

BOOK REVIEWS

LANGUAGE AND REALITY: AN INTRODUCTION TO THE PHILOSOPHY OF LANGUAGE

Michael Devitt and Kim Sterelny

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THE MEANING OF LANGUAGE

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1 INTRODUCTION

MIT Press has given us two new introductory philosophy-of-language books, both of which fall within the category of "single-author" texts (despite the multiple authorship of one of them); that is, they are not anthologies, but presentations of the material from the perspective of the author(s). Why would a publisher issue two such texts in the same year, running the risk of having each undercut the other? One answer might be that these books address very different audiences. Michael Devitt and Kim Sterelny's *Language and Reality* is a scholarly, high-level introduction, while Robert M. Martin's *The Meaning of Language* is an elementary, somewhat simplified introduction. In what follows, I shall describe and briefly summarize the two books, and conclude with some observations and recommendations.

2 LANGUAGE AND REALITY

According to Devitt and Sterelny, *Language and Reality* "is an introduction to the philosophy of language . . . intended primarily, but not solely, as a textbook. . . . We make no pretence at neutrality. A definite theoretical perspective pervades this book" (p. ix). Of course, all "single"-author texts suffer, albeit

inevitably, from such lack of neutrality (even anthologies do, in the editor's choice of what to include and what to exclude), although the less neutral such a book is, the less it can be considered an introductory text.

Before examining the substance of this book's perspective, I should make some observations on its style: Each chapter ends with a detailed and helpful bibliographical/historical essay called "Suggested Reading". There is also a brief glossary and an index. The writing style is conversational and somewhat colorful, even sarcastic at times. For example:

Much of this work [on modal logic] is complex, difficult and technical. All of it depends to some extent on modern logic. We shall, therefore, spare you an exposition of these results. (p. 23.)

We are as enthusiastic for conquest as any causal theorist could be, but the wise imperialist knows his limitations. We think that Putnam goes way too far. (p. 75.)

The text is aimed at a wide variety of students from various disciplines, with harder passages—from as short as a part of a sentence to as long as an entire chapter—delimited by the mark **. The placement of **s is often odd: sometimes the middle of a sentence is **ed, and there is at least one un**ed sentence whose pronouns refer back to a **ed sentence! Curiously, the passage in the Preface that describes the authors' theoretical perspective is within **s!

What, then, is their perspective? It consists of four aspects:

1. *Naturalism*: "The theory of language . . . is an empirical and conjectural theory like any other. . . . [P]eople [are] . . . nothing but complex parts of the physical world" (p. x). Thus the authors are opposed to certain views of Whorf, Kuhn, Feyerabend, Putnam, Dummett, structuralists, and Wittgenstein, but they are *not* opposed to Quine (although he is only mentioned, not discussed).
2. *Functionalism*: The authors view philosophy of language as part of cognitive science; they are in sympathy with certain views of Fodor, Dennett, Lycan, and Stich.
3. The authors accept some of "the insights of transformational generative grammar, whilst remaining sceptical of its claims about psychological reality" (p. x).
4. The authors are in favor of causal theories of reference, as presented by Kripke, Donnellan, Putnam, and Field.

Whether these can all be juggled successfully is beyond the scope of this brief review. Readers of this journal should be aware that there is no mention of Situation

Semantics and only brief mention of Montague's contributions.

Part I ("Introduction") discusses ways in which philosophy is concerned with language. It discusses the nature of language for communication and for private use; it characterizes language as being stimulus-independent, abstract, arbitrary, medium-independent, productive, and powerful (in the sense of being able to talk about *anything*); and it spells out the authors' naturalism.

Part II ("Meaning") begins with a chapter on "Truth and Reference", which cites the importance of truth conditions as "central to explaining meaning" (p. 17). The authors discuss reference, syntactic structure, and "decompositionality" as aspects of explaining truth conditions. There is a **ed section covering speech-act theory, theories of questions, and Gricean implicature (all in three pages). Next, they turn to theories of proper names, as a challenge to the doctrine that word meaning = reference. They state that they "are attempting to give a scientific theory of language. There is no place in science for talk of the non-existent" (p. 27). This stands in stark contrast with their claim in Part I concerning the "power" of language. For surely there *is* a place in science for talk of nonexistents, perhaps especially in cognitive science and computational natural-language understanding, where it is essential to recognize that people use language to talk about everything and anything, existing or otherwise (including such once scientifically respectable things as phlogiston and such currently respectable but, for all we now know, nonexistent things as quarks: cf. Castañeda 1972; Rapaport 1978, 1981, 1985; Routley 1979; Parsons 1980; Maida and Shapiro 1982; Zalta 1983; Shapiro and Rapaport 1987.) Although Devitt and Sterelny introduce the notion of opacity, they decide, unfortunately, that opaque contexts "are too hard for more than a passing mention in this book" (p. 29). Finally, they offer two strategies to cope with nonreferential roles: the Fregean strategy introduces senses as new *roles* for meaning, besides the referential role; and the strategy of Alexius Meinong and David Lewis is to extend *ontology* to include possible worlds (though the authors are technically wrong here: Meinong did extend ontology, but to intentional individuals, not to possible worlds: cf. Castañeda, Rapaport, Routley, Parsons, and Zalta, *op. cit.*).

Chapter 3 ("Description Theories of Reference: Names") presents the theory of Frege and Russell, shows how it handles various problems, and raises several objections to it. The authors then do the same for the cluster theory of Wittgenstein, Strawson, and Searle. Next comes Kripke's argument against description theories, followed by the authors' claim that "We think that description theories of names are wrong not merely in details but in fundamentals" (p. 51). In Chapter 4 ("A Causal Theory of Reference: Names"), they present a simplified causal theory à la Kripke, and show how it has some of the good features of the earlier

(rejected) theories while avoiding some of the bad ones. They then develop the theory to handle empty names, existence statements, etc. Chapter 5 ("Theories of Reference: Other Terms") extends (and rejects) description theories and extends (without rejecting) causal theories to natural-kind terms and artifactual-kind terms. There is also a section on Donnellan's distinction (although it is **ed, which I find odd, given its importance).

In Chapter 6, ("Syntactic Structure"), the authors state that they "are setting aside the findings of the logicians [about syntactic structure] as too difficult for this book. . . . In the present chapter, we shall discuss the findings of the grammarians, in particular, the revolutionary findings of Noam Chomsky" (p. 89). This is, then, another major omission, one that—given the reliance of most philosophers of language on logical analyses of sentences—is difficult to comprehend in an allegedly introductory text. Nevertheless, an introduction to syntactic theory as done by (at least some) linguists *is* valuable and important, and that they give. They discuss phrase-structure trees, the notions of surface and deep structures, transformations, and such contemporary transformational theories as generative semantics, extended standard theory, and trace theory (but they do not discuss government and binding theory or, for that matter, such newer grammatical theories as generalized phrase-structure grammar or the several functional-unification grammar formalisms).

Part III ("Language and Mind") begins with a chapter on "Thought and Meaning", in which thoughts are identified with propositional attitudes. The authors take the view that "Thoughts . . . are inner states: beliefs, desires, hopes, fears, etc. . . . They are inner representations (and misrepresentations) of the external world; they have *content*" (p. 115). Further, thoughts are "language-like. . . . [They] seem to have the same semantic properties as sentences of human languages. . . . [They] have the syntax of sentences" (p. 116), and they are productive and abstract. The authors consider and reject Chomsky's and Grice's objections to this view, but "seem caught in the following circle: (a) speaker meaning is explained by thought content; (b) that content is explained by the meaning of the thought sentence; (c) that meaning is explained by conventional meaning; and (d) conventional meaning is explained by speaker meaning" (p. 124). They extricate themselves from the circle by patching up Grice's theory.

Chapter 8 ("Linguistic Competence") explains that syntax is a formal theory of symbols and that competence is a theory about human minds. This poses a problem for Chomskian linguistics, which claims that linguistics is supposed to be the study of *both*. The authors, however, "think that linguistic theories are *not* mostly about competence. By taking their theories to be about competence instead of symbols, the grammarians turn possibly true theories into almost certainly false ones" (p. 134). There is a nice philosophical analysis of

the notion of "following a rule" and an application of this analysis to the "grammarians" problem. This involves a discussion of what Devitt and Sterelny call the **propositional assumption**: a competent speaker of English is not competent in virtue of knowing *propositionally* the grammar of English. They relate this assumption to Fodor's theory of modularity, and then present reasons for doubting that a competent speaker of English is competent in virtue of *actually following* a grammar of English. Their conclusion is that "competence in a language . . . is a set of skills or abilities. . . . It consists in the speaker being able to do things with a language" (p. 148). The chapter ends with discussions of Chomsky and Fodor on innateness. Chomsky's theory is interpreted in three ways: The "boring" interpretation is that "human beings are innately predisposed to learn languages" (p. 150); the "interesting" interpretation is that "humans have an innate, richly structured, *language-specific*, learning device, and this device determines that the grammar of any language that a human can learn conforms to the universal grammar" (pp. 150–151); and finally, the "very exciting" interpretation is that "the innate language-acquisition device consists in propositional knowledge of universal grammar" (p. 151). They conclude "that it is plausible to think that there is an innate language-acquisition device, but are not convinced that this device embodies a universal grammar. We reject the view that speakers have innate knowledge of universal grammar or of anything else about their language" (p. 154).

All of Chapter 9 ("Truth and Explanation") is **ed. The authors ask, "Do we really need truth to explain meaning?" (p. 161). Their line of argument is that we *do*, because linguistics is not part of psychology; its task is to explain linguistic symbols, which are the *products* of behavior, and "truth is needed to explain the symbols" (p. 162).

Chapter 10 ("Linguistic Relativity") presents and critiques Whorf's arguments, and discusses Kuhn, Feyerabend, and the notion of incommensurability of scientific theories and scientific terms. Curiously, there is no mention of the work of Kay and Berlin on linguistic relativity. (An excellent discussion of this work, as well as that of Whorf, may be found in Lakoff 1987.)

Part IV ("Language and Realism") is a more purely philosophical defense of realism: "Physical entities . . . exist . . . [and] do not depend for their existence or nature on our minds, nor on our awareness, perception or cognizance of them" (p. 187). Chapter 11 ("Verificationism") discusses the verification theory of meaning, but doesn't given any of the strong arguments against it or even a reference to Church's refutation of it (Church 1949; cf. Ashby 1967). The chapter concludes with a detailed examination of a new form of verificationism due to Michael Dummett. Chapter 12 ("Neo-Kantianism") briefly sketches Kant's theory of

mind-dependent appearances (**phenomena**) and mind-independent things-in-themselves (**noumena**). It shows how Whorf's, Kuhn's, Feyerabend's, and even Putnam's theories are Kantian, and it rejects such neo-Kantianism. Chapter 13 ("Structuralism") contains a nice discussion of de Saussure's theory and criticizes structuralists' rejections of reference and of realism. In this reviewer's opinion, however, many of the features of de Saussurean structuralism—internal relations, holism, and autonomy—are central to computational theories of natural-language understanding (cf. Rapaport 1987).

The fifth and final Part of the book is on "Language and Philosophy". Chapter 14 ("First Philosophy") views philosophy in a Quinean fashion as "continuous with science" (p. 225). It presents the problem of universals versus particulars as a "pseudoproblem" (p. 228) and an "example of a bad theory of language leading to a bad theory of the world" (p. 229). The authors reject the ordinary-language school of philosophy as well as rejecting conceptual analysis as a way of doing philosophy: "The study of language, and the concepts it expresses, is important but it should not be identified with philosophy or even made central to it. The linguistic turn is a mistake and does not re-establish first philosophy" (p. 234). Finally, Chapter 15 is a **ed chapter on "Rational Psychology", in which the authors discuss and reject Dennett's intentional-stance theory and Davidson's anomalous monism.

3 THE MEANING OF LANGUAGE

Robert Martin's book "is written for newcomers and presupposes absolutely no background in philosophy of language, or in philosophy in general. My aim is to provide a comprehensible and reasonably thorough introduction to the field" (p. 1). Thus the intended audience is less sophisticated than that of Devitt and Sterelny's book. Unlike those authors' ** strategy, and like a good textbook, the indication of which chapters can be skipped, which are independent of others, and which are dependent upon others is in the introduction. There are annotated suggested readings at the ends of chapters, and there is an index. Although the style of writing is plain and not as pretentious as Devitt and Sterelny's, Martin can be equally "down to earth" at times: after quoting Berkeley as saying, "All of which seems very plain and not to include any difficulty in it", Martin observes, "Beware when philosophers say things like that last sentence!" (p. 24). As with the other book under review, there is no discussion of situation semantics or Montague grammar.

The book is divided into two parts. The first, "Language and Minds" is "about what language is *for*" (p. 2). It begins with a chapter on "The Structure of Language", which discusses infinity and novelty as two features of language. Phrase-structure grammar is presented, quite nicely, as a way to explain these features,

and there is an excellent discussion of recursive rules. There is an elementary discussion of surface and deep structure, with a mention of transformation rules, but only an overly simple example for an artificial language, the sole purpose of which is to highlight the distinction between syntax and semantics: "The rest of this book deals in one way or another with what this thing called meaning might be" (p. 17). I find this order of introducing linguistic facts *before* philosophizing about them quite pedagogically congenial.

Chapter 2 ("Meanings as Ideas") begins by setting up the distinction between speaker's meaning and sentence meaning. The "idea theory of meaning" (viz., "words express the speaker's thoughts"; p. 20), is given as an example of speaker's meaning, and an argument against it, based only on *word* (and not *sentence*) meanings, is given.

Chapter 3 ("Innateness") is an optional chapter, but it is not clear why it *follows* Chapter 2). It presents a sketch of Chomsky's arguments for innateness, followed by several replies. But whose replies are they? Martin provides no key to the literature. This is a general problem with many single-author texts and is a specific failure of this one. There is, however, a referenced discussion of Fodor's theories about the language of thought, viewed as an "extension of the innateness hypothesis" (p. 32). Chapter 4, a nonoptional chapter with the uninformative title, "Going on in the Same Way", depends on the discussion in the optional Chapter 3! It discusses inferring general rules from finite samples, and it discusses the *grue/bleen* paradox.

Chapter 5 is on "The Private Language Argument", presented as an argument against the notion of speaker's meaning. Chapter 6 ("Radical Translation") discusses Quine's theories of radical translation, holism, and the analytic/synthetic distinction, relating the radical-translation argument to Whorf's arguments. Chapter 7 ("Are Rules Central to Language?") is optional. It examines arguments of Quine, Ziff, and Searle on the issues of the nature of rules and rule-following, and whether they are important for understanding language.

Chapter 8 ("Conventions") discusses David Lewis's theory of convention as an explanation of "what sort of social arrangement the existence of natural languages actually represents" (p. 77). Chapter 9 ("Speech Acts") discusses Grice's theory of speaker's meaning and shows how to modify it to handle sentence meaning. The notions of speaker's meaning and privacy are related to Whorf's arguments.

Chapter 10 ("Animal and Machine Language") is optional. It contains a rather sketchy overview of some of the issues involved in the controversy over whether chimps can be taught language. There is also a discussion of the problem of other minds and whether animals and machines that exhibit (some of) the same behavior as humans "can be counted as having a mental life" (p. 102). This chapter also contains a brief introduction to

propositional attitudes and a very brief discussion of whether animals or machines can have them.

Part II is titled "Language and Things" and is about "the connection between bits of language and the bits of the world each is *about*" (p. 2). It begins, in Chapter 11 ("Function and Object"), with an investigation of "the connection between words (and sentences) and things, leaving out the detour through ideas" (p. 111). Martin "call[s] 'the father of' an *object* \rightarrow *object function*, abbreviated $o \rightarrow o, \dots$ [which] means that 'the father of' takes an object as argument and yields an object as value. (An object is abbreviated by *o*.)" (p. 113). This is curious, since I would have thought that 'the father of' would be an NP \rightarrow NP function. In any event, Martin then does something that I heartily disapprove of, especially in (what is merely) an introductory text:

The notation I use in this chapter, the following notation for functions, and the trees analyzing sentences (introduced in what follows) are not standard logical notation. I use them because I think they are easily learned and clearly represent the structural features they analyze and are in these ways superior to standard notation. For readers already familiar with standard logical notation, however, I sometimes, when things get a bit more complicated, give the equivalent standard logical notation. If you are not familiar with modern symbolic logic, you can safely ignore these. (p. 113)

But why introduce nonstandard notation, especially if it has to be given up "when things get a bit more complicated", if you are not trying to show that it clarifies some issue in a new way? It certainly won't help the reader follow the discipline in the standard literature. What's even more curious is that the "nonstandard notation" is akin to that of categorial grammar, but with no mention of that fact or even a reference to any of the literature on it!

Predicates are analyzed as $o \rightarrow v$ (where v is a truth value; an analysis attributed to Frege); adverbs are treated as $(o \rightarrow v) \rightarrow (o \rightarrow v)$; and, for conjunctions of predicates, *and* is analyzed as $(o \rightarrow v) \rightarrow [(o \rightarrow v) \rightarrow (o \rightarrow v)]$. For example, *Fred is a fat professor* is analyzed as in Figure 1.

This analysis is continued in Chapter 12 ("Quantifiers"): quantifiers are treated as $(o \rightarrow v) \rightarrow v$, *or* is treated like *and*, the *not* of predicate negation as $(o \rightarrow v) \rightarrow (o \rightarrow v)$, and the *it is not the case that* of sentence negation as $v \rightarrow v$.

In Chapter 13 ("Definite Descriptions"), Martin discusses the problem of nonreferring definite descriptions: what to do about *the daughter of Igor* if Igor has no daughter. He gives Frege's answer (take the output of the function to be the null set), and discusses its notorious difficulties for *natural-language* semantics. He then turns to Russell's analysis in terms of existence and uniqueness conditions, and gives Donnellan's theory as an argument against Russell. (Note that one book's **ed section is another's nonoptional one.) This

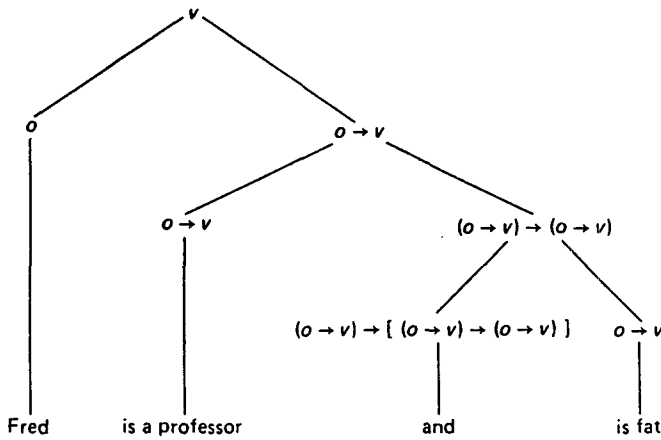


Figure 1. Martin's analysis of *Fred is a fat professor*.

is followed by a brief discussion of Searle's theory of truth-value gaps.

Chapter 14 ("Extensionality") contains a clear presentation of the differences between extensional and nonextensional contexts. But the discussion of the latter is odd. Here is the example of a nonextensional context that Martin uses to show that the referent of a sentence is not its truth value:

Fred went to the store and then ____.

Filling the blank with

He went home.

and

He woke up that morning.

—both assumed to be true—yield, respectively, a truth and a falsehood. But surely that is a highly nonstandard example of a nonextensional context! The chapter ends with the introduction of states of affairs as referents of sentences, in order to preserve the extensional theory of meaning.

In Chapter 15 ("Modal Contexts and Possible Worlds"), Martin shows why modal contexts are non-extensional, and he discusses and rejects (on grounds having to do with the analytic/synthetic distinction) quotational interpretations of modal contexts as a way of making them extensional. This is followed by discussions of the use of possible worlds for giving semantics for the modalities and of rigid designators. Chapter 18 ("Psychological Contexts"), which might better follow Chapter 15, discusses propositional attitudes in connection with extensionality and possible worlds.

Chapter 16 ("Proper Names") introduces Russell's theory of names as disguised definite descriptions and Kripke's theory that names are rigid designators. There is also a version of Putnam's twin-Earth example, although Martin offers it as an argument against Russell. Chapter 17 continues the examination of proper names

and definite descriptions, introducing the causal theory of proper names.

Chapter 19 ("Sense and Reference") introduces Frege's theory of senses as a way of resolving issues about nonreferring names and nonextensional contexts. Martin objects to senses on the following grounds: "senses are subjective . . . perhaps private and vary from individual to individual" (p. 184). But this confuses Frege's notion of "idea" with that of "sense"; what Martin says is simply not true of Frege's senses (Frege 1892, 1960: 59–60). The chapter also presents a theory, *without* senses and internal representations, that purports to account for nonextensional contexts by, roughly, treating them as *de re* (although that term is not used).

Chapter 20 discusses indexicals, proper names, and propositional attitudes. Indexicals are analyzed in Martin's categorial theory as $o \rightarrow o$. There is even a discussion of Hector-Neri Castañeda's theory of quasi-indicators, although they are not called that, nor is there any reference to Castañeda's writings (e.g., Castañeda 1967, 1968).

Chapter 21 ("General Terms") covers descriptivism, accidental and essential properties, proper names, natural kinds, and "unnatural" kinds. The book ends with two optional chapters on "Truth and Meaning" and "The Boundaries of Meaning". The first discusses Davidson's truth-conditional theory of meaning and briefly compares Davidson and Quine. The other looks at "[h]ow language functions in nonliteral ways" (p. 217), covering Grice's theory of implicature, metaphor (Grice, Searle, and Davidson—but not Lakoff and Johnson), and further discussion of Searle's and Davidson's views.

4 CONCLUSIONS

The two books under review are very different: Devitt and Sterelny's is more accurate and scholarly in its references to the literature, far richer, and philosophically sophisticated and original. The tone of their book is not suitable for a novice, although it could be read profitably by someone already familiar with the issues and controversies and who is looking for an overview. In contrast, Martin's book is more textbookish. It would be suitable *at most* for a novice—it's clearly written and easy to read, but it is inaccurate and oversimplified in spots.

For a typical reader of this journal wishing to learn some philosophy of language and having only these two texts to choose from, Devitt and Sterelny's would be the clear choice, as long as their theoretical stance is kept firmly in mind and not taken for granted. Far better would be not to rely solely on their book, but to use it as a guide to the primary sources.

However, a single-author text can be preferable for undergraduate students, who, being used to such texts, might have difficulties reading anthologies, in which there are abrupt shifts in style and level of clarity, and

even inconsistencies(!), among the different authors. Anthologies, in a discipline such as philosophy of language, are better in that they (usually) contain primary sources. My own preference when teaching philosophy of language is not to use a single-author text (except at most to supplement the primary sources and to serve as a guide to the problems and the literature, for the student who prefers such a guide). Rather, I have the students read original sources, while I provide background, connecting material, and explications in lectures.

To sum up, as a "single"-author text, Devitt and Sterelny's book is probably better than Martin's, but the appropriate audience for it (advanced undergraduates at the very least, graduate students (or beyond) at best) could do as well with an anthology. It would certainly serve as an excellent, if somewhat idiosyncratic, supplement to an anthology. Martin's book would be better for (primarily undergraduate) students who need the security of a single-author text, but the instructor would *need* to correct the errors along the way. It could, in any case, be usefully supplemented by an anthology of primary sources.

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NATURAL LANGUAGE GENERATION: NEW RESULTS IN ARTIFICIAL INTELLIGENCE, PSYCHOLOGY, AND LINGUISTICS

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(Department of Experimental Psychology, University of Nijmegen)

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Reviewed by
Marie Bienkowski
SRI International!

Natural Language Generation is a collection of papers that were presented at the Third International Workshop on Natural Language Generation in Nijmegen, The Netherlands, on August 19-23, 1986. Instead of a soft-cover proceedings, the workshop contents are captured in this hardcover book containing edited versions of the papers. The contributions are from computational linguistics, linguistics, and psychology. In the preface, Kempen, the editor, states that the interactions among workshop participants demonstrated how much these different disciplines share. Unfortunately, the interactions do not appear to be reflected in the edited versions of the papers, even though they might have been of interest to non-attendees.

Language generation research has been viewed as the poorer cousin of work on language understanding. This has been true of computational work as well as psychological research. People sometimes claim that until computers have something to talk about, language generation is not worth studying. Or, they assert that language understanding is much 'harder', so is more deserving of attention. This book presents the work of researchers who have ignored such pronouncements,