

LEXICAL SEMANTICS – AN INTERVIEW WITH RAY JACKENDOFF

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REVEL – How would you define the field of Linguistics we call ‘Lexical Semantics’? How does it relate to studies about the Lexicon and the grammar of natural languages?

JACKENDOFF – One of the first things you discover when you study lexical semantics is that it’s impossible to define almost any term. There are always core stereotypical cases, but you usually find a variety of peripheral cases where you may not be able to tell whether it falls under the term or not. In the continuum of colors, where does it stop being red and start being orange? How many people have to be killed for it to count as genocide? Definitions of the usual kind can’t capture these sorts of gradient judgments, which are often fragile and context-dependent.

The term *lexical semantics* presents this difficulty in several ways. One problem is the denotation of *lexical*, ‘pertaining to the lexicon.’ The lexicon is usually thought of as a storehouse of words, so *lexical semantics* is usually taken to mean ‘pertaining to the meanings of words.’ However, there are many other meaningful things a speaker stores besides words, especially idioms like *kick the bucket* and *head over heels*, as well as fixed expressions or ‘prefabs’ such as *home sweet home*, *at the crack of dawn*, and *to make a long story short*. One also has to store special sentence forms such as *how about XP?*, *far be it from me to VP*, and *suffice it to say that S*. Not far beyond these are special sentential constructions such as the comparative correlative (*the*

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more I read, the less I understand) and the conjunctive conditional (*You say just one more word and I kick you out*). In addition, there are constructions built out of VP syntax that have special meanings, such as *Bill belched his way out of the restaurant* ('Bill went out of the restaurant belching'), *The bus rumbled down the street* ('the bus went down the street rumbling'), and *She read the afternoon away* ('she spent the afternoon reading'). Each of these phenomena involves subtleties of meaning just like those of words, so a study of so-called lexical semantics should include them.

Nor is it only that lexical semantics has to include more phenomena than just words. In studying the semantics of words, one is immediately forced to confront how words impose structure on the rest of the sentence they occur in. The classic case is verbs, whose semantic argument structure (Agent, Patient, Goal, etc.) plays a major role in determining the syntactic patterns in which the word appears. But many nouns too impose structure. A *part* must be a part of *something*, a *bride* must be a bride of *someone*, and a *sale* involves *someone* selling *something* to *someone else*. To understand the lexical semantics of quantifiers, one must understand how they take scope over the entire sentence; the meanings of wh-words involve the semantics of questions; *even* and *only* are intimately tied up with information structure (topic and focus). In other words, the semantics of words can't be dissociated from the semantics of phrases and sentences.

Word meanings also have to be teased apart from more general semantic phenomena. Consider the question of polysemy. In *The bus rumbled down the street*, do we want to say *rumble* is polysemous between 'emit a rumbling sound' and 'go while emitting a rumbling sound'? Or in the famous example of the waitress saying *The ham sandwich wants some coffee*, is *ham sandwich* polysemous between the sandwich and the person eating the sandwich? In cases like these, I would prefer to say that *rumble* and *sandwich* are not polysemous; rather, the extra interpretation comes from a general principle of semantic enrichment that is not part of the word meaning. But it's only possible to work out a theory of semantic enrichment in the context of both a theory of word meanings and of phrasal meanings.

What I conclude from these examples and many others like them is that there is no sharp line between studying the meanings of words and the way word meanings compose into sentence meanings. It's necessary to keep both in mind.

REVEL – What were the main advances to the understanding of human language that were brought to light by studies in Lexical Semantics? And what are the main topics in the agenda of a semanticist studying lexical properties these days?

JACKENDOFF – I can't speak for the agenda of semanticists in general, only for myself. But I think a lot of properties of word meanings have been established, at least to my satisfaction. Here are a few of them.

1. Word meanings are human concepts, not abstract objects that exist in some Platonic space or as patterns of occurrence in a corpus of sentences. When we study word meanings we are studying cognition. Therefore, insofar as possible, we should be seeking psychological evidence for the validity of our theoretical constructs – not only from language users, but from babies and from other primates as well.

2. Word meanings cannot be characterized as collections of necessary and sufficient conditions, as the logicians and philosophers of language have demanded. Rather, as I suggested in the previous answer, prototype effects and slippery slope effects are found everywhere, and our formalism should acknowledge this.

3. The traditional philosophical notion of language referring directly to the real world must be abandoned in favor of reference to the world *as conceptualized by language users*. We can refer to things only insofar we can conceptualize them. Moreover, many of the things we perceive “in the world,” such as numbers, values, social relations, the rules of games – and words! – are there only by virtue of human conceptualization.

4. One of the major departments of meaning is our understanding of the physical world: objects, their parts, their configurations with respect to each other, their

motions, and the forces they exert on each other. The study of the very rich language that expresses physical/spatial understanding and of its crosslinguistic variation has become a small industry among semanticists, especially in cognitive linguistics. Since spatial understanding comes to us through vision and touch, this leads to the important question of how we talk about what we see. Conversely, the richness of spatial language leads to the question of how we *see* all the things we *talk about*: the spatial axes of objects, their trajectories as they move, their manner of motion, their force dynamics, and the frames of reference in which we view them or imagine them. I have been wishing for many years that people studying the visual system might pick up the challenge posed by the richness of spatial language; for the most part they are still fixated on simple object recognition.

5. Another major department of meaning is social concepts such as theory of mind, kinship, group membership, dominance, reciprocity, fairness, rights, and obligations. Whereas spatial concepts are focused on the behavior of objects, social concepts are centered around the behavior of *persons*. Many social concepts have analogues in primate societies, but others do not, and exploring the differences gives us important evidence about what makes humans special.

6. One of the early important results in lexical semantics, due to Jeffrey Gruber, is that many semantic fields are lexically and logically “parasitic” on spatial language, in that many of the same words and grammatical markers are used, and many of the same inferential patterns apply. For instance, *go to* can be used not only for change of location (*Bill went to Brazil*), but also for change of possession (*the rent went to the landlord*) and change of properties (*Bill went from happy to depressed*). People in cognitive linguistics and embodied cognition have taken these parallels as evidence for widespread systems of metaphor in cognition. I have preferred to take Gruber’s position: the parallels are due to abstract systems of cognitive organization that can be applied to many different semantic fields. Space is the richest of these domains and probably the earliest in developmental and evolutionary terms. But in addition, each semantic field brings its own peculiarities to the system, which is why they diverge in other respects.

REVEL – Throughout the history of Linguistics, the Lexicon was often seen as a place for exceptions rather than regularities. How would you describe the importance of your own work concerning the Lexicon?

JACKENDOFF – There is this traditional idea that one should extract all the regularities from the lexicon in the form of rules. If you really try to do this rigorously, you find it's not possible. For instance, the words *refusal* and *confusion* are largely redundant, given *refuse*, *-al*, *confuse*, and *-ion*. But the lexicon still has to stipulate that these words exist, and other forms such as **refusion* and **confusal* do not. Similarly, a fixed expression like *at the crack of dawn* is made up of pre-existing words and has an almost predictable meaning, but it still must be listed in the lexicon as part of an English speaker's knowledge. There is no way to list these expressions without mentioning their parts and their combinations; that is, the redundancy can't be entirely avoided. Moreover, psycholinguistic research has shown that speakers even store some completely redundant words in their lexicons, for example high frequency regular plurals such as *eyes*.

As I intimated in response to the first question, I have come to see the lexicon as comprising a continuum of stored structures, all the way from individual idiosyncratic words to very general schemas that function as rules of grammar. I share this view with people in HPSG, Cognitive Grammar, and Construction Grammar. On this view there is no sharp distinction between words and rules, just a cline of generality.

The question then is what role redundancy plays in the lexicon. All these approaches (and many others) treat the lexicon as structured by means of an inheritance hierarchy, so that *confusion* is fully listed but inherits (most of) its structure from the lexical entries for *confuse* and the affix *-tion*. A word like *ablution* also inherits its affix from *-tion*, but there is no independent word **ablute* from which it can inherit its root, so this word “costs” more. A word with no internal morphological structure, such as *orchestra*, inherits from nothing, so it has to “pay full freight” for its entry.

Although the notion of inheritance is clear intuitively, it is not so obvious how to spell it out in terms of a formal theory of lexical structure. In particular, what is this notion

of “cost”? I tried to work this out in a paper way back in 1975, in terms of the “independent information content” of the lexicon. More recently, various people have proposed accounting for it in information-theoretic terms, or by proposing a way to measure the “entropy” of the lexicon. I’m guessing that when we figure this out, we’ll know something important about how memory works in the brain.

REVEL – Just as an exercise, how do you envision the future of Generative and Cognitive Linguistics for the next 20 years, considering some recent studies on Experimental Linguistics and Neuroscience?

JACKENDOFF – I really don’t like to predict the future of a field. I think it’s wonderful that we’re seeing growth in the use of experimental methods from psychology and neuroscience to explore language. But I worry that theoretical and empirical issues that have been stressed by generative grammar may get lost in the process. One of the central notions of generative grammar, the idea that there might be something special about the language faculty, has been denied by one form of associationism after another: connectionism, Bayesian learning, grammaticalization theory, usage-based learning, and embodied cognition. Yet few of the practitioners of these approaches attempt to deal with anything beyond the most elementary facts of linguistic description, much less the richness of analysis that has always been a strength of the generative tradition. To be sure, the generative tradition has had its excesses, and there are many variant generative frameworks on the market. But they all have at their root the desire to account for linguistic facts of great sophistication, such as argument structure, complementation, relative clauses, ellipsis, long-distance dependencies, quantification, anaphora, and the relation of syntax to semantics, morphology, and phonology. I would hate to see this all “dumbed down” as people move increasingly toward experimental paradigms that make detailed linguistic description harder to address. Understanding the localization and timing of language processing doesn’t tell you what linguistic *structures* are being processed, nor how these structures are encoded in the brain. At least they don’t yet.

REVEL – Could you please suggest some bibliography concerning Lexical Semantics for our readers?

JACKENDOFF –In my own work:

A User's Guide to Thought and Meaning (Oxford, 2012) for the Big Picture
Foundations of Language (Oxford, 2002), especially chapters 9-12, which deal with semantics

Meaning and the Lexicon (Oxford, 2010) reprints a number of my papers on semantics, including two on the relation of language to spatial perception, two on parts of objects and parts of events, and several on special meaning-bearing constructions.

Language, Consciousness, Culture (MIT Press, 2007), chapters 6-11 on theory of mind and social predicates

Others (these are all a little old, as I have been working on other problems in the past few years):

Paul Bloom, Mary Peterson, Lynn Nadel, and Merrill Garrett (eds.), *Language and Space* (MIT Press, 1996), a landmark collection on spatial language

Adele Goldberg, *Constructions* (University of Chicago Press, 1995), one of the founding documents of Construction Grammar

George Lakoff, *Women, Fire, and Dangerous Things* (University of Chicago Press, 1987), an important statement of Cognitive Linguistics, with extensive discussion of the complexity of word meanings

Stephen Levinson, *Space in Language and Cognition* (Cambridge, 2003), stressing crosslinguistic work on spatial language and its relation to nonlinguistic cognition

George Miller & Philip Johnson-Laird, *Language and Perception* (Harvard University Press, 1976), an early and very thorough attempt at formalizing lexical semantics in cognitively friendly terms

Eric Margolis & Stephen Laurence (eds.), *Concepts: Core Readings* (MIT Press, 1999), a major collection of psychologically based articles on concepts and word meanings.

Gregory Murphy, *The Big Book of Concepts* (MIT Press, 2002), includes among other things a good survey of different views on concepts and word meanings.

Steven Pinker, *The Stuff of Thought* (Viking, 2007), an entertaining and detailed discussion of the relation of language and thought

James Pustejovsky, *The Generative Lexicon* (MIT Press, 1995), presents and formalizes important aspects of the way word meanings interact with each other as they combine into larger phrases

Leonard Talmy, *Toward a Cognitive Semantics* (MIT Press, 2000), offers extensive discussion of spatial language, force dynamics, and many other topics

Anna Wierzbicka, *Semantics: Primes and Universals* (Oxford, 1996), an approach with which I thoroughly disagree, but which offers sensitive analyses of innumerable word meanings