Natural Language Semantics

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This is a large volume, and it contains multitudes. Semantics is construed in a broad sense as the study of how meaning is communicated through the medium of language in a social context, taking account of inferences the hearer is expected to make on the basis of such factors as linguistic knowledge per se, context and "co-text," encyclopedic knowledge, conventions of politeness and cooperative behavior, and the relative social status of speaker and hearer. The book ranges over a variety of approaches that have addressed these issues, including philosophy of language, lexicography, formal (logic-based) and cognitive semantics, frame-based knowledge representation, pragmatics, and anthropology. However, the result is more than a catalogue of theoretical tools and frameworks; throughout the book, Allan keeps in view an underlying philosophy that "meaning is cognitively and functionally motivated."

Chapters 1 and 2 introduce fundamental notions such as sense and reference, extension and intension, compositionality, and speech acts. Chapters 3–5 deal with aspects of lexical semantics: Chapter 3 concerns the structure and content of lexical entries, Chapter 4 investigates the extent to which individual morphemes can be assigned semantic interpretations, and Chapter 5 contains an illuminating discussion of aspects of nonliteral word meaning such as connotation, euphemism, dysphemism, and jargon. Chapters 6 and 7 introduce the formal apparatus of propositional and predicate logic and the lambda calculus, and discuss notions of consequence such as semantic entailment and conversational and conventional implicatures. Chapters 8–10 are concerned with "cognitive and functional approaches to semantics," that is, approaches whose theoretical constructs are claimed to have some form of "psychological reality" or are motivated in terms of their "communicative functions." These chapters review topics such as frames and scripts, componential analysis, classifiers, color categories across languages, prototypes, and stereotypes. Chapters 11–13 address various issues in clausal and nominal semantics. Chapter 11 concerns modality, tense, and thematic roles, whereas Chapter 12 discusses different approaches to the semantics of verbs and other predicates. Chapter 13 grapples with some of the intricacies of quantification, number, and countability in English noun phrases, using generalized quantifier theory and a variant of ensemble theory. As far as I know, this is the first published tutorial account of the latter, which has previously only been accessible to students in Harry Bunt's rather challenging monograph (1985). We are told that Chapters 11–13 "demonstrate the application of formal methods of semantic analysis to a corpus of data." This section is likely to disappoint computational linguists, who will understand the term *corpus* in a different way, since the data in these chapters consist of a series of single-sentence (and mostly single-clause) examples apparently constructed by the author.

The author is clearly in sympathy with the cognitive semantics school, which claims to uncover "psychologically real" structures and processes involved in language use. It's not always clear to me from Allan's account what the various claims for psychological reality amount to (such as that for "linguistic categories, semantic fields, frames and the like," page 288). The methodology displayed tends to follow the standard practice of linguistics textbooks in postulating abstract analyses of examples constructed by the analyst, the reader being invited to share the analyst's intuitions about their acceptability and interpretation; there is little appeal to experimental or neurological evidence, for example. There are some fascinating discussions of various senses of words such as *back* (pages 289ff.) and *over* (pages 330–331), extended from their basic senses that are presumed to be rooted in direct physical perception. However, these do not give rise to productive procedures that could reliably generate extended senses for equivalent words in other languages, for instance, or other words denoting physical relations or body parts. An attempt to map out some common ground between the cognitive and formal approaches is far from convincing (pages 288–289, emphasis added):

> (First premise) Formal representations are created by human minds and are interpretable by human minds. *Therefore*, they have cognitive reality . . .
> (Second premise) The informal metalanguages of the cognitivists . . . are creations of deliberate, consciously contrived artifice, just as much as any formal metalanguages are.
> (Conclusion) Formalists, cognitivists and functionalists all use contrived metalanguages that have cognitive reality.

As an introduction to *formal* semantics, this book does not supersede established classics such as Gamut (1991). Definitions are sometimes unsatisfactory, effectively substituting one imprecise term for another, as when Grice's (1975) conventional implicature (CI) is defined as "implies . . . but does not entail" (page 189). The examples of CI that are offered include these: *all gold* implies that the ensemble of gold is nonempty (page 437) and *four eggs* implies *at least two eggs* (page 189). But these are surely different phenomena, the former being a defeasible convention and the latter an arithmetical consequence of the meanings of *four* and *two*. Likewise, in the chapter on quantifiers, *few students* is glossed as "very-much-less than" all contextually relevant students (page 433), though how much less counts as "very-much-less than" itself depends on context and assumptions about prior expectations (Moxey and Sanford 1993).

Every computational linguist should own at least one semantics textbook. Allan's book stands apart from many other texts in the way it conveys a real sense of the variety and fecundity of language as spoken by living, breathing human beings, rather than as a source of intriguing logicophilosophical puzzles. Nonspecialists will certainly find it an informative, albeit uneven, conspectus of paradigms and areas of inquiry in linguistic semantics, with the bonus that it is actually fun to read.

References

Bunt, Harry. 1985. *Mass Terms and Model-Theoretic Semantics*. Cambridge University Press, Cambridge, UK.

Gamut, L. T. F. 1991. *Language, Logic, and Meaning* (2 vols.). University of Chicago Press, Chicago.

Grice, H. P. 1975. Logic and conversation. In Peter Cole and Jerry L. Morgan, editors, *Syntax and Semantics 3: Speech Acts*. Academic Press, New York, pages 41–58.

Moxey, Linda and Anthony J. Sanford. 1993. *Communicating Quantities*. Lawrence Erlbaum Associates, Hillsdale, NJ.

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