Meaning and Experience

Patrizia Violi

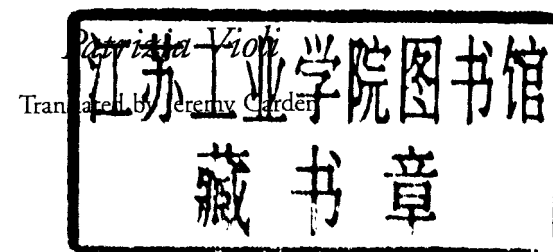Translated by Jeremy Carden

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INTRODUCTION

Naming things is the great and important
consolation of human beings.
—Elias Canetti

I know, I feel
the meaning that words hide;
they are anagrams, cryptograms,
little boxes, conditioned
to hatch butterflies . . .

—H.D.

This is a book about words, or rather, about the meaning of words. Such a statement, however, immediately needs clarifying because it is not at all obvious either what the subject matter is, or why it is so central to semantics. Meaning is certainly something more complex and difficult to define than the sum total of our words. As we all very well know, vocal nuances can count for more than any number of words, and often it is a specific intonation, pause, or stress which allows us to infer the real, hidden meanings beneath the surface of discourse. And although we can attempt to describe meaning, an atmosphere can only be felt. Furthermore, we do not communicate by means of isolated words, but rather through sentences, texts, conversation, and so on. Why then should particular attention be paid to the semantic analysis of words rather than to the examination of lengthier chunks of linguistic matter? What kind of entities are words? Are they artificial theoretical constructs or do they have an autonomous linguistic existence?

The last of these questions demands some preliminary comment: choosing to deal with words involves consciously placing oneself within a tradition that shares and holds an ethno-theory of language which is anything but innocent. This ethno-theory, for instance, has by now established the centrality, if not the predominance, of the written language over the spoken one. Certainly, it is in writing and with writing that the word is posited as a natural unit of description, the base element in a process of segmentation that is far from self-evident, though it may now appear so. An indication of the centrality of written language and its descriptive categories can be seen in the folk theories of speakers who regard words as immediate, natural units of meaning and reference, in line with a tradition dating all the way back to the Edenic myth of the origin of language. The founding moment of language is identified in Adam's original act of granting a name to things, even though this reading of the myth conceals the curious contradiction

that naming presupposes a language to name with. This polarity of system and process, meaning and communication has been present from the Edenic myth onward and can still be detected in various guises in contemporary semantic thought.

For all the arbitrariness of this process of segmentation, which has determined the importance of the lexical unit in our writerly and literate cultural tradition, linguistics does not seem able to rid itself of it easily. La Fauci (1994: 17) has observed that during the first half of the twentieth century, linguists tried in various ways to free themselves of both the word and terminological reference to it. They were not, however, greatly successful, if we consider that in 1979 under the entry for "Lexicon" in the *Enciclopedia Einaudi* Lepschy wrote:

> The notion of the word is polyvalent, but despite its lack of precision it has a
> central position in the field of linguistics, recognized by common opinion and
> by the linguistic feeling of speakers [to the extent that] the whole functioning of
> language at all its various levels seems to consist of systems which revolve around
> the word. (Lepschy 1979: 129; my translation)

Although the word has been the subject of lively terminological dispute, being substituted from time to time by lexeme, morpheme, lessia, lexical item, and moneme, it seems to remain an awkward but indispensable primitive for linguistic theory. This can be seen even more clearly today, given the increasingly central role that the lexicon has come to play in the study of syntax since the middle of the seventies. Starting with developments in generative grammar related to government and binding theories, lexical structure has been specifically and systematically correlated with syntactic structure, and is possibly now the most crucial testing ground for different theories.

If all this can be read as a re-evaluation of an analytic unit which, though not naturally given, undoubtedly contributes to determining grammatical problems, it still tells us nothing about its relevance for semantic analysis as such. Why devote more attention to analyzing the meaning of words rather than sentences, speech acts, or texts? These other options have of course been pursued: generally speaking, philosophical semantics has always considered sentences and their truth conditions as central to semantic analysis, while generative semiotics has claimed priority for texts.

I will not linger here on the various positions existing in formal-logic semantics, as they will be examined in more detail in the first chapter. Instead I will limit myself to considering the opposition between word and text, which relates to a long-running dispute in the field of semiotics about the validity of the linguistic sign as a definable entity in itself. Eco (1984) has observed that there are two types of argument behind claims for the priority of texts. The first is also shared by those who prefer to analyze the pragmatics of the speech act in all its concreteness and complexity, rather than the linguistic sign. In their view, attention should be given not so much to signification processes as to communication processes. This objection does not, however, seem conclusive since both perspectives are evidently

complementary: "One cannot think of the sign without seeing it in some way characterized by its contextual destiny, but at the same time it is difficult to explain why a certain speech act is understood unless the nature of the signs which it contextualized is explained" (Eco 1984: 22). The second line of argument sees the text, and only the text, as the site on which systems of meaning are shaped and constructed. My own position is that the opposition between text and word is largely false, and is only valid within a semantics still bound by the notion of the lexicon as nomenclature, and thus of the linguistic sign as equivalence and definition. The real problem is not choosing between word or text, but which semantics to opt for, and what underlying theoretical assumptions and systems of representation that semantics has.

If we assume that natural languages are regulated by the Hjelmslevian principle of expansion and condensation, the difference between lexical units and more substantial portions of text ceases to be a difference of nature and becomes purely one of dimension. The issue of the size of what is to be studied loses theoretical importance and becomes irrelevant, because the same configuration and articulation of meaning can be condensed into a word or expanded into a whole text. Lexical units can thus be seen as the points where complex underlying semantic structures emerge, points of temporary stability in a dynamic semantic universe which is in a continual state of transformation.

Paul Valéry once compared the meaning of words to a thin plank thrown across an abyss, a plank that could break at any moment and plunge us into thin air. However, we should not be deceived by this image, because the planks we throw over the abyss of sense are part of the abyss itself and emerge from it. When one of these pathways disappears, other clusters form, the visible, emerging points of a perpetually changing iceberg. The specific task of lexical semantics is to account for how underlying configurations motivate these visible elements, what principles form them, and how regularly they are transformed.

In so much as words are semantic condensations with a certain degree of synchronic stability, they can effectively be seen as staging posts for our inferential activity, relatively fixed points from which we formulate hypotheses in the process of understanding and attributing meaning to a text. As I shall argue throughout the book, an adequate lexical semantics must necessarily be oriented toward the text and its interpretation, with lexical units as abductive devices for possible guided inferences. Obviously this is not to deny the importance and utility of other planes of description, nor does it necessarily imply that lexical analysis has some kind of generative priority. It simply affirms the significance of the specific configurations assumed by lexical forms. Lexematic analysis and textual analysis do not presuppose opposing theoretical hypotheses; they are distinct but interacting and mutually implicative planes.

Any attempt to represent lexical meaning always presupposes a semantic theory, however implicitly, and this work is no exception; it is informed by a number of fundamental assumptions about the nature of meaning, which will emerge in the course of the book. To capture it in an image I would say that I

think of language as a living organism, the heart of which is the semantic system, and whose life is closely related to and involved in, indeed, inseparable from, our own lives. Put in more ascetic terms, the basic guiding hypothesis is a general assumption that semantics is not autonomous. It is not separable from the sum of our knowledge, and therefore from our culture, habits, and social customs, from everything, in other words, that makes up the socio-cultural sphere of our experience. Though I am convinced (and will try to demonstrate it in the course of this book) that it is possible to identify different levels of competence within our general encyclopedia in terms of cogency and necessity, there are no qualitative or principled differences which allow us to isolate inherently linguistic and autonomously definable knowledge.

If linguistic semantics cannot be separated from a wider cultural knowledge, neither is it independent of our cognitive thought processes, and thus from processes of categorization, recognition, and comprehension. This implies a high degree of integration between descriptive procedures of a strictly semantic kind and other facets of cognitive activity; the various processes by which we arrive at the point of "giving a name to things" are not distinct from those with which we think, recognize, and categorize, or, in a word, understand. Semantics is thus part both of a psychology of understanding and interpretative processes, and of an ethnography of culture, revealing its hermeneutic vocation in this dual identity.

However, the most profound reason semantics is not autonomous lies in its inextricable link with human experience, the link from which meaning itself derives. Linguistic categories reflect the categories of our experience and arise out of them; the meaning of language is inseparable from the meaning that the world has for us, because we interpret linguistic expressions by means of the same schemes we use to give sense to the surrounding world, to our perceptions, feelings, and actions and all that motivates them. In particular, what is lexicalized in the linguistic system reflects highly important experiential configurations and clusters, and relates to saliencies of various kinds and origins. Moreover, it is precisely on the basis of their differing experiential geneses that different semantic configurations arise in the various lexical classes.

Thinking of meaning as caused and motivated by the nature of our experience has various consequences; perhaps most importantly, the relationship between language and the non-linguistic universe of our tangible experiences must be considered a crucial semantic issue, conceived of, however, in terms of the critical issue of perception. The link between language and perceptual experience makes it possible to reformulate the problem of reference in very different terms to those of the school of philosophical semantics, avoiding at the same time the solipsism implicit in the circularity of intralinguistic definitions.

Dedicating a whole book to the study of lexical meaning obviously implies a belief that it can be described, that linguistically manifested meanings are not totally indeterminate but display a certain degree of regularity. This is a rather delicate point, because it brings us to one of the most important theoretical problems, which is also one of the most difficult to define: the relation between regu-

larity and variation, between the determinacy and the indeterminacy of meaning. How can we assume that the plane of content is in some way systematic, while at the same time admitting the existence of a continual variation of meanings, without which we would be frozen in a closed semantic universe, incapable of adapting to the flow of our experience? Languages do allow us to give sense to all our possible experiences and to constantly shift the boundaries of what can be expressed. In language, regularity and variation imply and presuppose each other; these two opposing yet complementary forces constitute the very life of language, criss-crossing it in a continual tension, not unlike what happens to us all in life itself. The relationship between these two polarities is dialectical and vital, and cannot be reduced to any supposed generative priority of the norm over the deviation. In fact, variability is part of the very nature of linguistic functioning, which is characterized by the intrinsic indeterminacy of meaning. As Tullio De Mauro recently observed, it is

> the property of indeterminacy which, allowing each word to adhere as occasion requires to every desirable and opportune *hic et nunc omnimodo determinatum*, at the same time interposes itself between a single situation or object and a word or sentence, allowing our utterances to take on not only what is *in praesentia*, but also that which belongs to the memory of the past or to the world of the future, of the possible and even of the impossible. (De Mauro 1994a: 20; my translation)

Indeterminacy, which is a structural potential of language, occasions the effect of a "vagueness" of meanings that derives from the constitutive difference between the discrete structure of the linguistic system and the continual flow of our experience. Language makes up for this inevitable discontinuity with an intrinsic malleability which makes it possible to extend and put to new uses the nuclei of stabilization, which are represented at a semantic level by lexical entities. Their application is flexible and open, but by no means indefinite or casual. In fact, the innate indeterminacy of semantic functioning caused by this linguistic plasticity raises an interesting question: what are the limits of tolerance? What happens when the points of temporary stability represented by a lexical outcrop modify and re-form? How can we account for the crumbling of an existing equilibrium and the emergence of a new configuration? The possibility of describing these transformations is a direct function of the choice of descriptive model. No model can be regarded as adequate if it is not capable of envisaging the ways in which the system varies (simultaneously the result and the presupposition of its dynamics), and at the same time establishing the boundaries within which variation can operate without becoming an incommunicable private language.

This book is divided into three sections. The first discusses the three main approaches to the problem of meaning—the logical-philosophical, the structural, and the cognitive, which together constitute the theoretical background for the whole of the discussion that follows. The premises for an integrated theory of lexical meaning are also laid out here. The second section analyzes the main representational models of lexical meaning, with particular reference to classical

models and their main alternative, prototype models. Finally, in the third section I propose and describe the principal characteristics of a semantic model that is at least in part original.

"Each word should have the maximum flavor," said Simone Weil. For this to be possible it is necessary to take words very seriously indeed, because they are the magical and privileged site of a dual movement—aspiration toward an order that nomination allows us to create, and the dream of an infinite freedom of invention. Behind every attempt to grasp a regularity and an intersubjective usage in words, a hidden tension re-emerges, nostalgia, perhaps, for the adventure that language can constitute when it is open to new sense and meaning. I hope this book captures and gives some account of this tension, transmitting an awareness of the dual pleasure concealed in words: the secret comfort of giving form to chaos, and the delicate magic of a secret place where it is also possible to hatch butterflies.

Many people have helped me in different ways in the writing of this work and they all have my heartfelt gratitude. I owe particular thanks to a number of attentive and sympathetic readers: Giovanna Cosenza, Umberto Eco, Ivan Fónagy, Maurizio Gnerre, Paolo Leonardi, Raffaele Simone. Their observations have been of very great help, and if I have not always managed to profit entirely from their comments, the responsibility is mine alone.

While working on this book I met Patrick. This book is dedicated to him.

Part One

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Background Theories:
The Many Ways of
Considering Meaning

1

THREE APPROACHES TO MEANING

The thing that perhaps most strikes anyone embarking on the study of semantics is that in reality there is no *one* semantics, a unitary and commonly shared paradigm, but rather a multiplicity of approaches and a variety of research interests, which are often moving in quite different directions and are at times not even reconcilable. This is of course a characteristic of the linguistic discipline in general that can also be seen, for instance, in the study of syntax. What seems to be distinctive about semantics, however, is the distance separating the various positions, which results not only from different working hypotheses, but often from radically divergent views of the object of study itself. Bonomi has observed (1987: 49) that the term *semantics* often refers to quite different things according to whether it is uttered by a linguist or a philosopher. I would add that these differences cannot always be resolved; indeed it can be claimed that currently there is not a single semantic theory whose core concepts are universally accepted (Marconi 1981: 687). The issue at stake is the very concept of meaning itself, variously understood as the representation of lexical relations, as the truth conditions of sentences and the functions which define them, as use or social usage, or as an underlying conceptual structure.

This heterogeneity of definitions can in part be explained by the fact that numerous disciplines have concerned themselves to a greater or lesser extent with the problem of meaning. Historically, the first of these were philosophy and logic, followed by linguistics, semiotics, and psychology. The last thirty years have seen contributions from psycholinguistics and artificial intelligence, and even indirectly from neuropsychology and the neurosciences. Consequently, it comes as no surprise that there should be such a divergence of paradigms, and so much disagreement about the acceptability of the basic notions of each paradigm, notions ranging from truth and reference to concept and semantic property. But this in-

determinacy also has a deeper and more intrinsic reason: meaning is itself complex and multidimensional, and does not seem to be reducible to a single component. This can be clearly seen in the diagram of the semiotic triangle (diagram 1), where I have deliberately used the generic terms *expression, content,* and *referent.*
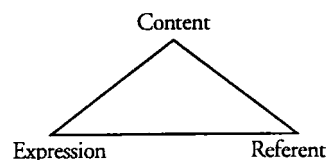
Content

Expression   Referent

Diagram 1

The different schools of thought which have sought to answer the question "what is meaning?" can be fundamentally distinguished according to the degree of emphasis they place on the different sides of this triangle. To simplify somewhat, the two main disciplines which have addressed the study of meaning, linguistics and philosophy, have focused respectively on the left-hand and the right-hand sides of the triangle.

In reality there are many versions of the semiotic triangle, which not only adopt different terms but also represent different conceptual frameworks. Without entering into a detailed discussion of the various typologies, it is sufficient to note here that while the term *referent* is relatively uncontroversial, *expression* and *content* are much less so. Although *expression* is often understood as the pure linguistic signifier, this is not always the case.[1] The notion of content is even more problematic. Its role and position in theory vary considerably depending on how it is understood, and in some cases it is eliminated entirely. Within the philosophical tradition, for example, an important distinction can be drawn between those who consider the relation between expressions and referents to be direct, thus doing away with the apex of the triangle, and those who see it as being mediated by an intermediate entity called *sense* or *intension.* Linguistics has also interpreted content in different ways, either as an integral part of expression, a linguistic signified inseparable from its signifier, or as something possessing an autonomous conceptual substance.

Bearing in mind these differences, it is possible to identify three basic approaches to the definition of meaning: (1) the meaning of an expression is the entity, "the thing," or the state of things to which the expression refers; (2) meaning is the relation that each linguistic element has with other elements, thus understood as the union of signifier and signified, expression and content; (3) meaning is the concept or mental image to which an expression is connected in our minds. These three notions, sometimes interwoven and superimposed, can be found in all theories of meaning, and are at the core of the three main strands of contemporary semantics: referential or truth-functional semantics,[2] structural semantics, and cognitive semantics.

In the pages that follow, I will attempt to outline the fundamental characteristics of these three different strands, emphasizing areas of divergence and possible points of convergence. The first of these strands, the referential, has been explored primarily within the disciplines of philosophy and logic. The other two fall within the domain of linguistics, respectively European structuralist linguistics and North American generative linguistics. What follows is not a general introduction to the major areas of research in contemporary semantics, nor is it exhaustive. My aim is to delineate some of the critical and problematic areas of current debate revolving around the two fundamental questions which every semantic theory tries to answer: what is meaning? and how can it be represented?

1.1. Logical-philosophical semantics

The philosophical tradition referred to here is the analytic philosophy of language which developed around the beginning of the twentieth century, above all in the Anglo-Saxon world. This current of thought is often known as the "linguistic turn," the basic assumption of which is that every philosophical problem must be dealt with by analyzing the language in which it is formulated.[3]

One of the most important consequences of the linguistic turn for the study of meaning has been the attention devoted to the logical structure of language. This was the direction taken by modern logic, starting with Frege, Russell, Carnap, and Tarski and running through to the more recent theories of Montague, Hintikka, Barwise, Perry, etc. Philosophical semantics was strongly characterized from the start by a marked formal logic apparatus, and indeed it is often simply referred to as logical or formal semantics. However, its most distinct theoretical features are not so much its formal structure (which can also be found in many linguistic approaches) as two of its powerful basic assumptions—its fundamental anti-psychologism and its emphasis on the referential, that is, a particular attention to the relationship between language and the world.

The logical-philosophical approach to language is predominantly anti-psychological:[4] Frege considered it necessary to rigorously distinguish between the psychological processes of thought, which are necessarily subjective and belong to the individual psyche, and pure thought, which human beings possess as a "common store . . . which is transmitted from one generation to another" (Frege [1892b] 1952: 59). Philosophical semantics is not at all interested in what processes actually occur in the minds of speakers when they communicate or interpret something; they are considered utterly irrelevant to the definition of meaning, which is an abstract entity stripped of all psychological content.

Early twentieth-century structural linguistics also maintained a similar distance from any form of psychologism. Despite having a profoundly different approach, it shared the same fundamental attitude to the study of language. Indeed, anti-psychologism can be said to have characterized the spirit of the age, and its aim of founding along scientific lines those disciplines concerned with language. As far as analytic philosophy was concerned, this tendency was to become more

accentuated after Frege, reaching a peak in the semantic theory of Montague, where meaning is defined as a purely mathematical entity.

However, perhaps the most important feature of philosophical semantics is its emphasis on the referential. The main aim is to define the relationship between language and the world, which is where the fundamental relation of semantic interpretation is formed; meaning does not originate within language or its mental correlates, but in the external correlation between language and reality. In this perspective, meaning is the capacity of individual terms to refer to extralinguistic entities, and of sentences to affirm determinate states of things which may prove to be true or false, thereby possessing a specific truth value. This notion of truth was to take center stage in philosophical semantics, which for this reason was defined as truth-functional or truth-conditional semantics.

1.1.1. *The concept of truth*

> The definition works by giving necessary and sufficient conditions for the truth of every sentence, and to give truth conditions is a way of giving the meaning of a sentence. (Davidson 1967: 310)
>
> Semantics with no treatment of truth conditions is not semantics. (Lewis 1970: 18)
>
> Like Donald Davidson I regard the constitution of a theory of truth—or rather, of the more general notion of truth under an arbitrary interpretation—as the basic goal of serious syntax. (Montague 1974: 188)

Statements like these abound in philosophical literature and they highlight the perceived connection between a theory of meaning and a theory of truth. The meaning of a sentence is given by its truth conditions, namely the conditions that render that sentence true or false (referring naturally to declarative statements). Various meaning relations between sentences also derive from the notion of truth; for example, the difference in meaning between *John loves Mary* and *John hates Mary* correspond to the difference in the conditions which make each of the two sentences true. From this perspective, the meaning of a word is the contribution it makes to the overall truth conditions of the sentence in which it appears, given that the meaning of each expression is always entirely obtainable from the meaning of its components.[5]

Assimilating the idea of meaning to truth conditions may appear counterintuitive; the two concepts seem at first sight to have very little in common and not to be easily reducible one to the other. Intuitively, we think of meaning as related to our ability to comprehend, which is clearly independent of the truth or falsity of a sentence. In fact, we can understand the meaning of a sentence without knowing whether it is true or false. But what is it then that we actually comprehend?

Wittgenstein (1922) argues in his *Tractatus* that what we understand are the

truth conditions of that sentence. In his view, language is figurative; it is the image or, in a sense, a copy of the extralinguistic reality of which it speaks. The relations between entities in the world are reproduced by the relations between the components of a sentence, even though this "resemblance" is sometimes masked by an apparently different linguistic form. Once the logical form of a sentence in a natural language has been identified, it will represent the state of things whose form it shares. Understanding a sentence means understanding what state of things it is an image of. Because a statement, if it is true, *shows* how things are, says that things are as they are (it is the description of a state of things), understanding a statement means understanding in what conditions it would be true, that is, understanding its truth conditions: "To understand a proposition means to know what is the case, if it is true. (One can therefore understand it without knowing whether it is true or not)" (Wittgenstein 1922: prop. 4.024).

Truth conditions are clearly quite different from and completely independent of real truth or falsity. Understanding the statement *My cat is fat* in no way presupposes knowing whether it is true or not, only knowing how things would be if it were (understanding what entity the phrase *my cat* refers to, what relation is expressed by *is*, and so forth).

It should be evident at this point that the definition of meaning in terms of truth conditions arises from the interest in the relationship between language and reality which is characteristic not only of Wittgenstein's thinking but of philosophical semantics in general. Determining the meaning of the sentences of a language is equivalent to characterizing the truth conditions of those sentences. In the classic formulation of this, Tarski (1936) defined the concept of truth as an interpretation of a domain of entities (or, to use his terms, a model, from which the name of model-theoretic semantics comes). We can say that we have an interpretation of a given language when we are in a position to establish how every expression in that language relates to the world. Interpretation, therefore, is nothing other than a function relating linguistic expressions with extralinguistic entities. This relation between language and the world that lies at the heart of the theory of meaning of philosophical semantics can be realized either directly, without any mediation between sign and referent, or indirectly, with various notions such as sense or intension mediating the relation between one plane and another.

1.1.2. *Theories of meaning with no mediation between sign and referent*

I will touch only briefly on this group of theories because they have not really been specifically applied to the plane of linguistic analysis, which is what directly concerns us here. The idea of a direct, unmediated relationship between expressions and referents can be found in the theories of meaning of both Russell and Quine, and from the mid-sixties onward also characterizes the causal theory of reference, or theory of direct reference, which as the name suggests is more a theory of reference than a theory of meaning as such. The classic outline of this

new theory of reference is in the work of Kripke (1972), and although analysis was initially limited to proper names, it was subsequently extended to other lexical classes and to demonstratives and deictics.[7] Kripke, like John Stuart Mill before him, argued that proper names are not associated with any description of the individuals they refer to, but are directly "attached" to their referents by an act of naming or "baptism." Once a name is associated in this way with a particular individual, it designates that individual rigidly, referring to the same individual in all the worlds in which that individual exists.

Putnam (1975) held a very similar theory of reference, examining nouns of natural kinds like *tiger* and *lemon*, and substance and mass nouns like *gold* and *water* (also studied by Kripke). According to Putnam, a natural kind term is a sort of indexical term; the reference is indexically attached to the species, and is not determined by the stereotype also associated with it. The stereotype is culturally variable because what we know about a particular natural species or substance may change without producing a change in the substance or the particular relation linking it to the noun. Natural kind terms and substance nouns like *gold* or *water* are very similar to proper names, with an expression relating directly to its referent (be it species or substance) without the mediation of a conceptual content or a set of descriptions. In Putnam's view, this direct relation accounts for reference but not for meaning, which can be represented by a vector consisting of many components but not of extension. In other words, Putnam's view is that meaning and reference do not coincide, in contrast to what seems to be the view of Kripke.[8]

Finally, it should be noted that neither Kripke nor Putnam developed these theories of meaning and reference as complete and formal semantic treatments of fragments of natural language as, for example, Montague did. Rather, they explored a number of ideas on basic semantic themes within the framework of a direct relation between language and the world.

1.1.3. Sense and reference

The first analytic philosopher[9] to introduce the idea of a mediated relation between sign and referent was Frege ([1892b] 1952), who distinguished between sense (*Sinn*) and reference (*Bedeutung*). Frege observed that two expressions can easily refer to the same entity in the real world without having the same meaning. The expressions *the Morning Star* and *the Evening Star*, although they both refer to the same entity (the planet Venus), do not have the same meaning, as we can see by comparing the following two complex expressions: *the Morning Star is the Morning Star* and *the Morning Star is the Evening Star*. While the first is a tautology without any informational content, true only by virtue of its form, the second is informative and expresses an empirical truth that for a long time was unrecognized. Sense is thus distinguished from reference as the manner or way in which an expression designates its referent. It is through the sense of an expression that we grasp the reference. Sense thus comes to mediate the relation between language

and the world, which are no longer directly correlated. Although the sense of an expression is what allows us to identify the reference, this reference is not, according to Frege, part of the meaning of the expression. The object "cat" is not part of the meaning of *cat* in *the cat purrs*.

It would be a mistake, however, to attribute psychological valency to the concept of sense. Frege is very clear about this; he distinguishes clearly between the sense of a sign and its representation, that is, the internal image built within us on the basis of memories of sensory impressions that are also often colored by feelings. Representations are subjective and variable, given that the same representation is not always linked to the same sense, not even by the same person.

> This constitutes an essential distinction between the idea and sign's sense, which may be the common property of many people and so is not a part or a mode of the individual mind. (Frege [1892b] 1952: 59)

Frege's main concern here is obviously to establish a common intersubjectivity for the concept of sense, keeping it free from variations in individual mental representations. Subjective differences occur only at the level of the connections that each individual makes between his or her own representations, but not in relation to the sense linked to expressions. While it is impossible for two people to have the same representations, this does not prevent them from grasping the same sense (ibid.).

In this way, the common, intersubjective nature of sense is guaranteed by its non-psychological nature. In fact, Frege does not define sense as what is common to various subjective representations; rather, the general nature of sense derives from its belonging to a different, non-representational, non-psychological level. Sense is an intermediate entity between the object and our subjective representation of it, and is not reducible to either one or the other.

> The meaning of a proper name is the object itself which we designate by using it; the idea which we have in that case is wholly subjective; in between lies the sense, which is indeed no longer subjective like the idea, but is yet not the object itself. (Frege [1892b] 1952: 60)

1.1.4. Intensions and possible worlds

If sense is a non-psychological concept, then the concept of intension used in contemporary model-theoretic semantics is even more abstract. Intension, introduced by Carnap (1947) as a development and reformulation of Frege's notion of sense, also possesses a cognitive but not a psychological valency. This valency was gradually to disappear in subsequent developments, particularly in the work of Montague, where intension is simply a mathematically definable function. But let's look now at the development of these ideas.

Carnap developed the concept of intension to resolve certain problems, par-

ticularly that of so-called opaque or non-truth-conditional contexts, in which the truth value of an utterance does not depend univocally on the truth value of the component utterances that appear with it. Typical examples are completive clauses following verbs of propositional or "psychological" attitude such as *believe, hope, regret*, and so forth.[10] In these cases we speak of intensional predicates and intensional contexts. But what exactly does intension mean?

A particularly interesting proposal, which comes from modal logic and adopts the concept of possible worlds[11] for the analysis of intensions, was put forward by philosophers like Carnap (1947), Kripke (1963), and Montague (1974). Let's take an expression like *the woman who is president of Italy*. We understand this expression even though the president of Italy is not a woman, and therefore the meaning of the expression cannot designate anything in our world, given that it does not designate anything. The meaning is an intension, a function to a possible world where Italy has a female president (and where the expression has an extension). We can thus think of intension as an extension in a possible world, or rather as what manages to connect language with the world, whether it be a real world or a possible world, by relating an expression with its extension (thus determining the extension). To put it in more rigorous terms, we can say that the intension of a linguistic expression is a function which fixes its extension in every possible world; it is therefore a function from possible worlds to extensions. The intension of the expression *Tom*, for example, gives us for every possible world the extension of the name in that world, which in this case is an individual. Intensions are different functions according to the type of linguistic expression which we consider: the intension of a sentence (proposition) is a function from possible worlds to truth values, the intension of a predicate is a function from possible worlds to sets, and the intension of an individual term is a function from possible worlds to individuals.

This is the formal system on which the grammar of Montague is based; developed in the sixties, it has been one of the most influential versions of intensional semantics based on the notion of possible worlds to have circulated in linguistic circles.[12] According to Montague, there is not in principle any theoretically significant difference between the study of formal languages and that of natural languages; in this respect, the semantics of a natural language is nothing other than a meta-mathematics that interprets syntax. Montague sees syntax and semantics as having a parallel construction: syntax characterizes primitive expressions according to syntactic categories and then establishes through rules how expressions can be combined on the basis of the syntactic categories to which they belong. Each syntactic category has a corresponding semantic type, just as each syntactic rule has a corresponding semantic rule which assigns intension to the linguistic expression. The intension of a complex expression is formed from the intensions of the simple expressions which make it up. In short, the syntax of language is closely connected to its semantics; syntax represents a kind of map for semantics, indicating how the meanings (i.e., intensions) of parts combine to form the overall meaning. This way of conceiving of the relation between syntax and semantics could be characterized as isomorphism between the two components,

and is quite different from the prevailing position in linguistics, particularly in Chomskian generative linguistics, where syntax is considered to be autonomous.[13] What the two models do have in common is the declared need for recursive principles and rules in both semantics and syntax.

Montague's is perhaps the most developed and successful of the model-theoretic semantic theories that make use of possible worlds,[14] and is still a point of reference (and heated discussion) among linguists and psychologists. His theory has the merit of outlining a general framework for the formal treatment of natural languages, and of applying it to a sizeable fragment of English. However, the model has certain problematic aspects, some of which are internal to it, and others of which are more general and are found in other theories. The general issues that are most relevant to the present discussion, because they affect all the basic theoretical assumptions of model-theoretic semantics and in particular the very concept of meaning which it implies, will be dealt with in the next section. First I will point out some of the more "technical" difficulties of Montague's theory, though of course these inevitably relate to basic theoretical issues.

The main problem is the concept of intension itself, and the identification between intension and the meaning of an expression. According to Montague, synonymy and identity of intensions are one and the same, but this assumption has a number of highly problematic consequences. Remember that intensions and extensions are entirely interdefinable, given that intensions are functions from possible worlds to extensions. Statements representing necessary truths like:

Two plus two equals four.
Three plus two equals five.
If the cat meows, the cat meows.

are by definition true in all possible worlds and consequently always have the same truth value. As their intensions are functions from possible worlds to the truth value, they will also have the same intensions and so, given that meaning and intensions are identical, they should have the same meaning. But this conclusion clearly runs against our intuitions about the meaning of these statements; no competent speaker of English could consider these three statements to be synonymous, even though they are all true. Intension, then, seems to be too coarse-grained a concept to grasp linguistic meaning, given that there can clearly be differences in meaning without corresponding intensional differences.

Introducing the concept of intension has led to the loss of one of the important intuitions present in Frege's distinction between *Sinn* and *Bedeutung*, which allowed us to keep separate the *meanings* of two expressions like *Tully* and *Cicero*. The difference in the "route" by which one arrives at the same extension represents a difference in meaning which is captured by Frege's concept of sense, but is completely lost in Montague's notion of intension, which is identical to meaning. We could say that intension is collapsed onto extension (as we have said, they are completely interdefinable) and is thus unable to mediate between expression and reference, as Frege's notion of sense does. The limited mediatory capacity of in-

tension depends ultimately on the fact that it is a mathematical function totally lacking any cognitive value, which, by contrast, Frege's concept of sense retains.

There is a similar problem in the case of predicates of propositional attitude, namely that intensions as posited in the semantics of possible worlds do not provide an adequate instrument for our intuitions about meaning. We know that if two statements are logically equivalent they will have the same intension. It should therefore be possible to substitute them in any other statement without altering the overall truth (given that they have the same truth value in all possible worlds). However, such a substitution is not straightforward in statements containing predicates of propositional attitude like *know* or *believe*. Statements (1) and (2), for example, do not necessarily have the same truth value:

1. John knows that 2 + 2 = 4.
2. John knows that the square root of 289 is 17.

because it is easy to imagine a situation in which the same person knows that 2 + 2 = 4 but not that the square root of 289 is 17, even though both are mathematical truths and consequently logically equivalent statements. The inability to account for verbs of propositional attitude is considered by many to be one of the most serious drawbacks of possible worlds semantics[15] and there are few people who would argue today that it has been successfully resolved.

Of the various proposed solutions, one of the most interesting uses the concept of intensional isomorphism already advanced by Carnap (1947), and suggests a way of perceiving synonymous relations that is more in tune with linguistic intuition. Instead of synonymy being equivalent to the identity of intensions, as in model-theoretic semantics, intensional isomorphism considers the internal structure of expressions: two expressions are said to be intensionally isomorphic if they have the same internal structure and are composed of constituents that have the same intension. In reality, two intensions may be identical in terms of their arguments and values, but not in their internal structures, and this definition is closer to the intuitive notion of synonymous relations whereby differences in form imply differences in meaning.[16] For this reason, functional isomorphism is conceptually more akin to the linguistic approach, above all those linguists who are particularly attentive to relations between form and meaning, such as those working in generative semantics.[17] The most significant aspect of the proposal is the attention it devotes to the internal structure of the properties that contribute to determining the meaning of an expression. Meaning is seen as being more complex and more finely articulated than the functions determining extensions in various possible worlds. Rather, it involves the compositional properties of expressions, through which reference is then determined.

1.1.5. The drawbacks of model-theoretic semantics

The foregoing observations bring us to the question of the nature of meaning in model-theoretic semantics and the difficulties that result. There are two main

problems: the psychological plausibility of these models, and the descriptive adequacy of model-theoretic semantics and its effective capacity to account for the vast range of linguistic phenomena. I will begin with the second point.

The discussion of intensional isomorphism revealed two ways of considering meaning. In logical semantics, meaning is an abstract mathematical construct which serves to define truth conditions. In particular, in possible worlds semantics, this construct is entirely definable in terms of set-theoretical notions (sets and functions).[18] Alongside this definition of meaning (which I will call M1), there is, however, an intuitive and still pre-theoretical meaning (which I will call M2) concerning specific differences in the meaning of expressions, above all simple expressions like single lexical units. This pre-theoretical notion forms the basis of linguistic semantics; for linguists, the description of the meaning of a language is above all the representation of the various sense relations that exist between single expressions, together with their internal composition. This intuition is completely lost in model-theoretic semantics, not only because of the already-mentioned difficulty of incorporating the idea of M2 (differences in meaning) into an M1 theory of meaning (a mathematical construct), but also for other, more structural, reasons. The rules of model-theoretic semantics tell us how to derive the interpretation of complex expressions from simple expressions in a way that is quite independent of the specific individual expressions which we chose. Moreover, model-theoretic semantics has effectively nothing to say about the interpretation of these individual expressions.

If we take Montague's semantic model, we find that the intensions of simple expressions (on the basis of which we build the intensions of complex expressions) are determined only in terms of their logical type. This distinguishes, for example, the intension of a transitive verb from that of an intransitive verb, but does not permit any further differentiation within a particular syntactic category, such as transitive verbs. So, although we can distinguish *John runs* from *John loves Mary*, we cannot make any distinction between *John loves Mary* and *John hates Mary*. In order to be able to do so we would need to know what function is the intension of *love* and what is the intension of *hate*, or, as Johnson-Laird (1983: 172) puts it, "what information is in the 'body' of the function corresponding to the intension of a predicate." This is not, however, specified by model-theoretic semantics. We only know the logical type of the function, which in this case is the same for *love* and *hate*, and indeed for all other transitive verbs, in that they belong to the same category.[19] A form of model-theoretic semantics like Montague's does not allow us to determine the meaning of simple expressions, or to explain differences in meaning between them. Although this seems to be far removed from our most immediate intuitions about meaning, it is actually explicitly upheld by those who support model-theoretic semantics. Thomason, for example, in his introduction to Montague, states that

> we should not expect a semantic theory to furnish an account of how any two
> expressions belonging to the same syntactic category differ in meaning ... It

would be unfair and unproductive to require a theoretician, particularly in the early stages of developing his theory, to focus his attention on questions such as these. These are matters of application, not of theory. (Thomason 1974: 48–49)

This position effectively implies the exclusion of the lexicon from the field of semantic theory:

> The problems of semantic theory should be distinguished from those of lexicog-
> raphy. It is the business of semantics to account for meanings. (Ibid.)

The M2 notion of meaning thus not only remains unconsidered, but is judged unimportant and irrelevant. But is it possible to exclude lexical meaning from semantics? If this seems unacceptable to linguists, it is also much debated among philosophers.[20] It is not only a question of plausibility; the non-specification of lexical constituents has devastating consequences for the very determination of truth conditions. In fact, this empties semantics of all specific content, with the result that truth conditions can only be determined in a virtual way, given that the function of interpretation at a lexical level is not specified. The irony, as Marconi has observed, is that model-theoretic semantics, which hinges on the concept of truth conditions, is not in a position to actually determine them, at least not for the majority of statements, nor is it able to "provide content for the distinction between the meaning of 'the cat is on the mat' and 'the book is on the table'" (Marconi 1992: 439; my translation).

This explicitly upheld *contentlessness* of model-theoretic semantics[21] lies at the origin of the main differences between formal semantics and linguistic semantics in the treatment of linguistic phenomena, many of which linguistic semantics differentiates between, while formal semantics does not. One example among others pointed out by Frawley (1992) concerns the differences between the quantifiers *each*, *every*, and *all*. In formal semantics, they are all represented by the universal quantifier, even though they possess specific differences of content: *all* has a collective or distributive nature, while *every* and *each* are only distributive. This difference may be empirically significant, as we can see from the following sentences:

1a. All the boys lifted a truck.
1b. ? Every boy lifted a truck.
1c. ? Each boy lifted a truck.

The oddity of (1b) and (1c) depends on the fact that the use of *every* and *each* implies a distributive reading, which appears strange (or superhuman) because of the sentences' specific semantic content.

Apart from quantifiers, many aspects of natural languages appear pertinent to linguistic semantics but cannot be dealt with by formal models. Some of these regard formal differences relating to functionally different aspects of statements, such as the linear order of elements. Consider the following pairs:

2a. The candidate is untidy, but competent.
2b. The candidate is competent, but untidy.

3a. Yesterday, Mark did not do anything at all.
3b. Mark did not do anything at all yesterday.

In truth-functional terms, the sentences in each pair are evidently equivalent, but in fact they differ systematically in terms of their contextual distribution. These differences have been extensively studied in functional and pragmatic approaches;[22] in (2), they concern linguistic argument structures, while in (3) they involve a different distribution of new and old information.

Finally, there are cases of lexical substitution which modify the point of view but not the truth value of the statements in which they occur. Consider, for instance, the following pairs of statements:

4a. The glass is half full.
4b. The glass is half empty.

5a. The glass is on the table.
5b. The table is under the glass.

These examples have the same truth conditions, given that it is difficult to imagine a situation in which one of the sentences in each pair is true and the other false, but they do not have the same meaning. The difference in perspective between the sentences, which many linguists consider to be an integral part of meaning, depends on the inscription of a subjective point of view within the statements and on the resulting orientation, a process that has been widely studied in linguistics and semiotics. We could give many other examples of the same problem, namely the discrepancy between two different ways of conceiving of the same meaning and the impossibility of wholly translating one into the other.

The difference in the lexical content of the sentences above does not determine different truth conditions and so is not revealed on a truth-functional level. In other words, synonymy as an identity of intensions does not correspond to the linguistic notion of synonymy as a resemblance of content.[23] In natural languages, for example, two expressions may be partially synonymous while differing in terms of perspective, the linguistically marked presence of a subjective point of view; alternatively, they may possess an evaluative and emotive component (think of pairs like *stingy* and *thrifty*) that does not alter the overall truth value of the sentences, but does modify the meaning.

A formal theory like model-theoretic semantics is explicitly abstract, without subjective elements of meaning; the notion of truth utilized is a totally objective one, in the sense that statements are true or false quite independently of our recognition of them as such, and even of their being thought of by someone. This is

certainly quite different from the notion of truth we normally refer to in natural languages, which appears not only less central but above all not of the same kind.[24] This is one of the criticisms leveled at model-theoretic semantics by semantic cognitivists, some of whom also attack its basic presuppositions as being implausible, starting with the identification of meaning with truth conditions. If, in fact, the logical notion of truth has very little psychological plausibility, the same criticism applies even more forcefully to the logical notion of meaning. Meaning in philosophic semantics is in fact independent of individual minds; the way in which expressions refer to their referents (whatever form that relation takes) is independent of the specific criteria and procedures that speakers may adopt, or of any associated mental content. Meaning is constructed as an objective entity unconnected to the mental processes which make linguistic comprehension possible; it is identified with truth conditions, objective characteristics which the world (real or possible) must possess for a given sentence to be true in that world.

It is clear why this position should have given rise to the charge of psychological implausibility: the construction of interpretation in a model does not correspond to any mental reality, and has nothing in common with what goes on in the minds of speakers, or with linguistic use and its regularities. In truth-functional semantics, there seems to be no possible correspondence between the interpretation of an utterance and real processes of comprehension. The consequence of this hiatus is that it is extremely difficult to define the semantic competence which speakers should possess.

Many supporters of model-theoretic semantics have objected that such criticisms are not actually relevant because model-theoretic theory has never claimed to provide an adequate psychological representation of meaning or to build a theory of linguistic use. Montague is very clear on this point, considering semantics to be part of mathematics and not of psychology. However, we have seen that at least in the case of predicates of propositional attitude, it is impossible to provide an adequate semantic treatment without taking on board the cognitive content of epistemic subjects. Another line is the one taken by Lewis, who argued that in fact there are two different and quite distinct fields of semantic research:

> I distinguish two topics: first, the description of possible languages or grammars as abstract semantic systems whereby symbols are associated with aspects of the world; and second, the description of the psychological and sociological facts whereby a particular one of these abstract semantic systems is the one used by a person or population. Only confusion comes of mixing these two topics. (Lewis 1970: 19)

This illustrates very well the difference between the linguistic and the philosophical approaches: many linguists consider the second alternative proposed by Lewis, or some variant thereof, as the real concern of semantics, and in many cases tend to exclude reference to the extralinguistic world from the discipline. According to Lewis, not only should the two fields not be confused, but only the first has any real right to be considered a semantic theory (remember that he stated, "Semantics

with no treatment of truth conditions is not semantics"). But even if equal importance is ascribed to the two areas of research, it remains to be seen whether they can really be separated, and whether it is possible for the study of the relationship between language and world (assuming that it should be part of semantics) to be abstract and independent of use and comprehension. Before addressing this problem, let's look in more detail at linguistic approaches to meaning.

1.2. Structural semantics

Structural linguistics sets out from the basic hypothesis that language is essentially describable as an autonomous entity of internal relations, a mutually dependent network within which linguistic items exist by virtue of each other, quite independently of any determination from outside the system. This hypothesis is at the basis of the work of Saussure, Hjelmslev, and, generally speaking, of the whole of European structural linguistics, and is the founding assumption of the scientific study of language. According to Saussure, the first task of linguistics is to isolate, among the irregular and multifarious collection of physical, physiological, psychic, and social phenomena that make up language, a circumscribed and self-sufficient entity: language as totality and principle of classification.[25] An even more coherent and precise formulation of this objective of autonomy can be found in Hjelmslev's ([1943] 1961) principle of immanence, according to which linguistic theory begins by delimiting the field of its operation, and aims at an immanent understanding of language as a specific self-sufficient structure, seeking constancy inside language rather than outside of it.

What are the consequences of conceiving of semantic analysis in this way and what theory of meaning is implied? At the level of content, the main consequence is a claim for the autonomy of semantics from any factor or element external to the linguistic system. Above all, this means autonomy from the perceived world and extralinguistic reality, as well as from mental and conceptual reality, and all our knowledge and experience of the world (what we would today call our encyclopedia).

Structural semantics was characterized from the outset as anti-referential and anti-psychological. As far as anti-referentiality is concerned, the stance adopted by Saussure is unequivocal: the linguistic sign is a two-sided entity with no triangulation whatsoever with an extralinguistic referent. In line with the structuralist system, meaning must be sought exclusively within the relations between linguistic elements, and not outside of them. The definition of structuralist anti-psychologism is more complex, particularly as regards the position of Saussure. As I have already indicated, a widespread anti-psychological attitude pervaded the cultural climate in which Saussure was working; it was rooted in the need to free the study of meaning from the introspective and psychological dimension which had previously characterized it. The progressive de-psychologizing of the sign is evident in the *Course in General Linguistics (CGL)*. The first definition of the sign

to appear is completely psychological; what was important to Saussure was to clear the field of all possible referentiality and to make it clear that the sign does not link "a thing and a name" but "a concept and an acoustic image." Also, the latter should be understood as a psychic trace and not as a material sound. The two terms of the definition are "both psychological and are connected in the brain by an associative link" (*CGL:* 66). Immediately following this, Saussure substitutes concept and acoustic image with signifier and signified, clearly distinguishing between the field of linguistics and the study of mental concepts, which belongs to the realm of psychology. The indissoluble tie between signifier and signified is what guarantees for Saussure the autonomy of meaning from all possible forms of conceptual-psychological contamination:

> Concepts like 'house', 'white', 'see', etc. considered in themselves belong to psychology. They become linguistic entities only by association with sound patterns. In linguistic structure, a concept becomes an identifying characteristic of a certain sound, just as a given sound is an identifying characteristic of the corresponding concept. (*CGL:* 101–102)

The study of meaning is thus freed from the study of concepts, and semantics from psychology; meanings can be linguistically conceived of only in terms of the relation created by the linguistic entity, the very object of investigation of the discipline itself. To recall the well-known Saussurian metaphor, signifier and signified are as inseparable as two sides of a sheet of paper, and cannot be divided without leading to an abstraction, the result of which would either be pure phonology or pure psychology.

Whether Saussure managed to completely deconceptualize linguistic meaning is a question that we will return to later. In fact, as we will see, his antipsychological attitude remains a problematic if not contradictory feature of his theory, in that some kind of psychological basis appears inevitable in defining the relations between elements in the system. Before moving on to consider this problem, however, there remains the question of what Saussure understands by meaning, given that it cannot be defined either in relation to an extralinguistic referent or by identification with a concept.

1.2.1. Meaning as value

The key notion through which Saussure attempts to achieve an entirely linguistic definition of meaning is value. Linguistic value, like monetary value, has a double meaning. Firstly, it refers to the capacity of a word to be exchanged with something different from itself, to refer, that is, to an idea or a concept. This is the meaning of a word, represented by the relation between signifier and signified. Now a relation like this has something inherently "spurious" about it, something not purely linguistic, because it refers to a "standing for" something different from itself, to an exchange with a different kind of entity, one which is not linguistic.

Neither can this mixed character be modified by the mere terminological substitution of *concept* or *mental image* for *signified.* But it is precisely the intrinsically semiotic nature of this "standing for" something else which Saussure must avoid, otherwise he will be forced outside the boundaries of the linguistic system.

This is the point at which Saussure introduces the second aspect of value, the possibility of exchanging, comparing, and contrasting a word with something else of the same nature, namely other words. The value of a term is not only fixed by its signification, that is, its exchange with a given concept, but by comparison with similar values, other opposing terms from within the system. In this way, the study of linguistic meaning is not characterized as the description of concepts, but as the description of intralinguistic relations between elements within the system. Indeed, it would appear that Saussure does not recognize the existence of an autonomous conceptual plane separable from the linguistic one, because prior to being "shaped" by language, thought is merely an amorphous mass.

We are touching here on one of the crucial points of structuralist semantic theory, concerning the relation between signification and value, or rather, between the two aspects of value itself, the conceptual and the positional. (These are the two semiotic animas of the linguistic sign, the "standing for" something different from itself and the "standing for" something similar to itself.) In other words, is there also a positive dimension to linguistic meaning in addition to the negative differential one? Although this is never unequivocally clarified in the *CGL,* because there are passages where signification, although less important, seems to co-exist with positional value,[26] it seems to me that the answer to this question is basically no. There are many passages in the *CGL* where Saussure explicitly reduces the conceptual aspect of value to the differential one:

> The conceptual part of linguistic value is determined solely by relations and differences with other signs in the language. (*CGL:* 116)

> In all these cases what we find, instead of *ideas* given in advance, are *values* emanating from a linguistic system. If we say that these values correspond to certain concepts, it must be understood that the concepts in question are purely differential. That is to say they are concepts defined not positively, in terms of their content, but negatively by contrast with other items in the same system. What characterizes each most exactly is being whatever the others are not. (*CGL:* 115)

> But it must not be supposed that the concept in question has any kind of priority. On the contrary, that particular concept is simply a value which emerges from relations with other values of a similar kind. If those other values disappeared, this meaning too would vanish. (*CGL:* 115–116)

> *In the language itself, there are only differences.* Even more important than that is the fact that, although in general a difference presupposes positive terms between which the difference holds, in a language there are only differences, *and no positive terms.* Whether we take the signification or the signal, the language