strong during the period when Pavlov was raised to primary authority, and the Vygotskyan tradition was accused of idealistic heresy[58] (the concept of sign especially was found the be suspicious).

5.3.2.2 Leontievs' Concept of Communication as an Integrated Category within Activity

In the theory of A. N. Leontiev, communication is not a separate category, but a basic precondition for the evolution of human activity as a necessary means for the division of labour. This tendency has been elaborated on in the writings of his son A. A. Leontiev[59], where the concept of a special *form* of activity is proposed.

5.3.2.3 Elkonin's Theory of the Duality of Interpersonal and Object-oriented Activity

In the developmental theory of Elkonin[60], all communication is understood as being an inherent *aspect* rather than special *form* of activity.

5.3.2.4 Lomow's Interactionistic Version of Activity Theory

Lomow[61] has criticised Activity Theory for neglecting the role of communication in human activity. Lomow's position is, however, on the verge of joining the interactionistic and object-neglecting western pragmatics.

5.3.3 A Proposal for Integrating Communication and Semiotics into the Theory of Activity

I shall now present my own suggestion for an activity theoretical account of communication and semiotics. Using the four sub-paradigms above, I will try to combine the thinking of the second (classical) and the third (dual aspect) positions. The duality of object-orientation and meaning-orientation appears to be somewhat mixed up, both in the western positions as well as in the position within the social cultural school.

I will dissolve the duality between communication and operation into two different relations, both concerning meaning:

The two relations constituting the duality of communication and operation in activity

1. the *hierarchical* relation between *operational* and *meaning*-based (significative) *level of activity*
2. the *co-lateral* relation between the *interpersonal* and the *instrumental aspects of activity*

5.3.3.1 The Hierarchical Relation between Operational and Meaning-based (significative) Level of Activity

If we analyse Leontiev's hierarchical theory of the structure of activity with respect to the function of mediation attached to *meaning*, we have the following picture:

Table for Operational or Meaning-based Function according to Level of Activity

Level	Mode of Function	
	Operational	Meaning-based
Activity	No	Yes
Action	Yes	Yes
Operation	Yes	No

Table 5.1

Activity, being the apex of a complicated endeavour, spread over an often incoherent area of space and time and possibly involving many different people that have to cooperate (and communicate), is in fact by definition an almost *stark meaning-based system*. As already pointed out by Vygotsky, mediation is

a decisive characteristic of human activity. In fact, the integrity of a certain activity is determined by the motive through which the activity is present for the people engaged in it, and the motive in question is exactly a phenomenon belonging to the category called meaning.

At the next level of the activity system, we find **actions**. Actions, in opposition to the *total* system of activity, are confined to a limited and coherent area of space and time, and normally carried out by an individual actor or at most a few cooperating actors. Actions are at the same time **meaning-oriented** and **operational** units. As directed by a proximate, but not yet realised goal, and as a unit of the total activity serving the motive of this system, it is *meaning-related*. As a limited accomplishment that is immediately present and directly perceivable, and as a subsystem implemented in a series of automatic or semi-automatised operations suitable to the specific conditions of realising the goal, it is however also *operational*.

At the base of the activity hierarchy, we have **operations**, the more or less mechanical pieces of behaviour by which an action, and ultimately the total activity, is implemented. In operations, the meaning orientation will normally be absent or at least only implicit. In some cases there has never been any meaning attached to an operation, as it can be of an innate or at least pre-verbal origin.

In other cases, an operation may have started as a meaning-related action, but after having been subject to the **automatisation** or rather the **operationalisation** of routine learning, however, it has lost its meaning quality, and thereby its potential to refer away from itself. This is, for instance, the case with such automatised operations as dialling an often-used telephone number or pressing the keys of a code lock. It is a common experience that when such an operation, consisting of several sub-operations, is one day blocked from the operational memory, there may be no way back to the semantic register that originally defined the values of the sub-operations.

Finally, an operation may still have some potential meaning attached to it, but when on duty, an operation will not make use of this meaning, but rather have a status similar to what Freud describes as pre-conscious. Only when elevated to the level of an action, a promotion that can be given to an operation meeting unexpected complications, will the slumbering meaning relations be awakened.

What I have described here, as the operational, un- or sub-significative status of operation, is typical of what is called *tacit knowledge* in cognitive science.[62]

To summarise, I see the interplay of the operational and the significative (meaning-oriented) level of human activity as one feature of the dialectical relation between pragmatics and semantics in meaning theory.

5.3.3.2   The Collateral Relation between the Interpersonal and the Instrumental Aspects of Activity

In the preceding section, meaning was considered the ground of operation. Many of the problems in the different schools of meaning theory are precisely related to a lack of understanding of this operational ground on which the significative level of activity is based. Granted that human activity is mediated, significative, it is still activity, and therefore oriented towards involvement in the most tangible matters of affairs. The referential function of meaning is thus not just directed toward objects in the understanding of externalistic realism, but ultimately governing the non-referential units of human action, that is, the operations.

The word may proceed the deed as we are told in Genesis, but meaning without operation is no activity, and ultimately scarcely meaningful at all. There can be no significality without operationality.[63]

Other relations built into human activity, however, are often mixed up with the *hierarchy* of meaning and operation, which is the co-lateral complementarity of the interpersonal and the instrumental aspects of activity.

The **instrumental** aspect of activity consists of its object-orientation, that is, the connection to either the entities that are a part of the very objective of the activity, or to the means necessary to carry out the operations that ultimately implement the hierarchy of activity. In both respects, the instrumentality of activity is anchored in external things, no matter whether these things are natural entities or artefacts produced by humans.

The **interpersonal** or **transactional** aspect of activity, on the other hand, consists of its orientation toward other persons, to our fellows with whom we are cooperating in the activity, or with whom we are partners in the transactions through which different products of our activity are interchanged. Transactions thus weave partial activities into a greater activity.

Just as it was the case with the complementarity of **operationality** and **significality**, there is a relation of mutual necessity between **instrumentality** and

transactionality. Human activity, as stressed in chapter 3, is mediated by signs, by tools and by cooperation.

The reason that these two set of relations are often confused is that in both cases we have something extra-linguistic. The *operation* as well as the *tool* or object of activity are opposed to something linguistic, or at least, semiotic, the meaning in the first case, and the communication of the transaction in the second.

The confusion of the two relations will thus result in the *enfolding* of the two-dimensional structure of activity into an ambiguous one-dimensional quasi-relation:

The Two Dimensions of Semiotics

Hierarchic	Collateral Aspects of Activity	
Levels of Activity	Transactionality	Instrumentality
Significality	Area of Communication	Area of Cognition
Operationality	Area of Cooperation	Area of Individual Operation

Table 5.2

The next diagram shows what happens if we enfold the two dimension of semiotics, thus confounding the four distinct categories into just two identifiable conceptual complexes:

The Enfolding of Dualistic Semiotics

Hierarchic	Collateral Aspects of Activity	
Levels of Activity	Transactionality conceived as Significantly	Instrumentality conceived as Operationality
Significality conceived as Transactionality	Confused Area of Meaning	Missing Area of Cognition
Operationality conceived as Instrumentality	Missing Area of Cooperation	Confused Area of the Object

Confused Area   Table 5.3

Missing Area

A great many of the problems related to meaning originate in this incomplete analysis of the semiotic dimensions of activity. Confounding the relation between *significality and operationality* with the relation between *transactionality and instrumentality* results in a dualism between a ghostlike world of objectless meaning and an unobtainable world of "objects-an-sich" void of meaning. From this dualistic starting point, any strategy will lead one astray.

The discussion within Activity Theory about the status of communication expresses, to a certain extent, even an incomplete analysis of the semiotic aspects of human activity. The model here suggested is in accordance with Vygotsky's original conception of the double function of language as a means of cognition and a means of communication, with the even more important point that both cognition and communication are mediators of human activity.

5.4   Individuals and Universals
– The Meaning of Concepts

The birth of the modern theory of meaning can be traced to the famous medieval diatribe about the universal.[64] Starting with the Boetius treatise of the Aristotelian teaching of concepts, a great portion of the topics of philosophical debate during the high and late Middle Ages was the semantic and ontological status of the universals. The outset was whether a universal concept should be understood *in nomine* (as just a name) or *in re* (as referring to a real entity). The adherents of the first position were called nominalists and they denied the existence of anything except individual entities. The supporters of the second position were called the realists, and they argued for the existence of something besides the individual members of a kind.

The Dichotomous Contradiction of Concepts

x_____**x**

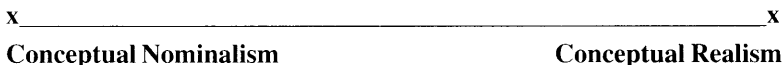**Conceptual Nominalism**   **Conceptual Realism**

fig. 5.11

At the start, there were thus two schools. The nominalists had an individualistic, anti-universalistic ontology, and consequently an individualistic, antiuniversalistic theory of reference.

In due time, however, the long standing discussion produced extreme as well as moderate versions of the original schools as elaborations of the simple dichotomy. The resulted range of positions is illustrated in the diagram below. Here we have a continuum with four positions marked. Radical nominalism and realism are the extreme points, and moderate positions of nominalism and realism are situated in between.

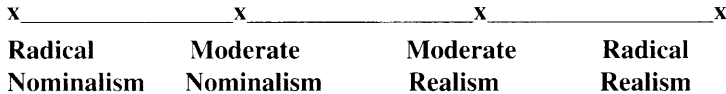## The Full Continuum of Positions towards Concepts

X_____X_____X_____X

| Radical | Moderate | Moderate | Radical |
| Nominalism | Nominalism | Realism | Realism |

fig. 5.12

5.4.1   The Classical Dispute about Universals

5.4.1.1   Radical Nominalism

Radical nominalism totally denounced any meaning associated with a universal. According to this position, there were merely individual horses, that is, the only existing entities (using Aristotelian terminology) were those called secondary substances. These individual things, of course, could be named by their proper names, having a meaning exactly because of the existence of an unequivocal and concrete reference. The concept corresponding to the word "horse", however, according to radical nominalism was void of any sense whatsoever. What Aristotle called primary substance, the species of the horse, had no existence at all. The word "horse" was consequently nothing but a meaningless sound, *flatus vocis*, in the contemptuous characterisation of Roscelin.[65]

The advocates of radical nominalism were the true anti-authoritarian forerunners of rationalistic individualism in transition from the feudal époque to modern individualistic capitalism. A prominent example was the Franciscan

Occam, who was not only a philosophical radical advocating a relentless nominalism and empiricism, but who was at the same time a radical critic of the papacy, advocating the independence of the state, being in this respect a direct precursor of Wycliff and Huss.[66]

Through Occam's theories, the mainstream of Western science has mainly been nominalistic, with a tendency toward the radical version of this school. Actually, the empiricism of Hume and the criticism of Kant can be seen as an additional radicalised nominalism, where even the existence of individual objects is problematised. After the dismissal of equine or canine universality, the expulsion of the individual animals as entities whose existence could be established occured. The dissolution of the *kind* into the *members of the kind* was succeeded by the dismembering of the members into *sense impressions*.

In this grand movement of Western thinking is a dialectics that is simultaneously following an inexorable logic and a paradoxical self-refutation. The anti-authoritarian scepticism that started in the refusal of abstract, often just postulated, entities, and the absolute adherence to the tangible things of mundane existence, ended up in a reinforced scepticism that rejected even those individual entities in favour of only the sense impressions by which they appeared.

However, as foreseen by Kant and demonstrated in cognitive psychology since Gestalt psychology[67], not even the sense impressions have an immediate and basic status on which to found an epistemology. Gibson's ecological theory of perception[68] is a promising attempt to restore a realistic psychology after the destruction of the phenomenalism of empiricism. In addition, the recent development in the study of concepts in cognitive psychology, which will be treated shortly, can be seen as a further restoration that even seems to exorcise the scepticistic denial of natural kinds.

This swing back to conceptual realism thus can be seen as a slow reaction to the self-defeating result of a scepticism that has so effectively eliminated reality of firstly the concepts, secondly the objects and finally even the phenomena.

5.4.1.2   Moderate Nominalism

Moderate nominalism was strongly forwarded by a brave and unfortunate scholar, Abelard, who personally magnified the beginning fermentation in the philosophical fight over the status of universals. Abelard modified the position of extreme nominalism into the moderated position, as he, while denying the existence of a primary substance as such, did not deprive the universal concept

horse of all meaning. While not existing *in re*, the word, however, should not be reduced to a senseless noise.

There was a meaning, although somewhat vague, attached to the word. The concept had an existence *in intellectu*. However, that was the case because there were indeed certain generalities in reality. This is expressed in the following quotation, in which he actually rejects radical nominalism:

> ...there is not a single thing that "man" or any other universal term seems to signify, since there is not a single thing whose sense the term seems to express. Neither does it seem there could be any sense if no subject is thought of. Universal then appears to be totally devoid of meaning. And yet this is not the case. For universal does signify distinct individuals to the extent of giving names to them, but this significative function does not require that one grasps a sense which arises out of them and which belongs to each of them. "Man", for example, does not name individual things, but for the common reason they are all men. That is why it is called a universal. Also there is a certain sense- common, not proper – that is applicable to those individuals which one conceives to be alike.[69]

Abelard's position gives to concepts what a modern cognitive scientist would call a *cognitive existence*, an existence as a *representation*. *Intellectual* status is a consequence of the fact that it is useful to operate with species terms such as "horse" or "dog", a fact that again follows from the presence of certain similarities between these rightfully popular domestic animals.

This brings us to the next position that is characterised by a due quantity of moderation and, literally, common sense (not to talk about universal sense).

5.4.1.3 Moderate Realism

Moderate realism was already represented by Aristotle[70], who not only recognised the universal as useful, but also even argued that the use, and in fact the necessity, of a universal was a consequence of a certain ontological reality of something referred to by the corresponding concept.

This something was not just what modern nominalists would express as the extension of the concepts, that is, the sheer class of individual members. The ontological referent of the universal was the presence of the common qualities of the individual members constituting the concept. The individual members all had some primary substance in common. In this case, all the individual horses were characterised by some equine attributes.

Thus, the species of horse (that was the natural example of the Macedonian philosopher) was an empirical fact. It was an empirical fact as a separate entity, but as an empirical verifiable natural kind; establishing the taxonomic status in relation to other species was one of the most distinct tasks of science.

In the scholastic terminology, this position is called *in rebus*, signifying that the concept exists immanently with the objects that are members of the class being its extension.

5.4.1.4   Radical Realism

Aristotle's teacher, Plato, was a more daring and passionate thinker. Plato was not satisfied with the limited ontological commitment to the existence of universal uniformity among individual entities. For Plato, the real existence was attached to the universals, not to the individual exemplars. He argued that we only know the individual entities through our fallible senses, and that the single exemplars are merely more or less pitiful approximations of their species. In fact, the relation between individual instance and universal is for Plato the reverse of the way it is conceived of in nominalism.

It is not the universal that is a blurred copy of the particular object. Instead, it is the particular object that is a poor copy of form, from which it originates. The following quotation is an argument put forward by an Eleatic participant in the dialogue Sophist:

> That is why their opponents [the opponents of the materialist] take great care to ward off their attack from higher and invisible ground, vehemently contending that certain forms that are grasped by the mind and are immaterial are what really exist; but as for the others' material bodies and their so-called reality, they break them in pieces in their argument, and attribute to them not being but a kind of flux of coming to be.[71]

We cannot find any perfect horse, as all of these animals will be, in some respects, defective in their attempts to represent horsedom. It is therefore only through thinking that we can arrive at the perfection of the ideas. Thus, the forms that we can reconstruct in our thinking represent transcendental entities that are the pure forms existing in a divine realm of supernatural essentiality, elevated over the dire imperfection to which the appearances of mundane life are doomed. This position was denoted by the scholastics as *in re*, meaning that

the concept existed as a separate entity, transcendental in relation to the mundane specimens of its class.

There is, in fact, a tendency of radical realism to behave like the position of radical nominalism in reverse. Where the latter denies the universal of existence, Plato actually denounced the genuine existence of the individual entities.

Now having briefly sketched the classical dispute about the status of the universal, I will proceed to a more contemporary scene. Here, I will start with the mainstream of science and then move to the more esoteric tradition of Activity Theory, that is, the dialectical tradition.

5.4.2   The Status of Concepts in Contemporary Science

The medieval discussion about universals has demonstrated that there are at least three aspects of concepts to be taken into consideration:

3 Aspects of Concepts

1. The ontological aspect
2. The semantic aspect
3. The cognitive aspect

There is of course also the epistemological status that is analysed in philosophy and methodology. However, having used so much space already on the philosophy of language, I will concentrate on the three mentioned aspects, as they have been treated empirically in their specific sciences.

The *ontological* aspect of concepts is the assembly of things, phenomena and essentialities to which a given concept can be supposed to refer. Here the focus is on the problem of the status of natural kinds as they are found in the cosmological and biological field.

The *semantic* aspect is the meaning of a concept as a specific part of the cultural meaning system, the cognitive culture.

The *cognitive* aspect of a concept is its psychological standing, that is, the meaning and the sense of the concept as a part of the consciousness of a specific person.

5.4.2.1   The Ontological Status of Concepts

In the moderate realism that governed the scientific method of Aristotle, the existence of natural kinds was presupposed (e.g., the four elements of physics and the species of living beings).

Granted, even though the specific taxonomy of the founding father of most contemporary sciences certainly had its flaws, Aristotle has been proven correct in his belief in the existence of natural kinds in the cosmological as well as in the biological field.

We have even found the essential qualities defining these kinds. In the case of the elements, it is the atomic structure (primarily the number of protons), and in the case of the species, it is the structure of the chromosomes (primarily their number and the sites of their genes).

There are, however, other keys to taxonomy. We have further developed theories of the genealogy of the natural kinds. Thus, there are cosmological theories that explain the formation process of the elementary particles and their composition into atoms. There is also the theory of the phylogenic evolution in relation to the existing species, as was sketched in chapter 2.

The status of natural kinds of the anthropological field will be left for the last chapter on the anthropological sciences. The main question regarding the ontological status of the so-called natural kinds thus is not whether there are such kinds in existence, but *when* a certain universal is in fact referring to a natural kind, and when it is *not*. We have already discussed the problem of hyper-classes in biology, that is, genera, families, orders and so on.

The biological sub-discipline of cladistics[72] is concerned with these problems. There is, however, another type of kinds, natural or not, that is the reference of universal. These are the classes of entities or phenomena met in practical life. With the possible exception of elements and biological species, most universals are attached to areas of life that are just as confusing as they are real.[73]

If we proceed from the orderly species of biological taxonomy to the natural kinds of pet animals, we get into trouble with concepts referring to creatures such as the harmless rabbit.[74] Even leaving systematic zoology to its considerable problems, and instead looking at the increasingly popular sector of alimentation called "vegetables", we get to a field that is, so to speak, even more muddy. These problems of practical life will be discussed in more detail in the next sections.

5.4.2.2   The Semantic Status of Concepts

Schiffer[75] provides an admirable candid revelation of the total breakdown of the grand semantic science program, a program that has been a dream of his for a major part of his career. At the onset of his work, he had hoped to develop a chain of sciences from the ontological state to which a proposition refers, to the semantic structure of the sentence expressing a proposition, to the cognitive state of the person having the propositional attitude formulated in the sentence.

He convincingly argues, however, that this plan is blocked in all parts of its course and that it eventually ends up in a position of semantic agnosticism that I personally find under the circumstances very understandable, although not quite acceptable.

Schiffer's scheme of the semantic chain, erected and then devastated by his bitter self-criticism, has the following pursuit (which is simplified here and de-technified, as the formulas of analytical semantics are rather inaccessible for lay people with only a general interest in the question of meaning).

I will present an elaborate reconstruction of a minor case of an ordinary use of concepts that, just as in the former example, refers to pet animals:

> "Tanya believes Gustav to be a dog."[76]

Schiffer analyses this proposition in the following way:

1. There is a natural kind of dogs, the species *Canis familiaris*
   (ontological fact using my terminology)

2. There is a natural entity, an animal the dog *Gustav*
   (ontological fact using my terminology)

3. There is a general kind-membership relation, expressed by the
   predicate
   <<individual, kind>,kind-membership relation>
   (semantic fact using my terminology)
   Thus, our case of zoological classification can be formalised:
   <<Gustav,Canis familiaris>,kind-membership relation>

4. There is a cognitive relation *belief* (abbreviated B) that has two
   relatants
   a. the certain person
   b. a certain proposition
   Thus the form of belief is:
   B(individual,proposition)

The final reconstruction is then:

B(Tanya,<<Gustav,Canis familiaris>,kind-membership-relation>).

Schiffer's modern semanticism is very close to Frege's original componen-tial procedure. However, after a painstaking analysis, Schiffer is forced to judge that this procedure is blocked. Every variant ends up in logical contradic-tions. The Schifferean procedure is, in fact, a series of representations. At first, it is a propositional logical representation of the real state of affairs by a certain proposition. Then it becomes a componential semantic representation of this proposition in a rather orthodox Fregean way. Finally, it is a translation from the public and manifest language to the internal working of cognitive proces-ses, that is, the representation called *Language of Thought* or in the argot of semantics, *mentalese*.[77]

These contradictions have their roots partially in the special *Theory of Mind*, which Schiffer's reflections on the *Language of Thought* is based on. Namely, this is the psycho-physical hypothesis that every state of mind is ultimately expressed as a certain physical determinable neurological state. Other sources of difficulties are associated with the idea of semantic atomism built into the Fregean tradition.

Nevertheless, the problem of universals, which at first sight seems to be ideally suited to this semantic school of logical formalism, is stuck in the rigid logic of classes that was originally founded by the impressive member of the class of moderate realists, Aristotle.

The classical definition of universals is that we do have an assembly of individuals whose belonging to a certain class is determined based on certain attributes. Thus, the set of individuals that includes the members of the class is the *extension* of the class, whereas the attributes necessary and sufficient for obtaining membership are the *intension* of the class.

A tripartite serial structure is in close accordance with the logic of serialisation described above. For many cases of every day concepts, such a serial structure, however, is not to be found. Whole areas of modern logic and cognitive science have been developed as alternatives to this traditional class of theoretical understanding of the universal.

Such theories include for instance fuzzy[78] set theory of logic and the prototype theory of concepts in cognitive psychology.

I shall now try to cross the border between semantics and psychology, willingly admitting that this boundary is quite fuzzy and that the areas of semantics and psychology are certainly better suited to the prototypic theory of concepts than to a set theoretical definition in the classical sense.

5.4.2.3   The Cognitive Status of Concepts

There are two features of actual concepts in the psychological sense, that is, as cognitive phenomena attached to the consciousness of an individual person:

1. The Anomaly of Extension

The boundaries between concepts are not necessarily absolute, but are most often gradual.

2. The Anomaly of Intension

The intension of a concept is uniform, that is to say, consisting of a list of qualities possessed by all members. However, it is heterogeneous in such a way that there are certain members that are more representative or typical of the concept, and other instances that, even though they should still be included, are rather unrepresentative or untypical.

The first fact is somewhat formalised in the so-called fuzzy logic[79], where the kind-membership relation is relativised to be described by an analogue rather than a digital function. That implies that there should be a membership-parameter ranging from zero to one, replacing the classical dichotomous logic of *either-or*. Thus, we can operate with an intermediate case, partly belonging to neighbouring sets.

The second fact has been empirically analysed by Rosch[80], who found that the ordinary use of ordinary concepts exposes a rather heterogeneous internal structure, with some instances of the concept being more central and others more peripheral. The most central instance, if one exists, is called the prototype of the concept.

Putnam's concept of the stereotype as a component of the meaning vector, as noted above (p.26), is a view rather close to Rosch's conception of *prototype*.

Lakoff and Johnson[81] have also propagated a metaphorical understanding of concepts that is similar to Rosch and Putnam.

I will now address the problem of concepts from another perspective, from the tradition of another dialectical philosophy. Shortly thereafter, we will return to the problem of the non-classical structure of the ordinary concepts.

5.4.3   The Status of Concepts in Dialectical Philosophy

The somewhat retarded evolution in the mainstream of analytical science from the classical, Aristotelian logic of classes, to the confused state of fuzzy prototypicity – for better or worse – was anticipated much earlier in the tradition created by Hegel. The understanding of concept in this tradition, which I will here call the dialectical, will now briefly be examined.

5.4.3.1   Hegel's concept of concepts

A decisive trait in the philosophy of Hegel is his rejection of the ordinary dualistic epistemology, in which we have to maintain a rigid division between

the object of knowledge and knowledge itself.[82] This dualism is reproduced in the modern analytical semantics in the form of a distinction between the reference of a concept and the internal representation of a concept. It is also found in Tarsky's semantics as a distinction between the object language referring to the matters of fact and the meta-language referring to linguistic expressions.

According to one's preferences, the attractive or repulsive characteristic of Hegelean thinking is that Hegel did not accept this distinction. His dialectical alternative to a dualistic semantics was, of course, idealistic. Even the materialistic correction instigated by Marx was retained, however, as a basic presumption that a concept is simultaneously something of an objective and subjective character, at the same time something external to Mind, and something that is part of Mind (Mind representing here – in the specific manner of the English language – something either individual or supra-individual).

The so-called logic of Hegel was anti-dualistic, in the sense that the evolution of history (natural as well as cultural) is not just an *object to* conceptualisation, but in a crucial way *realised by* conceptualisation. The Cartesian theory of mind is largely a conception of an outsider, a spectator describing an external world that is foreign to the self. The *res cogitans* can analyse *res extensa* in such a way that we obtain a theoretical correspondence, in which the theoretical description is a mirror of external reality.

According to Hegel's philosophy, we have a monistic world where consciousness is a potential quality of being; this is a quality realised in the grand process of *The Spirit of the World coming to Self-consciousness.*

Self-consciousness is here not only something cognitive, pure understanding, but also something of moral relevance, a prerequisite for freedom.

Hegel's scheme was a succession of sublations leading to this self-consciousness:

being, essence, concepts, ideas, spirit

Again, the idea evolves through the stages of

> the subjective (psychological) spirit
> the objective (sociological) spirit
> the absolute spirit

The Absolute Spirit is here the identity of being and thinking that Hegel in his somewhat self-conscious way conceived to be produced in his own philosophy.

The monistic conception of the identity of ontology and logic led to the idiosyncratic Hegelian use of logic as a discipline not only expressing the formal schemes of argumentation, but even the actual forms and processes of reality. Logic is, in fact, more than an expression of reality, it is identical with reality itself.

The cautious reaction to logical formality that started in modern disciplines as non-classical logic, semantics and theories of cognition, was inaugurated with a much more wholehearted radicality in the absolute idealism of Hegel.

The famous dialectics of Hegel is also an aspect of this monistic conception of *sign and referent*, and *meaning and object*, as being identical. According to such an understanding, logical contradiction is not just a matter of form, but necessarily also of content, and as content, a matter of being. Thus, Hegel transferred the contradiction of pure logic to be a state of not just our description of the world, but of the real world itself.[83]

5.4.3.2   Marx's Ideas of the Relation between Historical and Conceptual Evolution

Marx's thinking was so deeply influenced by the Hegelian dialectics that he maintained many of the characteristics of the monism described above. He struggled to transfer this monism from the absolute idealism of Hegel, where the identity of being and thought is ultimately stated under the premises of being rather than thopugt, to a reversed monism, where the identity is an identity of materiality[84].

The most explicit key to Marx's idea of the identity of the actuality and the concepts referring to this actuality is found in the introduction to his "Sketch of the criticism of the political economics".[85]

Here, Marx not only promotes theoretical abstraction, the coining of theoretical concepts as a primary method of the social sciences, he also points out the connections between the subject matter of scientific concepts and the concepts themselves. He even emphasises the parallelism between the evolution of the subject matter (i.e., the object field) and its concepts (i.e., the theoretical field). It is precisely this concordance between the object and the theoretical field that is his methodological criterion for the scientific validity of a specific theory.

Marx is thus free to transfer attributes from the field of theory to the object field. Thus, he uses not only terms like *contradiction*, but also a term such as *abstraction*, as an ontological characterisation of the object field in question, that is, the historical evolution of the economic system of society. For example, money is an abstraction of the economic quality of value already found before the invention of generalised means of economic transactions. The invention of money is an ontological abstraction in that it is expressed in the every day meaning of "money", which is further expressed in Marx's determination of money as a scientific concept.

Further, Marx saw the relations between the objective field, practice and theory, not as a one-way reflection, but as an interaction, where theory is also a way of practical intervention. Marx's analysis of economics is not just a mirroring of an economic system and an economic history, but it is his own intervention towards this system and this history, and thereby is one of the ways the system and history were transforming themselves.[86]

This method of conceptual short-circuit found in the dialectical tradition, not only in Hegel, but certainly also in Marx, has had a strong intoxicating effect, because of which a recommendation and a warning should be issued. One result has been not only a wave of dogmatic and phraseological quasi-theory, but – in a somewhat diabolical agreement with the teaching of the concordance between concepts and reality – even in the dogmatic mismanagement of the great experiments of implementing Marx's theory into the actuality of socialist societies.

In the next chapter on the theory of science, I emphasise that this teaching of the identity of referent and concept is only correct in the field of anthropology. The semiotic difference between the fields of natural science and the field of anthropology will also be a major point in the last main section of the present chapter (on the logical classes of signs).

However, I will not thoroughly examine the status of concepts in the dialectical tradition following Marx, but will concentrate on the Activity Theory that is the focus of this treatise.

5.4.3.3 Dawydow's Theory of Concepts

Dawydow, probably Leontiev's most gifted pupil, developed a dialectical theory of the developmental psychology of concept formation.

Dawydow[87] compares the classical Aristotelian logic of concepts with the dialectical tradition, and argues that both of these theories have valid interpretations in the domain of actual concepts. That is, he suggests that there are two types of concepts. The first type, which can be fairly described using classical logic, refers to the *empirical (quasi-) concepts*. The second type consists of the *theoretical concepts*.

In fact, Dawydow proposes three cognitive stages:

1. The stage of perception
2. The stage of empirical abstraction
3. The stage of theoretical conceptualisation

In the transition from stage 1 to stage 2, the process of *empirical generalisation* occurs, where the general attributes of the individual sensory experiences are subject to an abstraction that is bounded to the plane of the phenomena, and thus leads to empirical conception only. The empirical conception is not yet a true, full-fledged concept, as it can only isolate single attributes as the common denominators of the individual phenomena.

The real development of a concept occurs in the transition from stage 2 to stage 3, where the generalisation is not just an abstraction of single phenomenal attributes that happen to be common to all or most of the individual instances, but an *appropriation of the essentialities* of the complex phenomena conceived by the concept.

In the determination of the specific character of the theoretical concept, Davydow, however, tends to be more lyrical than precise. Granted that there is, in all likelihood, an important lesson to be learned from Davydow's distinction between an empirical conception and a theoretical concept, I have doubts about

the status of this conception of a conceptual distinction. The question is now whether Davydow's concept itself is developed to the theoretical stage, or whether it is, as yet, more empirical in nature.

5.4.3.4 Concepts According to my own Theory of Meaning

In my own definition of meaning, a distinction was made between the *actual use* of a sign and the *general function* of a sign.

---

1. The actual use of sign is a *specific reference* to a specific entity or phenomenon.

2. The general function of a sign is, however, the meaning attached to it, and meaning is the *potential of a sign to serve in the process of a specific reference*.

If we now proceed to the dispute of individuals and the universal, it becomes quite clear that in the case of a specific use of a sign in referring to some specific entity, we are dealing with semiotic as well as with ontological individuals.

In the proposition that Tanya believes Gustav to be a dog, we have such a case of a specific reference to a specific phenomenon. The context could be that Peter, Tanya's newly arrived neighbour, tells her that Gustav has run away, and that Tanya thinks that the individual referred to by Peter is his dog. In this example, it is not crucial whether the Gustav that has gone on the tramp is actually Peter's behaviourally disturbed son (even though I will admit that it is most crucial to Peter). The sign is the ready-made utterance having a certain power of reference in the actual situation. The example also demonstrates that this reference, communicated by the sign, may not be complete or not even correct. The reference is thus the practical use of a concept such as the concept of "dog" in the example above. The concept is not used to refer to a universal, but to a specific individual.

The very process of reference presupposes, however, that the sign has the quality of meaning, that is to say *a general potential of referring*. In addition, this general potential of referring to diverse instances of individual phenomena, of course, only can be possessed by signs carrying a *general* meaning.

Thus, we see a dialectics between the individual reference, for instance to a specific dog or a specific son, and the universal meaning of the concepts "dog" or "son".

This semiotic dialectics between the instantiation of a concept and the generalisation of its individual instances is then an expression of two fundamental semiotic relations:

---

1. the relation between the natural kind and its members in the object field

2. the relation between individualising and generalising in the practice field.

The dispute about the status of the universals, whether they are to be understood (not to say conceived) as something ontological, something pragmatic or something semantic, is thus answered within the paradigm of Activity Theory by a triple affirmative. They are all these things at the same time. In the mediated activity specific to human beings (characterised by the *object of activity*, as well as the *practical implementation* of it, and the *mediation by meaning*), the 3 fields of *objects*, *practice* and *concepts* are integrated and mutually interdependent, at least in the case of the anthropological field, which is our major concern).

The program of elaborating a logic separate from reality, as was the tendency from Aristotle to the great rationalists of the 17th century to contemporary logical formalism, is thus a necessary and most useful abstraction of what is a constant, implicit aspect of human activity. The problem of formalism, however, arises when this aspect of semiotic abstraction is hypostacised to be the whole story.

Nonetheless, this is not the entire tale, as it is vigorously argued in the dialectical tradition. This dialectical tradition is, however, not the whole story either. The tradition of dialectics often reduces itself to a complementary type of hypostasic reductionism in turning its back on the necessity of formal abstraction.

On several occasions, I have touched on the problem of the logical types of reference. Thus, in the previous chapter on epistemology, reflexivity was

briefly discussed, and in this chapter, I introduced the problem of a symmetric or an asymmetric relation between the sign and its referent.

The concluding main section of this chapter will examine these logical complexities of semiotic reference.

5.5 The Semiotic Universe – Logical Classes of Signs

In the many discussions about the status of signs and meaning, a central question has been whether the reference is external or internal. Actually, there are problems with both of these forms of reference. On the one hand, external reference raises the ontological and epistemological question of a reality substantially different from the sign itself. On the other hand, internal reference, the referring of a sign to itself or to another sign, implies the logical nightmare of an endless semiotic circularity.

A related problem introduced in the previous section was the controversy of semiotic dualism or monism. In other words, are there watertight shutters between signs and their referents as proposed by extensionalism and logical formalism? Or alternatively, is there an intimate relation, not only one-way traffic of depiction or representation from the referents to the signs, but even a two-way exchange as described in the dialectical tradition.

I shall attempt to clarify these complicated matters in a way resembling the approach to answering the epistemic question in the preceding chapter. That is to say, I intend to perform a dialectical analysis, where neither of the antagonistic positions is accepted singly, but rather both of them. Both positions are true and false to the same degree. Both positions have limited validity in the sense that inside a specific area, the position in question is correct, while its antagonist is false, and outside this domain of validity, there is accordingly a complementary area where the former position is false and the latter has a limited validity.

I have thus several motives for troubling the reader with these enigmas of semiotics. There are in particular four problems to be treated:

Issues treated in this Section:

1. We shall attack some of the problems of logic and semantics appearing in the set paradoxes, the elimination of which was the aim of Russell's type theory.

2. We shall attempt a localisation of the external referents with which natural science often operates in a quite careless way.

3. We shall, on the other hand, discuss the category of fiction or imagination, where by definition there is no real reference of such a fictitious web of imagination.

4. We shall also point to the area of actual dialectics where meaning and object are in mutual relation to interaction.

All these issues will be stepping stones to the next chapter, which presents the theory of science or rather the theory of the sciences.

I will start with a map to help the reader keep orientated in the following semiotic circumnavigation. It is, in fact, a map of the world or rather a map of cosmos, not differing at all from the maps presented in chapter 2. Thus, *cosmos* is divided into the *field of natural science* and the *field of anthropology*. I shall remind you that although these fields are also the fields of these sciences, they are not to be understood as consisting of the artefacts produced by the disciplines involved. They are instead ontological fields that consist of the phenomena, objects and essentialities to which these sciences are dedicated to studying.

The decisive point in the repetition of this ontological dichotomy is, however, that it coincides with the division between the non-sign area and the area of signs. The *anthropological field* is the field of *human activity*, and human activity is *mediated* activity, that is activity *mediated by signs*. However, this does not imply that the human world, the world influenced by humans, is *only* composed of signs in a dualistic or idealistic sense. Instead, nothing in the anthropological field can exist that is not also a sign, a sign being something with the potentiality of referring to something else.
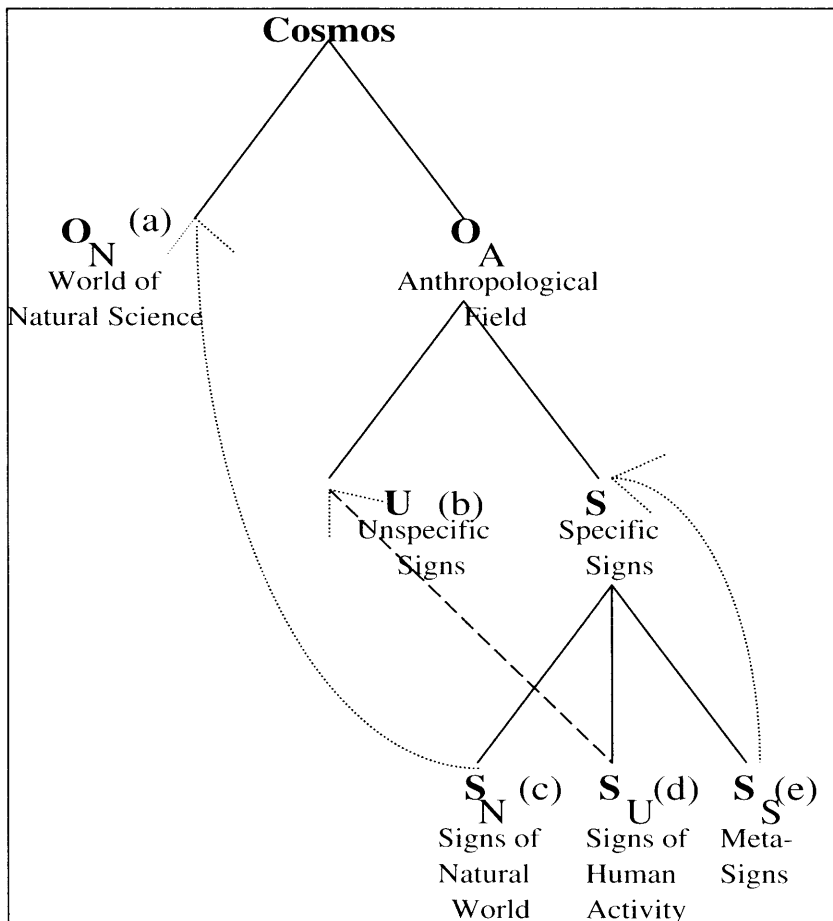
A Semiotic Map of the World

fig. 5.13

5.5.1   A Nature Void of Meaning – The Asemiotic World
of the Natural Sciences

The object field of the natural sciences cannot include signs. Any object, phenomenon or essential characteristic of the cosmological and biological fields by definition does not have the potential of reference.

This is only a brief statement about non-existing semiotics in the part of cosmos that is outside the range of humans. However, it might be necessary to defend this postulate.

This alienation of humans from the cosmos is rather old-fashioned these days, particularly since a new and sympathetic movement toward the re-unification of humans and nature is gaining increasing momentum. I will also acknowledge that many previously evident borders between nature and humans have been brutally transgressed by the ruthlessness of human activity since the beginning of the present industrial era, which now seems to be approaching its end.

My reason for ostracising nature, or more precisely, for placing the fields of natural science outside humanity and thus outside the domain of signs, is that our astronomic and physical knowledge implies, in a way, the reassuring fact that almost the totality of cosmos is not only outside the scope of human influence, but that it will always remains so.

Special relativity, which happens to be one of a handful of theories that has been most convincingly validated through the major part of the twentieth century, implies that the velocity of light sets an effective upper limit for the regions of space-time that can be reached by any process, and thus by any human action. We can therefore draw an area of potential human influence on the part of the universe surrounding our present location. Further, the area around us where we can have any impact whatsoever, of course, is dwarfed by the dimension of the remaining part of cosmos.

This does not mean in any way that the uninfluenced part of the cosmos is inaccessible to human perception, not to say understanding. The inaccessibility has to do with action, not with observation. Nevertheless, we are in the position of the unhappy lover sitting below the window of the beloved. We can only watch, never touch.

The object field of natural science is to be understood in a narrowly defined way. In fact, this field is set by its definition in such a closed manner that I will not be offended if you call it a circular distinction.

An object, a phenomenon or an essential attribute belongs to this field, as far as it is unobtainable for human activity. Thus, just because something is studied or analysed by the natural sciences does not necessarily place it outside the range of humans. The material objects with which we manipulate and the phenomena created by humans are not a part of O_N, the object field of natural science. Instead, they are included in the field of human Activity by the very activity for which they are objects.

The important dividing line, however, is not the distinction between the atoms that are outside and inside the range of human intervention. The decisive border between the natural and the human world, O_N and O_A, is what is *outside* and what is *within* the range of human activity. Thus, the structures and processes discovered by atomic and particle physicists belong to O_N, the natural world. Conversely, the specific artefact (e.g., a nuclear power plant) is a part of O_A, the world of human Activity, which is also called the Anthropological field, and that could just as well be called the field of human Activity.

After this excursion into general ontology, let us, however, proceed to the question of semiotics. The objects and processes of cosmology are of course included in O_N, the natural world, and thus they can never be signs. They are without the potential of referring and will never appear as signs to us.

The galaxies or quasars of outer space, if at this moment they still are in existence at all, are constituents of O_N, the natural world. Further, events attached to these cosmic objects are likewise parts of this intangible realm of cosmos. Nonetheless, how should the astronomical signal be categorised (be it light or radio waves through which we get our information about these distant objects) and where should we place its essential characteristics, the discovery of which is, after all, the objective of scientists working in the *theoretical* field of natural science, in T_N.

These signals, by the very fact of their detection, are included in O_A, the world of human Activity. Nevertheless, are they not governed by the laws of O_N, the natural world? Certainly they are. That is precisely why they are of interest to the cosmologists. These signals, observed directly or, more likely, studied through mediating tools of observation, are actually signs. They are phenomena in O_A, the world of human Activity, referring to the distant field of O_N, the natural world, from where they have actually originated. In short, they are signs with a categorical difference between the field to which they *belong* and the field to which they *refer*.

We have now, however, already left the semiotically barren object field of natural science and, a little, prematurely moved into the anthropological field. This brings us to the real field of semiotic objects and phenomena, the area that happens to coincide with the field of all human activity, which is again identical with the anthropological object field, O_A.

5.5.2   The Significational Anthropological Field –
the Identity of Signs and the Area of Human Activity

Leaving the strange processes of elementary particles and quasars billions of light years away, and probably already for a long time out of existence, we enter the area that is, has been or will be a part of human activity. Just as my definition of the field of cosmological objects, O_N, was admittedly so narrow that the proposition of these matters being non-semiotic might be judged circular, the corresponding definition of the anthropological object field implies that the totality of this field is semiotic. This proposition is likewise circular in relation to the definition, which, however, does not reduce it to an empty logical tautology, but specifies it as a theoretical statement of a definite ontological content.

What does it mean that all object, phenomena and even essentialities of O_A, the anthropological object field, belong to the category of signs? It certainly does not imply that they are at any moment in the position of referring to something for somebody. Neither does it mean that they eventually are going to do so. Instead, the meaning (that is by the way the intended reference) of the proposition is that all that belongs to the field of human affairs has the *potential of referring* to human beings. That something is a sign means that it can be realised as such in the process of actual referring.

Thus, when an American fundamentalist suggests that AIDS is the scourge beget by God for sinful, that is to say sodomitical, living, we may disagree about the specific referent, but not about the very process of reference. I disagree with the bigoted homophobes of the Bible Belt, because I do not believe that the epidemic is a sign of God's wrath. More likely, it is a sign, for instance, of liberalised sexual mores. The parasitic quasi-life form of HIV apparently succeeded in finding its eco-niche in the somewhat careless sexual lifestyle that expanded considerably during the economical boom of the sixties.[88]

However, this problem of interpretation will be addressed in a later section (5.5.3.2.1).

Instead of an indiscriminate discussion regarding signs, which by definition can occur anywhere within the field of human affairs that nowadays coincides more or less with a major part of the solar system, let us proceed to the major division within this confusing multitude of signs. I am referring to the division between non-specific and specific signs. This distinction was introduced in the travel story at the beginning of this chapter.

5.5.3 Specific and Non-specific Signs: the Professionals and the Amateurs of Semiotics

Until now, when talking about signs and meaning, we have been primarily occupied with matters of language or corresponding human signs, that is, with the constituents of the meaning system. The definition of signs just introduced, however, is vastly more comprehensive than that. AIDS, although hardly of divine origin, is neither a human product, nor a part of what I have called the meaning system. The liberal inclusion of the totality of the field of human affairs into semiotics therefore necessitates a subsequent division of this unorganised plethora of what are only signs, in the vague sense that they can eventually be the starting point of the process of referring for some human individual.

The anthropological field, O_A, as the grand field of semiotics is therefore dichotomised into two subfields. The first subfield is a small, rather compact field of genuine signs; it includes signs in the narrow sense of all phenomena and objects that human beings are producing with the specific intention of referring. The other subfield includes signs in the broad, non-specific sense; these are objects and phenomena that eventually have the unintended effect of referring to something for some person.

The first, narrow field refers to specific signs, to be symbolised by the letter S (standing not for sign, but for *specific*). The second, broad field includes the unspecific signs, and is denoted by the letter U.[89]

5.5.3.1 The Unspecific Signs – Unintended Reference

The second subfield of signs thus includes the semiotic amateurs, the unspecific objects and phenomena that either are not produced by humans or, if man-made, are at least not intended to be used for reference. This unintended reference may be quite accidental, as a sheer side effect of an artefact or spontaneous human action that, at a certain occasion, comes to function as a sign for something.

Thus, those signals from the galaxies that were discussed above are unspecific signs, and so is the phenomenon of AIDS. In fact, all natural phenomena functioning as signs, by definition, must be unspecific.

The dividing line between the unspecific and the specific signs, however, is not determined by the attribute of having a natural or a human origin. Even human artefacts and processes can be unspecific. Thus, the lights seen by a pilot when approaching a city are unspecific signs of this city. Additionally, an

action, an emotional exposure, or any other kind of human activity, behaviour or even metabolism, can be an unintended, and therefore unspecific sign.

This kind of unspecific sign can be informative, but not communicative (in the sense of the definition suggested by Sperber and Wilson[90]). Since the Antiquities, in the tradition of medicine, doctors have used the word *symptom* to refer to those changes of appearance or function that can be conceived as signs of a certain disease. When Freud founded clinical psychology, he transferred the term, symptom of a disease, to be used when referring to psychopathology as well. That is, the word symptom, formerly understood as the presence of a biological phenomenon referring to another biological phenomenon, was by metaphorical generalisation acquiring a second meaning, that of a psychological symptom. Further, this was to be comprehended as a part of or characteristic of behaviour that was manifest, although generally not known or at least not properly understood by the person being analysed.

Unspecific signs, however, need not be hidden like that. The activity or behaviour of a person can be unintended as an act of communication without being unintended as an act in itself. A great deal of our repertoire of nonverbal behaviour is thus a treasury of unspecific signs.

Actually, these signs are the primary ones in the phylogenic as well as the ontogenic sense. We share this nonverbal register with our pre-linguistic relatives in our evolutionary pedigree, we have this register at our disposition before acquiring the meaning system of culture. Without the precursor of nonverbal communication, we would not have the means of the cultural acquisition connected to the successor.

So-called non-verbal communication has a complicated semiotic structure, where we actually have to distinguish between case 1. and case 2. In the list below:

> 1. the pre-verbal unspecific signs
> 2. the verbal specific signs
> 3. the post-verbal specific signs

Both categories 1 and 3 are non-verbal, but the former refers to the **unsublated old**, and the latter refers to the **sublated old**[91], which is a transformation of non-verbal communication brought about by the creation of language. However, I will not continue discussing the psychologically interesting, unspecific signs, but will proceed to the area of specific signs.

The specific signs consist of all that is or has been done by humans with the intention of creating meaning (i.e., all things and acts with the intended potential of referring). As has been noted, the domain of the specific signs coincides with the meaning system of culture.

We have now partitioned the totality of the universe into three major domains:

1. the object field of natural science, O_N
2. the domain of unspecific signs, U
3. the domain of specific signs, S

This last domain, although more homogeneous than the disorderly collection of all signs in general, is still a composite, and I shall therefore create a new trichotomous division of this domain. This subdivision will be made according to the nature of the referent that a given sign is designating. The referent can belong to any of the three domains listed above. Consequently, the specific signs (i.e., whatever is purposefully produced by humans to refer) can be divided after its termination. This termination has to be O_N, U or S. We can therefore subdivide S into:

1. S_N, the specific signs of natural science
2. S_U, the specific signs of practice
3. S_S, the meta-signs

The (specific) signs of natural science are called S_N, because their referents are restricted to the part of cosmos that is by definition outside human range. In

this way, they actually coincide with the meaning system produced by natural science to describe and explain its object field.

The specific signs of practice are called S_U, because they refer to the unspecific signs, that is, to all those aspects of human life that are not defined by an inherent intension to be engaged in semiotics.

Finally, the meta-signs are called S_S, because they are specific signs referring to other specific signs. S_S is thus the meaning system produced by our semiotic activity, the human activity that has the production and use of the specific signs as its objective.

Each of these subfields of the specific signs will now be introduced.

5.5.3.2   The Signs of Natural Science – the Categorical Difference between Sign and Referent in this Domain

This sub-domain of specific signs is characterised by the dualistic opposition found, on the one hand, in the category of the sign itself, and on the other hand, the category of its referent. In other words, the sign itself, being specific, is a most distinguished constituent of the anthropological object field, but the referent of the sign is something outside this field, and therefore something that is a part of the object field of natural science.

A historical (and partially rational) reason for the dualistic tendency so strongly represented in the semiotic disciplines (such as logic, semantics, theory of language) is no doubt the predominance of the natural sciences in the history of modern science.

I will consequently follow this dualism as far as it is related to the semiotic problems of this specific domain of the meaning system produced by natural science. The dualism, however, should be restricted to this sub-domain alone. In the disciplines of anthropology, it is catastrophically wrong.[92]

Even within the disciplines of natural science certain restrictions are necessary, because of the emergence of technology as a specific type of human activity, intimately connected to natural science, but categorically different from it. This complicated problem will be discussed in the next chapter.

Let us now, however, focus on the semiotic distinction of the category of the sign and its referent in the domain of natural science. Actually, we have to be even more rigorous in our *sign-natural object-dualism* than what is common within the dualistic positions of the philosophy of natural science. The categorical heterogeneity implies that all the signs of natural science are what I call

hetero-semiotic[93], in contrast to the next two classes of signs, which are homo-semiotic.

There has been a widespread, but most regrettable, tendency to identify the *theory* field of natural science, including its signs, with the *object* field of natural science. As we have seen, however, there is a clear categorical difference between the former and the latter. The former is, in fact, a part of the anthropological field, whereas the latter constitutes what is definitely outside this field.

This implies that the very moment natural scientists turn from their referent in nature towards their own activity, for instance towards the problems of their meaning system, they have changed their object from one that is a part of the natural field to one that belongs to the anthropological field.

The knowledge of natural science concerns what is outside the field of human affairs. However, the very domain of knowledge constituted by this endeavour is itself a component, not of the natural field, but of the anthropological field, the field of human affairs.

After having taken a guided tour through the strongly hetero-semiotic field of natural science, we will now go on to the remaining semiotic areas. That is, we will examine the two domains of specific signs having referents that do not belong to the sign-external natural field, but are parts of the sign-internal anthropological field: the major domain of the *activity signs* and the more specific minor domain of the *meta-signs*.

5.5.3.3 The Activity Signs

S_U are the specific signs that refer to common phenomena and objects within the range of human activity. Thus, the vast proportion of the meaning system belongs to this domain.

As noted above, medical and psychological symptoms are examples of unspecific signs. The very terms "medical symptom" and "psychological symptom" are, however, constituents of the activity signs.

Actually, any specific sign referring to something within the field of human affairs is an activity sign, as long as it is not specifically pointing to another specific sign. Thus, the part of the meaning system consisting of signs addressing any object, phenomenon or essentiality that is not a part of the meaning system belongs to the activity signs.

Whenever we have to talk about something that is going on or that is produced within the field of human affairs, signs of activity must be used. The

activity signs are not just referring to human practice, but they are themselves a necessary and integral part of human practice. They are, in fact, the primary semiotic mediator of this activity.

This is their function, and this is their limitation. Exactly because of their intimate relationship to the context of human activity, they generally are not suited to being abstracted from this context. They are semiotic captives of a specific human activity, and they are generally not suitable for the freedom of a decontextualised reference. The implication of this is that many of the problems, not only of semiotics, but of all areas of anthropology, turn up when we discuss the precise reference of activity terms, and the validity of such references. This is the focus of the following sub-section.

5.5.3.3.1 *The Problem of Fictitious and Misleading Signs – the Power of Human Imagination and the Abyss of Mistaken Reference*

Two of the most difficult problems in semantics are caused by the phenomena of fictitious and misleading signs. The first problem is related to terms that are apparently without a reference. The second problem concerns terms that although in the possession of a referent, are not referring to the denotation that seemingly is built into the meaning of the term, but instead to a referent that is different from the former.

To clarify, I will use the term "unicorn" as an example of the first category, and the term "witch" as an example of the second category.

A very prominent inhabitant of the domain of semiotics is the sign "unicorn", a term that seems, however, to be completely devoid of any actual reference. Further, this fabulous animal, waiting patiently not only for a true virgin, but probably with even greater impatience for a decent referent, is not the only example of such a flawed semiotic status. The same is true for inhabitants of mythology and literature.

Nonetheless, I started the present semiotic voyage with a definition of activity terms as having the non-specific part of human activity as their referents. Thus, the existence of a subsection of fictitious signs without any referent is certainly an important contradiction. What then are we to do with this problem that is, in fact, just another expression of the dread of these semiotic monsters.

The whole apparatus of possible worlds has been erected to domesticate these ogres of semiotics, a panacea I find to be even worse than the problem in the first case.

What then can I offer?

Well, the very category of fiction is far from being just a peculiarity of human activity, but is a central and essential part. It is exactly the ability to imagine what is not the case that enables mediated human activity, which is elevated above the activity of other animals.

In fiction, the general creativity of human activity is isolated in a subfield of the meaning system. It is this potential of isolating the meaning system from its referents, of separating the level of meaning from the level of operation, which distinguishes human activity.

In the normal mediation of signs, the meaning relatant is only stretched somewhat from the other relatant, the operation and the object of activity. The anomaly of fictitious signs, however, is that in this case, the stretching has led to a break that is seemingly beyond repair.

I think that these problems of non-referential reference are, however, a consequence of a problematic analysis of these terms. Let us therefore start afresh with our unsettled unicorn. What we have, then, is a certain sign belonging to a meaning system that obviously has old myths as its reference. This is, however, a fossilised degeneration of the unicorn as a meta-sign. Originally, people believed that unicorns roamed around, but not in the theoretical field of semiotics or in the fossilised field of mythology. They were to be found in the dark and dangerous forests, haunting the small medieval villages surrounded by these forests, and only to be pacified by the costly resource of a true virgin.

Let us examine another piece of fiction, a character of Shakespeare, such as Hamlet. Whatever its historic roots, this creation is evidently a product of the great author. How can we then address the problem of reference brought about by the fertile imagination of this poet? Literature is a specific kind of human activity, an activity having the form of *play*.[94] Thus, literature has no *external objective* and no *external object*. It is reflexive in the sense of being its own purpose.

Therefore, the signs found in literature do not have any external referents. It would be just as futile to look for the referent of Hamlet as to search for a material object that could be the outcome of a football match (if not a cup match). The play may have tools, but not an external goal to which the play is referring.

How can we derive a solution of the missing referent from this understanding of the activity of fiction as a specific self-motivated production of meaning? First, it is necessary to look at the seemingly innocent term, "referent". In

fact, in this chapter, I defined the related term "reference" as the potential or actual semiotic process of a phenomenon or an object pointing toward something else. This something else is then what the term "referent" is referring to. *Something else* is thus the referent of "referent".

Many semiotic problems originate from a mistaken simplification of this referent. There are at least two complications that we should consider:

1. the referent need not be a distinct object, but can also be an intangible phenomenon or essentiality of an object

2. the referent related to the *general meaning of sign* is not necessarily identical with the *referent of the instantiated sign*

We have to examine in particular the second complication. As already stated in the section on universals, the general referent attached to the universal "dog" is an uninstantiated dog of the highly loved species *canis familiaris*. The referent of a specific case of applying the sign "dog", however, typically will be an instantiated member of this kind, such as Gustav in the example used.

Thus, there is a necessary ambiguity built into the scope of reference for most signs. If this was not the case, they could not function in all the changing situations where they are actually used. This implies, however, a remarkable versatility of most "natural" meaning systems, where the adjective "natural" is to have the rather unequivocal meaning that is antonymous to "formal". The precision of the use of a "natural" meaning system does not come from the unequivocality of its singular signs, but from the sophistication of composing a text that is adequate in the practical context of which it is a tool.

This multitudinous equivocation and ambiguity of signs is exactly one of the decisive functions of invented meanings found in the literature (verbal or oral) of fiction. Imagine a parallel universe, where Hamlet was a real prince with the tragic fate of a murdered father, a faithless mother and a treacherous uncle, where Shakespeare was a spy serving the kingdom of England and the text "Hamlet – prince of Denmark" was a piece of information about the entangled relations of the Danish court. In this universe, a well-defined and unambiguous

referent of the sign "Hamlet" would exist, and the text of which this term would be a constituent would also have a specific practical function in the specific type of activity known in politics as "information".

However, this is not the case for the text of the tragedy Hamlet and its specific term of the same name.

In the fictive example of the parallel universe, "Hamlet" would have been a sign of the class S_U, a specific sign having as its referent a person who would himself be an unspecific sign. The term would have been a normal activity term; a term having a mediating function in human activity. It is precisely the mildly heterosemiotic structure of the activity signs that allows us to escape the abyss of equivocation. There is, in fact, a certain distinction between the sign and its referent in this semiotic class.

This distinction is, however, not present in the case of fiction, where the signs in many ways are more similar to the reflexive signs that will be discussed shortly.

Now that the problem of fiction has been addressed, we will now turn to the problem of misleading signs. The problem associated with the term "witch", in a way, is the reverse of the problem with "unicorn". In the case of "unicorn", we were vainly looking for a referent. In the case of "witch", we actually do have a referent, but we feel that we should not.

The embarrassment regarding the term "unicorn" or the fictitious leading character of Shakespeare's tragedy is that we are unsuccessfully looking for a tangible referent. In the case of the term "witch", it is, however, the other way round. We know that the belief in witchcraft is an abominable expression of superstition (and even a type of superstition that is very repressive to woman). How can we, as enlightened and unprejudiced persons, come to terms with the fact that many tens of thousands of human beings (the majority actually were female) were persecuted and executed during the 16th and 17th centuries?

We are evidently caught in a logical dilemma, having (so to speak) the following two horns:

1. either we deny the existence of witches and then have a (dare I say
   devilishly) hard time accounting for the victims of either the
   ruthless inquisition of Catholicism or the misogynous zeal of
   Protestantism

or

2. we admit the existence of the victims of witch persecution and then
   we have an even harder time getting this admittance to agree with
   our denial of witchcraft

Could there possibly be a third way that allows us to escape both horns of the
dilemma. I will try an analysis somewhat in line with the preceding examina-
tion of fictive referents.

Even in the case of "normal" activity-signs, S_U, which is the category where
"witch" should be placed, there can be, and there often will be confusion and
disagreement about reference. As often pointed out, the activity signs have ulti-
mately our activity as their field of reference. With an activity term, we are thus
mediating our activity by relating one part of the activity to another part, which,
for instance, is placed somewhere else in time or space.

In the case of the concept *witch*, there were, at the time when the concept had
its practical use, several activity contexts that were interacting. Firstly, there is
some evidence for a heathen religious practice of a fertility cult. Secondly,
there was, no doubt, a general practice of "wise ladies" serving as lay doctors,
midwifes, who possibly also helped to limit the number of child births by birth
control and induced abortion. Thirdly, there was the dread of black magic
among the superstitious population, for instance exerted as the "evil eye" by a
woman with a strong physiognomic appearance. Finally, the church (Catholic
and Protestant in unholy agreement), because of the inherited Mosaic prohibi-
tion of witchcraft, produced the powerful myth of the diabolic and perverted
alliance between Satan and lustful and evil woman who were to be persecuted
as witches.[95]

Thus, in the case of the term "witch", the problem is not that a referent is
lacking. In fact, we have a quite normal congruence between an object of refer-

ence on the meaning level of activity and the object of a most tangible and dreadful action on the operational level. It is, after all, mainly because of these operational consequences for the poor women that we cannot deny that the term has a referent.

There certainly was a referent; the term had a quite tangible denotation. The problem originates, however, in the general unequivocality of reference. Besides referring to the specific person placed on the top of a fire, the term "witch" can refer to phenomena attached to such a woman or at least believed to be so.

In fact, besides the simple *denotation* of a term, there is often a much more fluid surrounding semiotic area called *connotation* that is also a part of the meaning of the term. That was, in a way, what Frege was attempting to describe in his distinction of referent (Bedeutung) and sense (Sinn).

In my opinion, there are two ways of dealing with the semiotic problems that originate in the clash between different meaning systems. The first strategy is relativism and the second is realism.

The strategy of relativism denies the possibility of making a decisive choice between interpretations in a disagreement. That is, for instance, the consequence of the relativistic positions of linguistic formalism and of sociological relativism. Often these relativistic protagonists are talking about different worlds or universes, just like the modal logician who, however, will generally stick cautiously to the different worlds as a technical tool.

The strategy of realism, on the other hand, takes on the responsibility of attempting to provide a verdict about whether a certain reference is correct or not. Because, of course, a reference need not be correct, either its denotation or its connotation can be misleading and misled. In natural science, such disagreement is part of the game, and in the next chapter, we examine how attempts are made to solve disagreements in this field. The question, however, is even more complicated when we are dealing with the activity signs. They are confined to a certain context of activity and to make a comparison of contradicting meanings implies, therefore, a comparison of contradictory contexts of activity.

In the case about the witches, we have precisely such a contradiction between, on the one hand, the activity system that existed in the late Middle Ages and in the so-called era of rationalism and, on the other hand, our contemporary system from which we are talking now.

Another example from theology that we can examine is the term "The holy spirit". Within the Christian meaning system, this is supposed to refer to a divine entity, which is, as decreed by the dogma of trinity, at the same time an individual agent and an integral part of the one and only God. From my atheistic, activity theoretical point of view, there is no room in my ontology for a specific area of divinity. Therefore, the term "The holy spirit" is to be understood as an activity term, a term used in the specific activity of religious life.[96]

In this analysis, the term does not refer to what is believed by the Christian congregation praying to such a supernatural entity (or possibly semi-entity or even a third-of-an-entity). The correct referent is the religious phenomena that are actually present during prayer and worship.

The verdict that the right interpretation of the term "witch" is the one made by us and not the one of the "Hammer of witches", because we are the judges in a position of enlightenment, has been correctly criticised as ethnocentrism. The question for an adherent of a critical realism then remains whether there are any non-circular, ethnocentric criteria to judge whether a reference is misled or not.

5.5.3.4   The Signs of Reflexivity – Meta-signs

In this last subsection, I will discuss meta-signs, a category of signs that is just as troublesome as the signs without a specific referent or with an ambiguous or a misleading referent. This category includes signs that are specific, just as were the signs in the domain of the signs of natural science and the activity signs. However, this category consists of the signs that not only in themselves are specific, but whose referent is also a specific sign.

In a previous section, I introduced a distinction between heterosemiotic and homosemiotic signs. S_N was characterised as strongly heterosemiotic, because the referents of these signs are totally outside the area from which they originate. S_U is only mildly heterosemiotic, because its referents belong indeed to another field than the signs themselves. However, the field of the referents, being unspecific signs, is not that much different from the neighbouring domain of the specific signs. In both cases, we can distinguish between sign and referent from their categorical status alone.

However, meta-signs, S_S, are homo-semiotic.

The meta-signs are not necessarily autological, in the sense of Grelling, but all autological signs are homo-semiotic, and homosemioticism is a quality that is complicated enough.

The meta-signs appear for instance as constituents of what Tarsky[97] called meta-languages. They also appear, however, in unformalised languages. Here they can cause so much confusion that logicians like Russell, Grelling and Tarsky have instigated draconian procedures against any attempt of self-reference, by confining them in a state of captivity, either as members of meta-languages or as compulsory residents of a restricted logical type.

What then is the scandalous behaviour of the meta-signs? The disorderly aspect of their semiotic function is related to the cumbersome paradoxes attached to their potential of self-reference. The other classes of signs, being mildly or strongly heterosemiotic, do not have this potential of pointing to themselves (at least not in a logical flagrant direct manner). This, however, is precisely not only the possible, but sometimes even the actual behaviour of the meta-signs.

Let us look at one of the most common members of this class, the seemingly innocent word "word". In fact, the introductory sentence before the present one reveals the scandalous affinity for self-reference of this particular sign. In this sentence, the word "word" is used as an attribute of itself. This fact of the predicate logic of this term shows that it has a very peculiar reference. It has a reference that is not only homosemiotic, but in fact, autological.

I will define *autology* in accordance with Grelling[98] to mean:

> That a sign is a member of its own extension.

If we examine our little sign "word", it is in fact referring to *words*. The term is a concept, a universal whose functional value is that it can refer to any word. Thus, it can even refer to itself. And, this scandalous violation of decent semiotic conduct is made in the following proposition:

> The word "word" is itself a *word*.

A reader not brought up with the taboo of self-reference that was issued by Russell may indeed ask why it is such a terrible sin to make use of a self-referring sentence. Well, the whole orderly dualistic world of formal logic is indeed severely threatened by any case of self-reference. Self-reference is really boiling over with perpetual regress and self-contradiction.

The typical case is the paradox of the Liar.

Here, the antique Cretan Epimenides makes the following disastrous proposition for all logicians to consider:

(I, the Cretan Epimenides assert that:) All Cretans are liars[99]

The tantalising attribute of this assertion is not that we can be justifiably in doubt about its truth or falsity. The crucial question is not whether Epimenides or all the inhabitants of the delightful island of Crete should be characterised as either mendacious or truthful. The eventual mendacity of one, several or all the Cretans is actually not the topic at all.

The semiotic scandal is a consequence of the human meaning system itself. And, that is revealed by the fact that this enigmatic Epimenides is, after all, a fictive character, who cannot be subject to any police interrogation, lie detector test or mental exam anyway.

The dilemma in which we are caught is demonstrated by first supposing the proposition to be true, and second examining it under the presumption of its falsity. In either case, it turns into a hopeless self -contradiction.

Supposing the sentence to be true, it must refer, based on its autological construction, to its originator, Epimenides, as he happens to be a Cretan himself. Thus, the verdict of the sentence is that he, the asserting person, is a liar. However, by the very supposition of its truth, the sentence implies its own falsity.[100]

We are not much better off starting with the alternate supposition of the falsity of the proposition. In that case, some Cretans are bound to be truthful. Suppose that Epimenides happens to be one of these. Further, by the autology of the sentence, he tells us that he is himself a liar. Again, we are caught in a vicious and perpetual self-reference. For either he is truthful in the assertion, but truthful in admitting his own mendacity, and thereby denouncing the truth anyway,

or he is lying and thereby declaring himself to be telling the truth, which however implies that he is at the same time lying and not lying at all.

I shall stop here before unnecessarily magnifying the headache of my poor reader (not to mention my own), passing on to the relevance of this irritating paradox.

The importance is partly in logic and semiotics itself, where it has been a not yet detonated theoretical bomb, since the realisation of the logical implication by Russell around the beginning of the twentieth century. The attempts to disarm the bomb have been mostly to issue draconian laws of semiotic apartheid like Russell's theory of types[101] or Tarsky's distinction between object and meta-language.[102]

I believe this strategy, however understandable, is an expression of the dualism of logical formality. It consists of, on the one hand, an astonishingly successful ability to find and create order, and, on the other hand, a Jungian shadow, a frugal, ritualistic repression of ambiguity. This irrational tendency to replace fertile life with barren order can be interpreted as a compulsory neurosis of a rationalism that is terrified by the logical chaos of human existence. Further, this chaos, ironically enough, cannot be confined to the slovenly conditions of ordinary life, as even the disciplines of mathematics and logic seem to have been infested. We can neither be sure of avoiding contradictions inside the informal meaning system of daily life, nor even within the seemingly safe borders of formal system.[103]

5.6   Semiotics and Dialectics

We are now about to complete this tortuous circumnavigation of the semiotic domains. A very important topic, however, has been mentioned only in passing; the relation between the **interactivity** and **reflexivity** associated with the semiotic aspects of human activity.

> **Semiotic interactivity** is a reversal of the "normal" behaviour of signs. This refers to their status of being merely a reflection of their referents and therefore ontologically and causally secondary to them. This reversal consists of a feedback from the activity related to the sign, a feedback changing the state of the object that is the referent of the sign.

> **Semiotic reflexivity** is an even more radical break from classical semiotics, namely the autology of a sign; it is the phenomenon of a sign referring to itself.

Both phenomena, as we have seen, are abhorred by dualistic logic. Nevertheless, I shall try to demonstrate that both are of central importance to the tradition of dialectics, and thus to the theory of activity.

5.6.1   Interactivity and Dialectics

We will start with the a-semiotic object field of natural science, O_N, one of the ontological domains listed in the previous main section. In this object field, there are no signs, and therefore no interactivity of the kind defined. Consequently, there is no trace of dialectics in the sense used in this treatise. The postulate of the interconnection between interactivity and dialectics is thus supported by the lack of the presence of either in the natural world.

Proceeding to the field of human affairs, we first enter the domain of the unspecific signs, U. Here, there may be interactivity in the sense that an unspecific sign is not just a passive reflection of its referent; the former can influence the latter. This is the case with psychological symptoms, which were mentioned as an example of unspecific signs. According to Freud, the originator of psychoanalysis[104], a symptom is a manifest psychological phenomenon referring to another phenomenon, hidden to the subject because of repression. Further, for the bearer, it is a latent phenomenon, or to be more precise, a repressed personality conflict. Obviously, the symptom is a sign of the type Peirce[105] called an index; the sign is a causal effect of the repressed personality conflict.

This primary relation is explained by Freud through his concept of the *primary gain of a symptom*; it functions as a way of relieving its bearer of some of the burdens of the conflict.

Freud, however, proposed that there was a secondary relation between the basic conflict and the symptom that it produces, a phenomenon he called the *secondary gain of a symptom*. This is a feedback causality, implying that the very existence of the symptom has an effect on the surroundings of the person in question, especially because of the reactions of the people with whom he or she is in contact. Thus, a sign, even an unspecific sign that is unintended and either totally or partly unconscious, can be much more than a mirror of reality; it can be an active, interactive part of reality. The secondary gain of the symptom, although not directly influencing its source, may have a causal influence anyway on the context in which it exists.

The specific signs, referring to the next area to be discussed, are however much more interesting in respect to interactivity.

S_N is a special case, here we have a basic heterosemioticity, which is a defining characteristic, blocking interactivity and thus making the term dialectics meaningless in this field. Again, we see the simultaneous lack of interactivity and of dialectics. This decisive quality of the natural sciences will be examined thoroughly in the next chapter.

S_U, on the contrary, provides us with the most vigorous examples of interactivity. Namely, there is two-way traffic between the meaning system and its operational counterpart. Just as in the case of U itself, signs are not just passive reflections of reality. Instead, they are decisive constituents that besides being influenced by their referents are themselves often capable of influencing their referents in return. To be more precise, the assertion of both directions of causality is somewhat hypostasic, for what we see is, in fact, the dynamic evolution of activity, an evolution that is at the same time attached to its significative and operational aspects and constituents.

In the previous chapter, I criticised the theory of reflection for its partial return to semiotic dualism; it deprives ideas of materiality by defining them as mere reflections of materiality. There is an important expression of the interactivity of the activity signs that can be seen when we study the influence of ideas in history. This will be a major theme in the final chapter on sociology and psychology. However, here I will restrict myself to asserting that the dialectics of

our concepts should not be limited to the history of ideas, but must be broadened to the whole process of history, be it "material" or "social".

A very interesting part of S_U concerns the sciences of anthropology. Here, the phenomenon of interactivity should be understood as a feedback relation; a theory about an anthropological object fires back on this object, thereby reversing the original relation of cause and effect. For example, the theory of market economics formulated by Smith[106] evidently has been one of the main factors influencing modern economic life. Likewise, the theory of Marx has undeniably influenced the course of our history for more than a century.

In marked contrast to the natural sciences, the anthropological sciences do not just reflect, but also often interact with their object field. This fact will be discussed in the next chapter.

5.6.2   Reflexivity and Dialectics

Strictly speaking, we have only reflexivity in the semiotic domain S_S, the reflexive signs or the meta-signs. However, this quality (which was examined in a previous sub-section on semiotic categories) also exists in the meta-theory of anthropology. This is not a contradiction, because this meta-theory belongs, in fact, to the category of S_S when its referent is anthropology, which is mainly a part of S_U. The meta-theory of anthropology, therefore, has the potential of reflexivity, and indeed, we often find that logical and semiotic problems are characteristic of this relation.

Being a part of anthropology, and in this respect even a part of the object field of anthropology, an anthropological meta-theory can be self-referring, and thus capable of producing the tiresome problems and paradoxes discussed above.

Of specific importance is that such a reflexive meta-theory can end in either circularity or self-refutation.

If we take the Whorfian epistemology as an example, it can be described as an inconsistent theory, because its reflexive quality makes it self-refuting. If any thesis about reality is already determined by the structure of language, even the Whorfian meta-theory is subject to this condition. However, in that case it is only expressing a specific aspect of its own language, and not saying anything about the object matter to which it is seemingly, albeit vainly, referring.

The same problem is associated with the theories of sociological relativism, and apparently, even with the theories of psychological relativism.

The meta-theory of Marxism has often been criticised for being plagued with the same problem of reflexivity.[107] This Marxian meta-theory, to which I largely adhere, suggests that matters of theory are an expression of matters of the practical life. If, however, this meta-theory can be reduced to the status of being a mere reflection of the struggles of the mundane world of practice, it has no independent truth value.

This criticism, however, is relevant only in regards to a vulgar misunderstanding of Marxist meta-theory. The meta-theory that I defend is the dialectics of history, where we not only find a reflexive, but even an interactive relation. Thus, the *evolution of society* and the *evolution of the theories of societies* are related in a way more complicated than expressed in vulgar Marxism.

Not only is the theory influenced by the society in which it is formed, but also society is itself susceptible to the influence of the theory describing it, as we just saw in the preceding sub-section.

In fact, the Marxian meta-theory is based on the principle of the dialectics of theory and practice. According to this tenet, sociological theory is, in fact, partly a reflection of the society in which it is developed, but it is also one of the mediators by which society is changed.

Thus, the object level of societal processes, the theoretical level of developing and understanding these processes, and the meta-theoretical level of elucidating the way sociological meta-theory is developed are all interacting. We change our society partly through sociological theory, and we get an understanding of our own theory through our experiences of how the theory field interacts with its object field.

The way to understand the dialectics of the anthropological sciences, however, will be postponed to the next chapter.

Notes

1   Pragmatics is also an ambiguous term. It is, on the one hand, the name of a philo-
     sophical school that asserts that the matter of truth is derivable to matter of prac-
     tice, and on the other hand, it is a subfield of linguistics that studies the use of lan-
     guage within a social context. It is in this latter sense that I suggest that the term is
     referring to the relation between the subject and the sign, to stress the importance
     of signs as social mediators.

2   In fact, we thus have two kinds of object-directed relations:
     a. subject-sign-object: the significative (mediated) object-relation
     and
     b. subject-object: the operational (immediate) object-relation.

3   Hypostacing is the conceptual act of ascribing the status of objecthood to a phe-
     nomenon. (see 2.2.3.2)

4   (Matthews 1972). Plato is discriminating between *eide*=forms and *eideai*=ideas.

5   From [Phaedo 75b] (Mathews 1972, 66).

6   From [Phaedo 75d] (ibid., p. 69).

7   (Hegel 1969, 182).

8   (Hegel 1969, 184).

9   (Hegel 1969, 180).

10   See (Leff 1970).

11   Positivism is briefly described in the subsection the History of Meta-science
     (6.6.1) in the next chapter.

12   (Dowty, D.R., Wall, R.E. & Peters, S. 1981).

13   The semiotics of Frege is discussed in section 5.2.

14   (Tarsky 1951).

15   (Davidson 1984), (Schiffer 1987b).

16   The Ceti-project is described in (Sagan 1973).

17   As with the scepticism regarding inter-planetary empathy, there is also wide-
     spread doubt in cultural anthropology about the existence of inter-*cultural* under-
     standing.

18   The scepticism, however, is not absolute, but merely directed against empirical
     knowledge, as opposed to purely cognitive knowledge.

19   The crisis emerged with the paradoxes of set theory and the related problem of
     continuity, and also as a result of the abandonment of any ontological pretensions
     for Euclidean geometry after the discovery of non-Euclidean geometries; see
     (Davis & Hersh 1986).

20   (Rogers 1971, 196-210).

21   I have discussed these disciplines in (Karpatschof 1992, 97).

22 In any formalism, there is a tacit assumption of somebody making at least the for-
    mal case of the sign, the meaning-less symbols of the play. Nevertheless, these
    sign-producers and users, of course, cannot be understood from the standpoint of
    formalism. Formalism is based on an incomplete metaphor, the metaphor of the
    pieces and the rules of a transcendent game that plays by itself, without players, or
    with players that are marionettes controlled by the transcendent game.

23 See for instance (Rogers 1971, 57).

24 This is true in the case of Montague. However, there are also agnostic or even ide-
    alist versions of logical formalism.

25 (Barwise & Perry, 1983).

26 I have focused on Whorf because the main share of the thesis is his merit. Sapir's
    strong association with the thesis is due to the rather irrelevant fact that Whorf's
    education was as a chemical engineer and his profession was as an officer of a fire
    insurance firm. (see Schultz 1990).

27 (Whorf 1956, 61).

28 (Whorf 1956, 156).

29 The conception of the semiotic triangle is thus based on the epistemic individual-
    ism that was criticised in the previous chapter.

30 (Chomsky 1966, 1972).

31 (Fodor 1981, 314).

32 Some of the semiotic implications of psychoanalysis are treated in 5.6.1.

33 (Berger & Luckman 1967).

34 (Garfinkel 1987),.

35 (Harré 1993).

36 (Habermas 1984-89).

37 (Peirce, Collected Works V:402), here quoted from (Ayer 1968, 49).

38 (Peirce, Collected Works V:412), here quoted from (Ayer 1968, 62).

39 (Putnam 1980, 245).

40 (Putnam 1980, 271).

41 I am here thinking of Rosch's prototype theory of concepts (Rosch 1973).

42 A common, but flawed English name for this school is the Socio-Historical
    School.

43 (ibid., p.57).

44 (Frege 1962, 1966).

45 (Leontiev 1973:180, author's translation from the German edition).

46 (ibid. p.181, author's translation from the German edition).

47 (Frege 1975, 27).

48 (ibid. p.44, author's translation from the German edition).

49 (Frege 1976, 96).

50 (Prebensen 1987).

51   (Gadamer 1965, 178).

52   Characteristically, one of the first triumphs of AI was the accomplishment of two
      of its founding fathers, Simon & Newell. They designed a general problem solver,
      a specific implementation of which started to make proofs of the sentences of
      Principia Mathematica, that is, of the seminal work in logical formalism that was
      the direct offspring of Frege's work (Newell & Simon 1972).

53   An example of the project of Naïve Physics in Cognitive Science is Hayes (1985).
      His project points out that a lot of physical knowledge, in everyday life as well as
      in science, has an implicit logical presupposition of a sophisticated, but unformu-
      lated natural science, a rather complicated body of partly tacit knowledge.

54   (Wittgenstein 1961, 1974).

55   (Grice 1957, 386).

56   (Sperber & Wilson 1986, 135).

57   (Shannon & Weaver 1964).

58   See (Petrovsky 1990:366ff).

59   (Leontiev, Leontiev & Judin 1984).

60   Elkonin (1977).

61   Lomow (1978, 1980,1982, 1984).

62   (Polanyi 1958).

63   On the other hand, there is operationality without significality, because as human
      beings, we still have the pre-mediated activity of our phylogenic past as a beha-
      vioural resource and possibility a retreat. This is thus an important argument
      against the significationistic idealism of for instance symbolic interactionism or
      the universal pragmatics of Habermas.

64   See (Leff 1970).

65   (Ibid., p. 106).

66   (Ibid., p. 256).

67   (Koffka, 1950).

68   (Gibson 1956, 1966, 1979).

69   From the treatise "On Universal", here quoted from (Wippel & Wolter 1969,
      192f).

70   (Aristotle 1968), (Matthews 1972).

71   From (*Sophist:* 256a), here quoted from (Matthews 1972, 234).

72   For cladistics see (Ridley 1986).

73   Jens Mammen (1983) has defined two category systems called sensory categories
      and categories of choice. The latter type covers the classification of human prac-
      tice.

74   Schiffer (1987a, 67) writes that this class of pets belongs to several species within
      the family Leporidae, the unifying quality being simply that they have been
      domesticated as pets.

75   (Schiffer 1987a).

76   (Ibid., p. 65).

77   Schiffer is here mainly referring to Fodor, mentioned on p.21.

78   (Zaddy, 1965), (Gupta, Siridis & Gaines 1977).

79   (Ibid.).

80   (Rosch 1978).

81   (Lakoff & Johnson 1980).

82   This fact is demonstrated from a modern point of view by the unorthodox content
     of the two Hegelian treatises on logic (Hegel 1971 & 1969b).

83   In Popper's furious attack on Hegel, this point is regrettably overlooked. There
     are, in fact, many reasonable targets of criticism in the philosophy of Hegel, but
     Popper is trivialising his own attack by ignoring the philosophical aim of Hegel,
     namely to overcome the dualism of western rationalism. Granted, this aim is not
     within reach of the absolute idealism of Hegel, and even this very objective may
     be mistaken. However, it is still a most relevant alternative to the barren alleys of
     formalistic rationalism.

84   The reversal is expressed by Marx as "turning Hegel upside down".

85   (Marx 1857).

86   A monograph treating Marx's conception of the relation between the categories of
     "concrete" and "abstract" is found in (Iljenkov 1982). A modern philosopher who
     has given an original contribution to this understanding of abstraction and con-
     cretisation as ontological processes is Sève (1976).

87   (Dawydow 1989).

88   The reader, however, may wonder how a natural entity, seemingly belonging to the
     asemiotic natural world, can be a sign. Here, the strict definition of a dividing line
     must be kept in mind. The very moment that AIDS comes into contact with a
     human, it loses many of its characteristics as an entity of the natural world. All the
     attributes of AIDS that are influenced by the human world belong to this, but not
     the qualities of AIDS. They will be a part of the human world. For instance, the
     genetic code is pre- and a-anthropological. The same argument could be carried
     through for the nuclear plant, where likewise there will remain qualities fixed as
     belonging to the natural world.

89   Both of these letters are, of course, constituents of the region referred to by S. It
     shall eventually be shown that they belong to that sub-region of S that is the
     domain of the meta-signs, the specific signs that have other specific signs as their
     referent.

90   (Sperber & Wilson 1986, 60f).

91   By the concept the **sublated old,** I mean the modification of an old category
     brought about by a category that has emerged from the original category, **the
     unsublated old.** Thus, the first bifurcation of the (unsublated) old and the (emer-
     gent) new is followed by a new branch of the elevated old that is, in a way, a sec-
     ondary elevation.

92   An implication is that the formalistic approaches to anthropology must even be catastrophically misguided. A proposition that will be defended in a later section on cognitive science.

93   The terms heterological and autological were introduced by the logician Grelling in connection with the problems of self-reference. The paradox of Grelling's heterology concept is discussed in (Valpola 1953).

94   (Huizinga 1970).

95   (Henningsen 1973).

96   An attempt to discuss religion from a cultural historical point of view was published in a Danish journal of psychology by Schultz (1990).

97   (Tarsky 1951).

98   (Valpola 1953).

99   (Hofstädter 1980) is, in a way, a monograph on this paradox.

100 There are some artificialities to be added in order for the paradox to work. Thus, the meaning of liar cannot be referring to a person whose lack of trustworthiness is based on our insecurity in a specific instance about whether the asserted sentence is false or true. Instead, the meaning should be that we are confronted with a consistent liar who would never dream of spoiling his reputation of firm mendacity by ever telling a truth.

101 (Russell 1977).

102 (Tarsky 1951).

103 The impossibility of securing a rich, formal system from self-contradiction was discovered by Gödel, see (Rogers 1971).

104 (Freud 1976).

105 (Peirce 1992).

106 (Smith 1976).

107 (Popper 1957).