CHAPTER 2

Some views on meaning and role in reasoning

The idea that the meaning of an expression is its role in arguments, or in reasoning, has been the starting point for many conceptions of meaning which are different from the conception of meaning centred on the notion of immediate argumental role. The latter conception, which is the object of the present study, has been summarized in the Introduction and will be described in detail in the next chapters. In the present chapter, in order to draw the reader's attention to some distinctive characteristics of my view, I shall briefly survey some of the other conceptions of meaning starting from a general idea which is to some extent similar to the idea from which I start.

1. Wittgenstein's view on meaning and rules of inference.

The idea that meaning is given by those rules of use which govern the use of words in arguments, as many of the ideas circulating in philosophy in the Twentieth century, is present in Wittgenstein's writings. Wittgenstein often puts forward this view with respect to logical words like connectives and quantifiers. For example in Remarks on the Foundations of Mathematics he wrote:

We can conceive the rules of inference – I want to say – as giving the signs their meaning, because they are rules for the use of these signs. So that the rules of inference are involved in the determination of the meaning of the signs. In this sense rules of inference cannot be right or wrong.1

However, it is very important to stress that the first thesis maintained in this passage – that meaning be given by argumentation rules – does not imply the second thesis asserted by Wittgenstein – that "rules of inference cannot be right or wrong". The addition of this second thesis presupposes the idea that meaning-giving principles are beyond criticism: to criticize them would be senseless because there is no independent notion with respect to which their validity can be questioned, since those very principles constitute the notion involved. According to such a view, meaning-giving principles are immediately and trivially valid, just because they constitute the meaning of the words involved. On the basis of his

1 Wittgenstein (1956) V.23.
acceptance of both theses, Wittgenstein maintains that certain logical principles, like the principle of excluded middle\(^2\) or the classical law of double negation elimination\(^3\), cannot be criticized and thus are immediately valid. For example, as to double negation elimination (i.e. the law that \(\neg\neg S\) is equivalent to \(S\)), Wittgenstein's reasoning seems to be the following: 1) the principle of double negation elimination gives meaning to negation (i.e. to \(\neg\)); 2) meaning-giving principles cannot be criticized (any criticism would be senseless); 3) therefore double negation elimination cannot be criticized. It is clear that in order to conclude 3, premise 1 would not be sufficient and that also premise 2 is needed. However, a supporter of the first thesis (that meaning be given by argumentation rules) does not need to endorse the second thesis (that meaning-giving rules are beyond criticism). Indeed, although the first thesis is one of the basic principles that I intend to defend in this book, in chapter 5 the second thesis will be explicitly rejected. In chapter 5 I shall maintain that a language – and thereby the rules that give meaning to the words of that language – can be wrong and can be criticized.

By contending that language (and meaning-giving rules) can be incorrect, I shall part company with Wittgenstein\(^4\) and (if you allow the anachronism) I shall follow Plato. Plato's *Cratylus* begins with a comparison which is analogous with Wittgenstein's comparison in the *Philosophical Investigations* between words and the tools in a toolbox. Plato compares words with instruments of handicraft. But, differently from Wittgenstein, Plato concludes that just because words are like instruments, they can be rightly or wrongly made. An instrument is rightly made if it is adequate to its aim. Similarly a word is rightly (or wrongly) made, according to Plato, if it is (or is not) adequate to its aim of providing knowledge.

A consequence of the idea that meaning-giving rules can be incorrect is that they cannot serve for a justification of logical principles which sets out to show that those principles are true (or valid) in virtue of meaning. Even if some logical principles are constitutive of the meanings of some logical constants, the mere fact that they are constitutive of meaning does not make those principles valid. Though pluralistic with respect to the meaningfulness of different logics, the

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\(^4\) At the beginning of Chapter 1 I mentioned another feature of Wittgenstein's views which is opposed to the spirit of the present study: Wittgenstein's repudiation of the idea of a systematic theory of meaning.
conception of meaning centred upon immediate argumental role is *neutral* with respect to the question whether a logic is valid or not.

2. Short remarks on the verificationist theory of meaning proposed by Dummett and Prawitz.

In various papers and books, the first of which is the article "Truth", published in 1959⁵, Dummett has given an argument⁶ against the idea of a theory of meaning centred on the notion of *bivalent truth*, i.e. a theory according to which the sense of a sentence is given by its bivalent *truth-condition*. The upshot of Dummett's argument is that such a theory cannot satisfy the requirement of manifestability, because knowledge of the bivalent truth conditions of some sentences (sentences for which we have no guarantee that their truth or falsity can be known) is a knowledge which may transcend our capability to recognize whether the truth conditions in question are fulfilled, and – according to Dummett – there is no other specific practical ability in which knowledge of truth conditions can fully manifest itself.⁷

As an alternative to the truth-conditional theory of meaning, Dummett has proposed the idea of a theory of meaning centred on the notion of *direct verification*, which he has called *verificationist theory of meaning*⁸ and which has been defended and developed by Dag Prawitz in connection with his investigations in general proof theory.⁹ In a verificationist theory of meaning the sense of a sentence is given by conditions which fix what counts as a direct verification of that sentence (i.e. a direct way to come to know the truth of the sentence). The viability of a verificationist theory of meaning for a language depends on the fulfilment of two requirements: i) it must be possible to state, for each kind of sentence of the language, conditions of direct verification, so that the requirement of compositionality is satisfied; ii) every sound indirect (i.e. non-direct) verification must be in some sense reducible to a direct one.

Dummett's contention that we ought to abandon a truth-conditional conception of meaning and to adopt a verificationist view involves a criticism of classical logic and an argument for the adoption of intuitionistic logic. Prawitz's recursive

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⁵ Now in Dummett (1978a).
⁷ However, the thesis that there is no other practical ability in which a knowledge of truth conditions can manifest itself is criticized by Paul Horwich in Horwich (1982) and by Peter Pagin in Pagin (1987).
⁹ Cf. especially Prawitz (1973) and Prawitz (1985).
definition of valid argument provides a semantics which can be embedded in a theory of meaning centred upon direct verification and which validates intuitionistic logic. Prawitz's semantics is a development of Gentzen's idea that an introduction rule of his systems of natural deduction gives the meaning of the logical constant involved, while the elimination rules can be seen to be valid in virtue of that meaning. The introduction rules fix what counts as a direct verification of a sentence with the logical constant involved as the principal operator in terms of what counts as a verification of its subsentences. In other words, introduction rules give the meaning of logical constants in accordance with the requirement of compositionality. That's why they are immediately valid (meaning-giving rules are immediately valid). The elimination rules, on the other hand, are shown to be valid in virtue of the meaning of the logical constants by exhibiting operations of reduction which transform direct (or "canonical") verifications of the premises into a direct verification of the conclusion. In Prawitz's semantics it is possible to prove the validity of first order intuitionistic logic. But one cannot give a general justification of the classical principles rejected by the intuitionists, like the laws of excluded middle and of double negation elimination. Moreover the introduction rules for impredicative second order quantifiers, according to Prawitz's construal of compositionality, are not compositional, and thus are not acceptable as fixing the meaning of second order quantifiers, nor seem to be justifiable in any other way in a verificationist theory of meaning.

This very short description of the characteristics of the proposal that a theory of meaning should be centred on the notion of direct verification is sufficient for indicating two main similarities and three main differences between this conception of the general form of a theory of meaning and the argumental conception of meaning proposed in the present study and developed in detail in the following chapters.

The first similarity is that both kinds of theories of meaning conform to Dummett's four requirements. The second similarity is that, according to both views, the sense of an expression is given by some rules of its use in arguments. For example in a verificationist theory the sense of logical constants, in accordance with Gentzen's idea, is given by the corresponding introduction rules (the sense of conjunction is given by the rule that allows "A ∧ B" to be inferred from two valid arguments together, one for A and one for B; the sense of disjunction by the rule that allows "A ∨ B" to be inferred from an argument for A or for B; the sense of implication by the rule that allows "A → B" to be inferred...
from a valid argument for B depending on the hypothesis A, which can then be discharged, etc.).

However, this leads to the first difference between the two views. (For simplicity we continue to consider the particular case of logical constants, but what follows could be generalized). According to the verificationist view, only introduction rules of a particular form can give sense to a logical constant. Introduction rules like the introduction rules for second order quantifiers or the elimination rules for other logical constants (connectives and quantifiers) in Gentzen's systems of natural deduction cannot give sense to logical constants. In sum, the verificationist view is very restrictive with respect to the form that the meaning-giving rules must have. According to the argumental conception of meaning, on the contrary, there is no restriction on the form of the meaning-giving rules.

The second difference is that on Dummett's and Prawitz's view the meaning-giving rules are always immediately correct just because they fix the meanings of the concerned words, while, as I already stressed in section 1 of this chapter, my view is that meaning-giving rules can be incorrect, even if they constitute our understanding of the concerned words. The reason is that our understanding does not guarantee the correctness of the understood language, which depends on various other factors (as we shall see in chapter 5). The argumental conception of meaning distinguishes the conditions of understanding for a given language from the criteria of correctness of the language, whereas the verificationist view does not make such a distinction.

The third difference is that Dummett's and Prawitz's verificationism is not only a theory of understanding, but also a philosophical justification of intuitionistic logic, which is thereby put forward as the right logic. Dummett and Prawitz think that logical truths are analytic (i.e. true in virtue of meaning). On their view, logical truths are true in virtue of the meanings of logical constants explicited by the verificationist theory. The conception of understanding I shall develop here, on the contrary, by admitting the possibility of meaning-giving rules which are incorrect, rejects the view that a sentence can be true only in virtue of meaning (i.e. of understanding). In my opinion, it is not the task of a theory of understanding to decide what the right logic is. The argumental conception of meaning is pluralistic with respect to the understandability of different logics and neutral with respect to their validity.

However, the two aforementioned similarities between the verificationist view and the argumental view of meaning indicate that some conclusions to which the supporter of the latter view is led are relevant also to the development of the verificationist view. In particular, it seems that also a verificationist theory of
meaning ought to define relations of presupposition and immediate presupposition between words and sentences along the lines of chapter 3.


Also the cluster of views known under the name "conceptual role semantics" can seem to bear some resemblance to the conception of meaning based on immediate argumental role. Therefore in this section I shall shortly consider two versions of conceptual role semantics, Harman's and Field's. But since Wilfrid Sellars' paper "Some Reflections on Language Games" (1954) already contained some basic ideas of conceptual role semantics, as Harman acknowledges, I shall start with a very compressed description of Sellars' views.

3.1. Wilfrid Sellars.

In "Some Reflections on Language Games" (1954) Sellars defends the view that linguistic behaviour is a pattern-governed-behaviour. A pattern-governed-behaviour, in Sellars' terminology, is not a behaviour which just happens to correspond accidentally with the pattern which could be made explicit by formulating some rules (what Sellars calls "behaviour conforming to rules"), nor is it a behaviour which is brought about by the intention that it exhibit that pattern and which thus involves some awareness of the rules (what Sellars calls "rule-obeying behaviour"). A pattern-governed-behaviour does not presuppose an awareness of the rules, but it occurs because of the system of rules since it has been selectively reinforced or extinguished in accordance with that system of rules. Sellars' favourite example of pattern-governed-behaviour is the language of bees which arises by natural selection. In the case of a human language the adult speakers would play an analogous role of selection of a child's propensities to linguistic behaviour.

A linguistic pattern-governed-behaviour, a language game, – according to Sellars – involves ‘positions’ and ‘moves’ of the sort that would be specified by ‘formation’ and ‘transformation’ rules in a metalanguage if it were rule obeying behaviour. The rules of the language game are behavioural stimulus-response (S-R) associations of three kinds: 1) language entry transitions, where S is non-
linguistic and R linguistic; 2) *intralinguistic moves*, where both S and R are linguistic (positions in the language game); 3) *language departure transitions*, where S is linguistic, but R is not.

Twenty years later, in "Meaning as a Functional Classification" (1974), Sellars develops the idea of language as a pattern-governed behaviour and the distinction between three different kinds of rules into a *functional theory of thinking*. In this paper Sellars seems to be somewhat under the influence of Harman's views. At the beginning of the paper he declares his agreement with Harman's distinction between three levels of meaning.

According to Harman's paper "Three levels of meaning", published in 1968, there are three different approaches to language, which correspond to three different types of theories of meaning of different level (but since 1974 Harman prefers to reserve the title "theory of meaning" for the second level only): 1) the first approach studies language as *a medium in which we think*; 2) the second approach studies *the communication of thoughts through language*; 3) the third approach studies *linguistic acts as social practices*. Theories of level 1 are fundamental; theories of level 2 presuppose theories of level 1; theories of level 3 presuppose theories of level 2.

Sellars intends to present a theory of level 1, that is a theory of thinking. ‘Thinking that p’ – according to Sellars – has as its primary sense 'saying "p"' and as its secondary sense 'having a short time propensity to say "p"'. A specification of what one says when he says "p", a specification of the meaning of "p", is thus at the same time a specification of the content of one's thought. To give such a specification – Sellars maintains – is to give a *functional classification* of "p". Some "functions" with respect to which the functional classification can be performed are "purely intralinguistic (syntactical)". They are intralinguistic transitions. Other functions "concern language as a response to sensory stimulation by environmental objects". They are language entry transitions. Still others "concern the connection of practical thinking with behavior". They are language departure transitions.

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19 Cf. Sellars (1974) p. 419. But Sellars qualifies his theory as "a ‘coarse grained’ behavioristic explanatory framework" which can then be developed into a fine-grained psychological theory dealing with ‘inner conceptual episodes’ which are only in an analogical sense verbal, cf. Sellars (1974) p. 418.
What Sellars says about functional classification is not enough to judge whether his theory would satisfy the four requirements on a theory of meaning considered in chapter 1. Sellars' theory is not sufficiently developed. In particular, it is not clear how the requirement of compositionality could be satisfied. The "functions" on which the functional classification of an utterance depends correspond to behaviouristic stimulus-response associations. In section 5 of chapter 1 I have argued that a behaviouristic approach cannot account for some important normative aspects of linguistic practice and that the practical ability in which linguistic understanding manifests itself cannot be described in purely behavioural terms. Nevertheless, in a behaviouristic spirit, Sellars' goal seems to be a theory of functional role as something which is publicly checkable and completely manifestable. One cannot judge whether this goal is reached. In Harman's case, on the contrary, it seems quite clear that the requirements of compositionality and manifestability are violated.

3.2. Gilbert Harman.

Gilbert Harman's first proposal of his "conceptual role semantics" dates back to 1974.22 In his book *Thought* he distinguishes a psychological theory of the "representational character"23 or *content* of mental states from a theory of linguistic communication. He thinks that the theory of the representational character of mental states is primary and reserves the term "theory of meaning" for the theory of communication. Strictly speaking, Harman says,24 our representational mental states (beliefs, hopes, desires, fears, and other attitudes) which he calls also *thoughts*,25 are not understood or misunderstood by anyone and though they have a *content*, they – strictly speaking – do not have a *meaning*. Only sentences of the outer language used in communication are understood or misunderstood and have a meaning.

The theory of the representational character of mental states, according to Harman, should consider representational mental states (i.e. thoughts) to be *instances or ‘tokens’*26 of sentences of an "inner language" or "language of thought", sentences with which one can be in different relationships: "to believe that Benacerraf is wise is to be in a relationship to a sentence of the language of thought, and to desire that Benacerraf be wise is to be in a different relationship

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to the same sentence".27 The sentences of the language of thought are sentences of the outer spoken language (e.g. English) "under analysis", i.e. they are structures that involve the *surface forms* of sentences of the outer language conceived under particular structural descriptions and thereby coupled with their *underlying syntactic structure* so that possible ambiguities of the surface forms are eliminated.28

The meanings of sentences used in communication are determined by the *contents* of the representational mental states which they express.29 We understand a sentence used in communication by correlating it with a corresponding sentence of the language of thought. Since the sentences of the language of thought are simply sentences of the outer language under grammatical analysis, to correlate a sentence of the outer language with a sentence of the language of thought does not involve any complicated decoding, it is not a translation into a completely different language.30 The language of thought is a disambiguated counterpart of the outer language. If a speaker utters a sentence S of the outer spoken language, the hearer (belonging to the same linguistic community) associates with it a sentence S* of his language of thought. S* might be represented by the pair \(<S, D(S)>\), where D(S) is a description of the syntactic structure of the sentence S of the outer language, a description which is innnerly coupled with the surface form of S.31 The sentence of the hearer's language of thought S* – i.e. \(<S, D(S)>\) – has a content. By correlating such a content with the speaker's utterance of S, the hearer understands (or misunderstands) the utterance. That's why, according to Harman, a theory of communication depends on a theory of the content of thoughts.

What is the content (i.e. the representational character) of a sentence of one's language of thought, and thereby of any mental state (thought) which relates to an instance of that sentence? According to Harman it is *the role of the sentence in one's individual psychology*, that is the role of possible instances of the sentence *in all the functional system of one's mind*.32

This view of representational mental states is embedded in a general *functionalist conception of mental states and processes*. A sufficiently detailed

30 Cf. Harman (1975) p. 272; cf. also p. 282: "Mentalese is simply English used to think in" and p. 283: "the language used to communicate with is normally the same as that used to think with".
31 Cf. Harman (1975) p. 293: "we think with sentences conceived under particular structural descriptions".
model of a person's mind, according to Harman, represents a device, realizable as a non deterministic automaton, which is able to duplicate the person's behaviour. Abstractly, the automaton is specified by its program. Input represents the effect of perception. Output represents action. The same abstract automaton can be instanitated in different materials, e.g. in the brain or in something with different physical and chemical composition. An object instanitates an abstract automaton if its internal states and processes are related as required by the program. Mental states and processes are "constituted" by their "function or role" in such a program. A type of mental state is a "function" in a person's program.

In particular, the contents of thoughts (and indirectly the meanings of sentences expressing those thoughts) are determined by the "role" in the program of the corresponding possible instances of sentences of the language of thought:

Thoughts are to be identified, not in terms of truth conditions, but rather in terms of their potential role in a speaker's "conceptual scheme" – the system of concepts constituted by the speaker's beliefs, plans, hopes, fears, and so on, ways the speaker has of modifying his beliefs, plans, hopes, fears, and so on, and ways these modify what the speaker does.

More concisely, a person's program, when it works, modifies the person's thoughts, that is, performs reasonings. Contents and meanings depend on the roles which thoughts can have in a person's reasonings.

These ideas could be developed in different ways, some of which might perhaps be in agreement with the requirements on a theory of meaning formulated in chapter 1. For example, assuming that there is such thing as a person's program, if we defined the functional role of a word of the language of thought as given by a proper subset of instructions in the program which in some specified sense concern that word, then the functional role of the word could be separated from the whole program and from the totality of the person's mental states; thus the requirement of compositionality could be satisfied. But I think that, on the contrary, Harman's rather embryonic conception of conceptual role violates the requirements of compositionality and manifestability.

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33 Cf. Harman (1974b) p. 44. An automaton is nondeterministic if its program is such that some combination of internal states and input might be followed by at least two different results.
37 As Lepore and Loewer have remarked, the form of a theory of conceptual role is not very clear: Harman (like Sellars) does not provide a detailed account of such a theory, cf. Lepore and Loewer (1987) p. 90.
In 1987, in "(Nonsolipsistic) Conceptual Role Semantics", the last of his writings on this topic (so far), Harman summarizes his view in the following four points:

1) the meanings of linguistic expressions are determined by the contents of the concepts and thoughts they can be used to express;

2) the contents of thoughts are determined by their construction out of concepts;

3) the contents of concepts are determined by their ‘functional role’ in a person's psychology;

4) functional role is conceived non solipsistically as involving relations to things in the world, including things in the past and future.\(^{38}\)

*Prima facie*, point 2 might suggest that Harman's view be in agreement with the spirit of the requirement of compositionality. Compositionality requires that the sense of each sentence depend on the senses of its components, so that knowledge of the sense of a sentence can be acquired without an understanding of the whole language. According to Harman, the content of a thought depends on the contents of the component concepts (which are words in the language of thought).\(^{39}\) However, a theory of conceptual role in Harman's sense would be compositional only if the content of a person's thought and thus the contents of its component concepts did not depend on the contents of every other thought and concept of the same person. But it seems clear that Harman's view is, on the contrary, that the content of a person's concept – its functional role – depends on the contents of all the beliefs of that person. In *Thought*, for instance, he writes: "what our words mean depends on everything we believe, on all the assumptions we are making".\(^{40}\) Thus, a theory of conceptual role in Harman's sense is not compositional.

Harman maintains that the content of a concept is determined by its role in reasoning. But Harman's notion of reasoning is a psychological notion. Reasoning is the process through which we change our views, that is we revise our intentions and beliefs.\(^{41}\) It is a process of *psychological change*. So

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\(^{39}\) However, Harman, perhaps inconsistently, has criticized the view "that a hearer determines what the meaning of an utterance is on the basis of his knowledge of the meanings of its parts and his knowledge of its syntactic structure", Harman (1975) p. 280.


reasonings, in Harman's terminology, are different from arguments. An argument is what we publicly and intentionally put forward in order to justify an asserted conclusion, whereas a reasoning, according to Harman, may be unconscious or automatic: "it may well be that reasoning is a relatively automatic process whose outcome is not under control". Beliefs involved in reasoning can be unconscious. For example "one might explicitly believe that one's mother does not love one", because such a belief "can be explicitly represented in one's mind, written down in Mentalese as it were", even though "this belief may not be consciously retrievable without extensive psychoanalysis".

Now it should be easy to see that Harman's notion of meaning violates the requirement of manifestability and the principle that meaning is public. Assume that there are differences between the set of beliefs B1 of an English speaker S1 and the set of beliefs B2 of another English speaker S2 or that there are differences between the program P1 of S1 and the program P2 of S2. The functional role of the concept "cat" of S1 depends on all B1 and all P1. The functional role of the concept "cat" of S2 depends on all B2 and all P2. So when the speakers S1 and S2, in front of the same cat, attend to the same type of sentence "the cat is on the mat" coupled with the same grammatical analysis in their respective languages of thought, they are not thinking the same type of thought. If S1 says "the cat is on the mat", S2 does not associate with that utterance the thought that S1 wants to express, but a different thought (because the content is different). There is a misunderstanding between the two speakers. In general, misunderstanding is virtually inevitable, because virtually always there are differences between the beliefs and the programs of different persons. Such a misunderstanding is not a specific misunderstanding concerning only "the cat is on the mat". It concerns at the same time every other sentence, because conceptual role is holistically determined: a difference about the conceptual role of a sentence is a difference about the conceptual roles of all sentences.

The requirement of manifestability is already violated because the requirement of compositionality is violated: there is no specific publicly testable practical ability in which the specific understanding of a particular expression can be manifested. The only possible understanding is global understanding of the whole language and the only possible misunderstanding between two speakers is global misunderstanding. But one can still ask: is there any guarantee that the two speakers S1 and S2 can discover that there is such a global misunderstanding, if they want to discover it? Even if all their uses of the sentence "the cat is on the mat" in arguments are

exactly the same (they both justify the assertion of "the cat is on the mat" by pointing to the same kind of observable circumstances, they both infer from "the cat is on the mat" the sentence "there is an animal on the mat" and so on), the meanings that they attach to "the cat is on the mat" can still be different if the sets of beliefs and the programs differ. The only way to discover the difference is to make explicit all the beliefs of both speakers and their programs. But how can the speakers make explicit all their beliefs, if some of those beliefs "may not be consciously retrievable without extensive psychoanalysis"? Should they ask a psychoanalyst?

In order to discover a misunderstanding between the two speakers, one might build two theories which attribute to each of the speakers a set of beliefs, a set of intentions and a certain program. These theories could be tested by deriving consequences concerning the behaviours of the speakers, which would be compared with their actual behaviours. Each theory would contain a model of the concerned speaker's mind, the program of a non deterministic automaton which, given suitable sets of intentions and beliefs, duplicates the speaker's behaviour. Each speaker might develop theories of this kind concerning himself (or herself) and the other speakers. One might object that so far nobody knows any person's program, if there is such a thing. Thus, at present nobody can discover the many misunderstandings due to differences in programs we constantly run into, according to Harman's view. The latter might be only a temporary limitation, but it seems clear that we usually don't detect misunderstandings by developing theories of this sort. A more serious problem, however, is that, even if we imagine that a satisfactory functionalist theory of a person's psychology can be developed, such a theory would be underdetermined by the person's behaviour and practical abilities. Different choices of beliefs (perhaps of unconscious beliefs) and intentions (perhaps unconscious intentions) attributed to the speaker and associated with appropriate programs can generate the same consequences concerning the behaviour of the speaker and also the practical abilities which we would normally credit to the speaker. Different programs can underlie the same practical abilities. One can easily describe two Turing Machines which both are capable of computing the sum of any pair of natural numbers with the same efficiency, but have very different programs. Programs are underdetermined by practical abilities. There can be differences in programs which are not manifestable in any difference in practical abilities. Thus, misunderstandings which depend on differences in programs may be in principle undiscoverable.

The latter remarks show that Harman's conceptual role semantics conflicts with the thesis that meaning is public, because Harman's conceptual role semantics involves the possibility of unknowable misunderstandings depending on differences in programs. But let us assume that the speakers can discover a
difference in their programs. If two speakers were to discover a difference between their programs, they would thereby know that they attach a different meaning to every sentence of the common language, and that there is a total misunderstanding between them. Could they eliminate such a misunderstanding? Obviously, they could not eliminate it without changing their own programs, i.e. without changing not only their beliefs, but their own minds, a very drastic method of eliminating misunderstandings. But if their programs were changed, according to the functionalist conception of mind defended by Harman, are we entitled to say that they would remain the same speakers or should we rather say that they would become different persons? Should we conclude that, according to Harman, the only way of eliminating misunderstandings is to make all speakers instantiate the same abstract automaton?

3.3. Hartry Field.

In "Logic, meaning and conceptual role" (1977), Hartry Field presents a theory of conceptual role which differs in many respects from Sellars' and Harman's suggestions. In his paper Field defends what has been called a "dual aspect" view. According to Field, meaning contains two ingredients: referential meaning and conceptual role. A theory of meaning should have two distinct components, a truth-theoretic semantics – which specifies referential meaning – and a conceptual-role semantics – which specifies conceptual role.

According to Field, "truth theoretic semantics and conceptual role semantics must supplement each other". The sole notion of reference, as Frege understood, cannot account for certain important differences. Since Hesperus and Phosphorus are the same object, Field says, "Hesperus=Hesperus" and "Hesperus=Phosphorus" have the same referential meaning. But they differ in meaning. So we need a notion of conceptual role in order to explain such a difference in meaning. On the other hand, as Hilary Putnam maintained in his "Comment on Wilfrid Sellars", conceptual role does not determine the relation between language and the world. Thus, since truth conditions depend on the relation between language and the world, a pure conceptual role account of meaning would imply that meaning does not determine truth-conditions, against

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48 Ibidem.
49 Cf. Frege (1892).
"one of our most fundamental beliefs about meaning". So we need also truth-theoretic semantics.

The truth-theoretic semantics, according to Field, should be a theory of truth in Tarski's sense to which is added an account of primitive reference and satisfaction which is not simply a list of cases, as in Tarski, but a physicalistic definition of a relation between primitive singular terms and predicates on the one side and extralinguistic objects and properties on the other side. Such a truth-theoretic semantics would accomplish a real physicalistic reduction of the notions of truth and reference (which – Field says – is what Tarski aimed at).

The thesis that truth and reference ought to be explained as a physicalistic relation between signs and physical entities seems to me extremely dubious. But to criticize this physicalistic conception of truth is not my task here. What concerns me here is rather Field's notion of conceptual role.

At the beginning of his paper Field very reasonably observes that his general idea could not be discussed "in any but the most vague and impressionistic way without some fairly precise account of conceptual role". Accordingly, Field proposes a very precise account of conceptual role in terms of subjective conditional probability. He first defines the notion of a reasonable probability function. A reasonable probability function is any function $p$ such that:

i) $p$ is a dyadic function which assigns real numbers ranging from 0 to 1 to pairs of sentences: $p(A|B)$ is the probability of $A$ given $B$.

ii) $p$ satisfies seven axioms which are a variant due to William Harper of Popper's axioms for conditional probability dealt with in Appendixes IV and V of The Logic of Scientific Discovery.

iii) $p$ satisfies certain additional conditions formulated by Field in order to deal with first order quantified sentences.

"A is certain with respect to $p$" is defined as "$\forall C[p(A|C)=1]". "A legitimizes B with respect to $p$" is defined as "$\forall C[p(A|C)\leq p(B|C)]". "A is equipollent to B with respect to $p$" is defined as "A legitimizes B with respect to $p$ and B

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53 Field has defended this view especially in Field (1972).
54 Cf. section 2.2 of chapter 6.
SOME VIEWS ON MEANING AND ROLE IN REASONING

legitimizes A with respect to \( p \)", which is equivalent to "\( \forall C[p(A|C)=p(B|C)] \)". Field thinks that reasonable probability functions can be assigned to individual speakers. A reasonable probability function \( p_1 \) assigned to a speaker S1 represents the actual degrees of conditional belief of the speaker S1. \( p_1(A|B) \) represents the degree of subjective probability that S1 would attach to A if S1 were to come to believe B to degree 1.59

Assuming that a reasonable probability function \( p_1 \) is assigned to a speaker S1, Field defines sameness of conceptual role for S1 as equipollence with respect to \( p_1 \): "two sentences have the same conceptual role for a person if these sentences are equipollent with respect to that person's subjective probability function".60

Field maintains that "the meaning of a sentence is given by its referential meaning together with its conceptual role"61, so "sameness of meaning is equipollence plus sameness of referential meaning".62

An important feature of Field's theory of conceptual role is that it provides a justification of classical logic. One of Field's aims in "Logic, meaning and conceptual role" is to show that classical logic can be justified on the basis of a semantics which is centred on conceptual role and subjective probability, without appealing to the notion of truth. Indeed Field thinks of reasonable probability functions as interpretations of a first order language. In this perspective one can define a notion of probabilistic validity as follows: a sentence is probabilistically valid if, and only if, it is certain under every interpretation (i.e. certain with respect to \( p \) for every reasonable probability function \( p \)). Popper's axiomatization of probability does not include the assumption that logically equivalent sentences must have the same probability. Thus Popper's axiomatization does not presuppose the notions of logical truth and logical equivalence. But Popper was able to prove from his axioms that every classical tautology is certain with respect to every reasonable probability function \( p \) (and then one can also prove that logically equivalent sentences are equipollent with respect to \( p \)). From Field's point of view, this means that every classical tautology is probabilistically valid, which amounts to a soundness theorem for classical sentential logic in the framework of probabilistic conceptual role semantics. In his paper, Field extends Popper's result by giving a soundness and a completeness theorem for first order

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59 This holds only if B is not contradictory, cf. Field (1977) p. 391, note 15: "[...]in some cases we cannot think of \( p_1(A|C) \) as representing the probability I would attach to A if I were to come to believe C to degree 1; namely I cannot do this when C is absurd, that is when its negation is certain, for in this case \( p_1(A|C) \) will be 1 for all A; and it seems unreasonable to say that were I to accept C, I would attach probability 1 to everything".

60 Field (1977) p. 390. (Field's italics).

61 Ibidem. (Field's italics).

classical logic. According to Field, the conditions (i-iii above) fixing what counts as a reasonable probability function specify the meanings of the logical constants. The meanings of logical constants, differently from the meanings of non-logical expressions, can be specified only in terms of conceptual role, and thus Field concludes that "the [classical] logical laws hold by virtue of meaning".

Does Field's notion of conceptual role agree with the requirement of compositionality? The answer is even clearer than in Harman's case: no, it doesn't. The conceptual role of a sentence A for a speaker S1 depends on the values of \( p_j(A|C) \) for every other sentence C in the language, where \( p_j \) is the subjective probability function which is assigned to S1 and is defined at the same time for all pairs of sentences of the language. Therefore one cannot know the conceptual role of a sentence without knowing at the same time the conceptual role of every other sentence: the requirement of compositionality is not satisfied.

Since the requirement of compositionality is not satisfied, also the requirement of manifestability is violated: the conceptual role of a particular sentence cannot be completely manifestable in a specific practical ability of a speaker, because it cannot be separated from the conceptual roles of all other sentences of the language. But the question remains whether Field's conceptual role semantics agrees with the thesis that meaning is public. Assume that there is a difference between the conceptual role of A for a speaker S1 and the conceptual role of A for another speaker S2. Such a difference implies a difference in the conceptual roles associated by the two speakers to any other sentence of the common language. But ought we to conclude that there must be some difference in the practical abilities of S1 and S2 in which all the differences in conceptual roles of sentences can be manifested? The answer is: no, we oughtn't. A difference between the conceptual roles of the same sentence A for S1 and S2 implies a difference between the subjective probability functions \( p_j \) of S1 and \( p_2 \) of S2. But such a difference is not necessarily manifested in different practical abilities of S1 and S2. Given the practice of a certain speaker, according to Field "the process of assigning a particular conditional probability function" is not unique, "a particular probability function is an idealization of a person's actual degrees of conditional beliefs, and there is no reason to think there will be a uniquely best idealization". So S1 and S2 – whose probability functions we have assumed to be different – can nevertheless use language in the same way. Thus there are differences in the conceptual roles they associate to the same sentences of their common language, but such differences cannot be discovered by examining their

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linguistic practice: *Field's notion of conceptual role is in conflict with the thesis that meaning is public.*

But Field's approach has even more drastic consequences. In Harman's version of conceptual role semantics, as I have described it above, if two speakers have a different psychology, i.e. a different program, they associate different conceptual roles with every expression of their common language. The same happens in Field's version of conceptual role semantics if two speakers have a different subjective probability function. In Harman's case it seems reasonable to say that two persons have always a different program. Field writes explicitly that "different people have different subjective conditional probability functions". The notion of sameness of conceptual role is defined only within the context of the same probability function. Field declares himself "pessimistic" about the feasibility of "an account that is both clear and useful of what it is for terms or sentences in the contexts of different probability functions to have the same conceptual role". So Field prefers "to live without the concept of inter-speaker synonymy". In other words, Field abandons the idea that a sentence may have the same meaning for two different speakers (or for the same speaker at different times). What remains is only intersubjective sameness of reference, which is certainly not enough to explain how successful communication is possible (it is not enough because there are important differences in communication which do not depend on reference: the two sentences "You killed the old king" and "You killed your father" give Oedipus two very different pieces of information, though they refer to the same person).

The conclusion that has been reached so far is that both Harman's and Field's versions of conceptual role semantics violate the requirements of compositionality and manifestability, and the thesis that meaning is public. Therefore they both are very different from the theory centred on immediate argumental role that will be described in the following chapters. In addition to these, Field's theory contains two other features which distinguish it from the theory centred on immediate argumental role. First, as we have seen, Field's conceptual role semantics provides a justification of classical logic, while the conception of meaning based on immediate argumental role is pluralistic with respect to the meaningfulness of different logics, and neutral with respect to their validity. Secondly, a theory of meaning centred on immediate argumental role, as we shall see, does not imply that two logically equivalent sentences have the same immediate argumental role; on the contrary, according to Field's theory, if

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67 *Ibidem*.
two sentences are logically equivalent, they are equipollent and thus have the same conceptual role with respect to every probability function. That two logically equivalent sentences have the same conceptual role is rather implausible if a theory of conceptual role is considered a theory of understanding. Two logically equivalent sentences can be extremely different and the reasoning required to show that they are logically equivalent can be very long and complicated. In cases of this sort it is intuitively clear that we understand the two sentences in a different way, and if meaning or "conceptual role" is considered constitutive of understanding, the two equivalent sentences ought to have different meanings and different conceptual roles.

In any case, Field's notion of conceptual role is very idealized. For this reason it has been criticized by Harman.\footnote{Cf. Harman (1985), Harman (1986a) ch.3, Harman (1987) p. 66.} Field's theory of conceptual role, according to Harman, has nothing to do with the role of concepts in reasoning, because "people do not and could not operate probabilistically, since keeping track of probabilities involves memory and calculating capacities which are exponentially exploding functions of the number of logically unrelated propositions involved".\footnote{Cf. Harman (1987) p. 66.} Thus extensive use of probabilities is too complicated for finite beings.


In this chapter I have surveyed the views of different authors who in different ways hold that the meaning of an expression is its role in reasoning. Reasoning can be understood as a psychological and subjective process or as the public activity of giving arguments in order to justify assertions (and perhaps also other actions). Harman and Field are concerned with reasoning in the former sense. On the contrary — like Wittgenstein, Dummett, Prawitz, and Sellars in his "Reflections on Language Games" — in the present study I shall be concerned with the role of words in reasoning in the latter sense: the argumental conception of meaning developed in the following chapters explains meaning in terms of rules governing public arguments, and not subjective psychological processes.

Wittgenstein rejects the idea of developing a theory of meaning and understanding. Sellars simply does not offer a detailed theory. Differently from Wittgenstein and Sellars, I shall try to describe in detail a theory of meaning and understanding centred on immediate argumental role. Such a theory honours Dummett's requirements on theories of meaning. In particular, differently from
Harman's and Field's conceptual role semantics, the theory satisfies the requirements of compositionality and manifestability.

All the characteristics of a theory centred on immediate argumental role which I have just mentioned are features that such a theory has in common with the theory centred on direct verification described by Dummett and Prawitz. But a verificationist theory is very restrictive with respect to the form of the meaning-giving rules, while the theory centred on immediate argumental role does not set any restriction on meaning-giving rules. Moreover, according to Dummett and Prawitz (and Wittgenstein) meaning-giving rules cannot be wrong, they are beyond criticism, because they constitute our very understanding of the involved words. On the contrary, I shall maintain that, even if meaning-giving rules constitute our understanding of certain words, they can be wrong and can be criticized, because we can understand incorrect languages. On my view, there is a distinction to be drawn between criteria of understanding and criteria of correctness of the understood language. The correctness of a language (and of the corresponding meaning-giving rules) is relative to a particular epistemic situation and cannot be decided in advance and absolutely, once for all, by a theory of understanding, before the language is used in concrete epistemic situations. Important consequences are that a theory of understanding cannot provide a justification of a logic, differently from what Dummett and Prawitz have maintained, and that a sentence cannot be true only in virtue of meaning.

Here I have summarized differences and similarities between the aforementioned views and the idea of an argumental theory of meaning. Now it's time for me to start describing the form of such a theory in detail.