

## CHAPTER 9

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# Semantics as a Mentalistic Enterprise

### 9.1 Introduction to Part III

As observed in Chapter 4, meaning is the “holy grail” not only of linguistics, but also of philosophy, psychology, and neuroscience—not to mention more distant domains such as cultural and literary theory. Understanding how we mean and how we think is a vital issue for our intuitive sense of ourselves as human beings. For most people, meaning is intuitively the central issue in the study of language—far more important than understanding details of word order or morphology.

I think linguists have tried over the years to make a big deal out of how the study of language teaches us about human nature. In the days when Deep Structure was claimed to be the key to meaning, such advertising was properly seductive. But more recently, when the parade examples have concerned nitty-gritty phenomena like pronoun use and word stress, the public has been less impressed. To be sure, there are important points to be made here about the nature of learning and innateness—but what people really want to know about is still meaning. And generative grammar on the whole has not made good on the promise so tantalizingly held forth in *Aspects*.

There is more at issue than philosophical discussions of human nature. As pointed out as long ago as Bar-Hillel (1970), potential practical applications of linguistic theory such as machine translation are hobbled without an account of meaning. Computational linguists, I am told, joke that every time they hire a theoretical linguist, their programs become less effective. The problem is that fancy syntax alone isn't that much use for machine understanding.

Most of my own work for the past thirty years has been directed toward developing an account of meaning that is compatible both with the psychological foundations of generative grammar and with the spirit of its formal technology—thus parting company with mainstream concerns in generative grammar. In the

process, I have found it necessary also to part company with much of the mainstream in semantics and philosophy of mind, in part on first principles, and in part because the sorts of linguistic generalization I have wished to express are incomprehensible in more standard frameworks. This final part of the book is devoted to a survey of the landscape of meaning from the perspective thus achieved.

The present chapter and the next are concerned with foundational issues; they are followed by two chapters that sketch a broad range of empirically based results in lexical and phrasal semantics. However, the reader should understand that in practice one cannot first establish the foundations and then go on to do the work. Rather, the empirical results are part of what motivates the search for new foundations. I am interested in constructing a stance on meaning from which it is possible to make sense of the sort of detailed empirical investigation that linguists do. The relation between the philosophy and the dirty work has to be a two-way street.

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I propose to begin from the following surely uncontroversial postulate:

**People find sentences (and other entities) meaningful because of something going on in their brains.**

That is, we are ultimately interested not in the question: What is meaning? but rather: What makes things meaningful *to people*? This anchors the enterprise both in the theory of psychology and in ordinary human experience.

A second postulate is:

**There is no magic.**

That is, we seek a thoroughly naturalistic explanation that ultimately can be embedded in our understanding of the physical world.

Such an explanation comes at a heavy price. The overall point to bear in mind is that:

**Meaning is central to everything human.**

If you are not prepared to deal with at least language, intelligence, consciousness, the self, and social and cultural interaction, you are not going to understand meaning.

## 9.2 Semantics vis-à-vis mainstream generative grammar

As already intimated, generative grammar has on the whole had little to say about meaning. Early contributions by Katz and Fodor (1963; Katz 1972), Bierwisch (1967; 1969), and Weinreich (1966), among others, were developed

in the context of the *Aspects* theory, which took Deep Structure to be directly connected to meaning. For many years Jerry Fodor (e.g. 1975; 2000a) has made a significant attempt to establish theoretical foundations for semantics in concurrence with (what he takes to be) the goals of generative grammar. But, as we will see, his conclusions are at such odds with all detailed empirical work on meaning as to discredit the enterprise in the eyes of practical semanticists.

In the wake of the Generative Semantics dispute (section 4.2), most mainstream generative grammarians turned away from the systematic study of meaning, leaving the field largely to practitioners of the newly emerging disciplines of formal semantics, computational linguistics, cognitive psychology/neuroscience, and, somewhat later, Cognitive Grammar. Although all these approaches have made important advances in understanding meaning, none makes full contact with the overall goals of generative linguistics discussed in Part I. In fact, in many instances they espouse wholesale rejection of generative grammar because of its neglect of meaning. Often this manifests itself as rejecting the notion of an "autonomous formal syntactic component" and in some cases even the notion of grammar itself. Usually the notion of innateness is vilified; and some traditions even question the notion that language is in the mind.

I suspect that the underlying reason for this crashing wave of rejections is the syntactocentrism of mainstream generative grammar: the assumption that the syntactic component is the sole source of generative capacity in language (Chapter 5). This assumption, so fundamental that it was already subliminal by 1975, has the implicit effect of (pardon the term) emasculating semantics—of giving the messages conveyed by language a far lesser role than the messenger. The alternative approaches, in revenge, have shot the messenger.

This is really a mistake. Consider our poor little sentence from Chapter 1, repeated here as (1). It is certainly a fact about meaning that (1) must be differentiated from infinitely many other sentences that mean different things, for example those in (2).

- (1) The little star's beside a big star.
- (2)
  - a. A little star's beside the big star.
  - b. Every big star is beside some little star.
  - c. Is the little star beside a big star?
  - d. The little goat is inside a big tent.
  - e. John falsely believes that the little star's beside a big star.
  - f. Throw Momma from the train.

But it is a fact about English syntax, not about meaning, that (1) must be differentiated from the strings of words in (3)—which could be the way the same meaning is conveyed in some other language.

- (3) a. The star little a star big beside is.  
 b. Big star beside little star.  
 c. The(masc. nom.) little(masc. nom.) star is beside a(masc. dat.) big(masc. dat.) star.

That is, one needs formal principles of syntax to account for basic facts concerning language-specific word order, phrase order, and functional categories such as determiners, the verb *be*, and case endings. Whether a language chooses verb-second or verb-final word order, whether it puts its adjectives before or after the noun, and whether it has a robust system of case endings or none at all—these have nothing to do with semantics.

There are indeed substantive issues about how independent syntax is from semantics. We went over some of this ground in section 6.7, where we discussed the possibility that some, though not all, syntactic structure does bear some inherent load of meaning, for instance that subjects tend to be interpreted as Agents if possible. Another relevant case prominent in the literature concerns the scope of quantification in sentences like (4a), which is ambiguous between the two interpretations suggested by the continuations in (4b, c).

- (4) a. Everyone in this room knows two languages.  
 b. —namely German and English.  
 c. —Jeff knows Georgian and German, Herb knows Hebrew and Hausa, I know Italian and English.

To be sure, these different interpretations must be distinguished in the cognitive structures associated with meaning. The question is whether they are distinguished in syntactic structure as well, at some level other than surface structure. Early generative grammar (e.g. Chomsky 1957) thought not; the *Aspects* theory (Chomsky 1965) was ambivalent; Generative Semantics (Lakoff 1970) thought so; Government-Binding Theory after the introduction of Logical Form (Chomsky 1981) thought so; to lay my cards on the table, I think not (Jackendoff 1972; 1996c). Whatever the answer, the point is that it is a major research problem, debated for the past forty years, to determine how much of meaning is directly signaled in syntax. To throw formal syntax out makes it impossible even to acknowledge the possibility of such problems.

The proper move, I suggest, is not to throw out syntax (not to mention generative grammar as a whole), but to throw out syntactocentrism. These questions can then be stated in terms of the balance of power among various generative and interface components, along lines explored in Parts I and II. We can speak of syntax as “*semi*-autonomous,” if we like; the issues then concern the degree (rather than the fact) of autonomy. And we can still acknowledge that

a theory of language is woefully incomplete without a serious account of meaning. So let us begin.

### 9.3 Meaning and its interfaces

Given the welter of overlapping positions on the issues, it makes most sense for me first to state my own aspirations for semantic theory, then compare them to various alternative traditions. I take the basic problem to be to situate the study of meaning in the study of the f-mind:

- (5) How can we characterize the messages/thoughts/concepts that speakers express/convey by means of using language?
- (6) How does language express/convey these messages?

I leave the terms "messages/thoughts/concepts" and "express/convey" deliberately vague for the moment. Part of our job is to sharpen them. In particular, one has to ask:

- (7) What makes *these* f-mental entities function as meanings?

Unfortunately, the intellectual politics begin right here: this is not the way everyone construes the term "semantics." Rather than engage in arguments based on terminological imperialism, I will use "conceptualist semantics" as a term of art for this enterprise.<sup>1</sup> Above all, I don't want to get trapped in the question: Is this enterprise really a kind of semantics or not? The relevant questions are: Is this enterprise a worthwhile way of studying meaning? To what extent can it incorporate intuitions and insights from other approaches, and to what extent can it offer insights unavailable in other approaches?

In order for a theory of conceptualist semantics to be embedded in a larger theory of the f-mind, it must be recognized that the messages/thoughts/concepts conveyed by language serve other purposes as well. At the very least, they are used by the following cognitive processes:

- Processes that integrate a linguistically conveyed message with existing f-knowledge, including understanding of context.
- Processes that draw inferences and make judgments, based on the interaction of a linguistically conveyed message with other f-knowledge.
- Processes that use linguistically conveyed messages to direct attention to and make judgments on the world as perceived through the senses.

<sup>1</sup> My own particular set of proposals, which I have called Conceptual Semantics (Jackendoff 1990a), is an exemplar of the approach but not the only possible one.

- Processes that connect linguistically conveyed messages with one's physical actions on/in the world.

This collection of interactive processes can be collected into an architectural diagram of the sort familiar from Part II. The main innovation is a dashed line marking the boundary between the f-mind and the "world," a feature to which we will return in a moment.

In Fig. 9.1, phonology and syntax have been compressed into a single interface that connects thoughts in the f-mind to noises in the world, there to be transmitted from one speaker to another. Were we to zoom in on this "language box" we would see all the elaborate architecture of tiers and interfaces in phonology and syntax discussed in Part II.

What is of interest here, however, is the part to the right of phonology and syntax: the cognitive structures I have called "thoughts" and the multiple interfaces that access them. Chapter 3 argued that the combinatoriality of language serves the purpose of transmitting messages constructed from an equally combinatorial system of thoughts: a sentence conveys a meaning built combinatorially out of the meanings of its words. So part of our job is characterizing this combinatorial system, represented by the box "formation rules for thoughts" in Fig. 9.1. This falls under question (5) above. In Chapter 12, we will see that "zooming in" on this component yields an interesting architecture of tiers, just like phonology and syntax.

Another part of the job is to characterize the interface rules that map these combinatorial structures into the purely linguistic structures of syntax and phonology—question (6). In particular, we would like to be able to account for

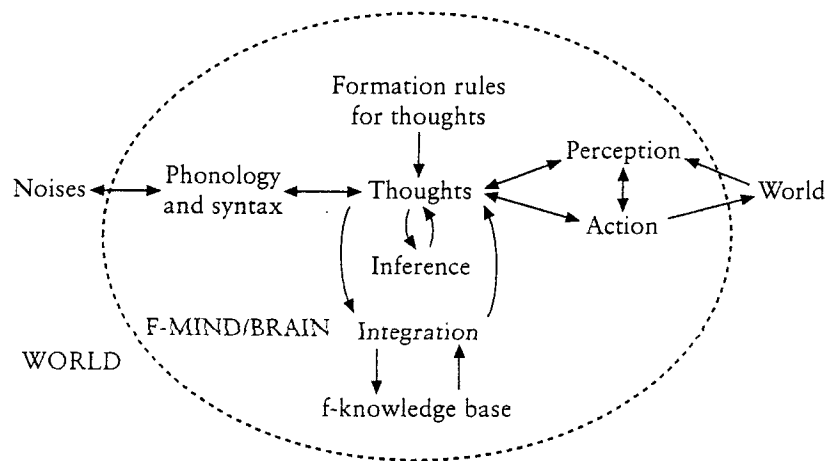


Fig. 9.1. The place of conceptual semantics in the f-mind

the way that (more or less) the same thought can be mapped into expressions of different languages, allowing for the possibility of reasonably good translation.

These two enterprises—characterizing the combinatorial system of meaning and its interfaces to linguistic expression—are closest to what is often called “linguistic semantics.” Now consider the other interfaces. The use of thoughts/concepts to produce further thoughts/concepts is what is typically called “inference” or “reasoning.” Since we are interested in the study of real people and not just ideals, this interface must include not only logical reasoning but also making plans and forming intentions to act—so-called “practical reasoning” (Bratman 1987; Kahneman et al. 1982; Gigerenzer 2000) and “social reasoning” (Tooby and Cosmides 1992).<sup>2</sup> For present purposes, what is important is that all these processes operate on the very same kinds of cognitive structure that can be expressed/conveyed by language. Thus these theories place boundary conditions on each other.

Similarly for the integration of thoughts conveyed by language with previous f-knowledge or f-beliefs. Part of previous f-knowledge is one’s sense of the communicative context, including one’s sense of one’s interlocutor’s intentions. Thus the work of this interface is closest to what is often called “pragmatics.”

The interfaces to the perceptual systems are what permit one to form a thought based on observing the world (including an internal sense of one’s own body). In turn, by using such thoughts as the input to language production, one can talk about what one sees, hears, tastes, and feels. These interfaces operate in the other direction as well: language perception can direct attention to some particular part of the perceptual field (*Do you see that bird over there? Pay no attention to the little man behind the curtain!*). Turning to the interface with the action system, this is what permits one to execute an intention—including carrying out an intention formed in response to a linguistically conveyed command or request.<sup>3</sup>

Again, it is important to stress that, in order for the kinds of interaction just enumerated to take place, all these interfaces need to converge on a common cognitive structure. Looking at thought through the lens of language alone does not provide enough constraints on possible theories. A richer, more demanding set of boundary conditions emerges from insisting that thought must also make contact with inference, background knowledge, perception, and action.

An important aspect of the present view is that thought is independent of language and can take place in the absence of language. This goes against the common

<sup>2</sup> I am inclined to think that the study of deranged (e.g. neurotic and paranoid/schizophrenic) reasoning, as well as the “logic” of dreams, fits in this department as well (Jackendoff 1992a: ch. 5).

<sup>3</sup> It should need no emphasis, of course, that if we “zoom in” on the perception and action interfaces in Fig. 9.1, we find systems at least as richly ramified as the linguistic interfaces. The vision system alone is vastly complex; it no doubt makes language look trivial by comparison. Of course it has had a lot more time to evolve too.

intuition that thought takes place “in a language,” as in “Do you think in English, or in French?” My position is that linguistic form provides one means for thought to be made available to awareness (another is visual imagery); we “hear the little voice in the head” and thereby “know what we are thinking.” Notice however that the form of the awareness in question is essentially phonological. What we “hear” is *words*, pronounced with *stress patterns*. At the same time, one cannot define rules of inference over phonological structure, so it is not an appropriate medium for reasoning. The correct level for carrying out reasoning is conceptual structure, and reasoning can take place even without any connection to language, in which case it is unconscious. The upshot is that there is a disconnection between the form taken by awareness and the unconscious form responsible for understanding. In Jackendoff (1987, 1997a: ch. 8), I argue that recognizing this disconnection helps solve a great many of the traditional puzzles surrounding consciousness.

This view of thought permits us to make contact immediately with evolutionary considerations as well. Suppose we erase the phonology/syntax interface from Fig. 9.1. We then have an architecture equally suitable—at some level of approximation—to non-linguistic organisms such as apes. They too display complex integration of perception, action, inference, and background knowledge, in both physical and social domains (Köhler 1927; Goodall 1971; Byrne and Whiten 1988; de Waal 1996). It makes evolutionary sense to suppose that some of the fundamental parts of human thought are a heritage of our primate ancestry. As observed in Chapter 8, evolution does not throw Good Ideas away, rather it elaborates and refines them.

To presume that one can invoke evolutionary considerations, of course, is also to presume that some of the overall character of thought is determined by the genome—this time in part shared with closely related species. I won't belabor the point here; we spent enough time in Chapter 4 going over what it means for a cognitive capacity to have a genetic basis. As in the case of syntax and phonology, there are two conflicting desiderata in working out a theory of the innate aspects of thought. First, other things being equal, it is desirable to keep the genetic contribution at a minimum, and of a sort that could actually be coded on the genes (if we only knew what that was!). But second, the innate basis must be rich enough, architecturally and substantively, to support the acquisition of human concepts and the role of thought in ongoing activity and experience.

Again laying my cards on the table, I see at least three major domains of thought that cry out for substantial support from a genetic basis. The first is the understanding of the physical world: the identification of objects, their spatial configurations with respect to each other, the events in which they take part and interact, and the opportunities (or affordances) they offer for action on and with them. The second is the understanding of the social world: the identification of persons, their social roles with respect to each other (including such issues as

kinship, dominance, group membership, obligations, entitlements, and morals<sup>4</sup>), and characterization of their beliefs and motivations (so-called “theory of mind”). The third is a basic algebra of individuation, categorization, grouping, and decomposition that undergirds both the previous systems as well as many others. We will see pieces of these systems in chapters to come.

In short, conceptualist semantics should aspire to offer a common meeting ground for multiple traditions in studying cognition, including not only linguistic semantics but also pragmatics, perceptual understanding, embodied cognition, reasoning and planning, social/cultural understanding, primate cognition, and evolutionary psychology. A high aspiration, but certainly one worth pursuing.

The rest of this chapter, alas, must be devoted to fending off various attempts to limit the scope of semantic theory. I hope nevertheless that something positive will come of it—that the reader will get a feel for the enterprise, and that these preliminary skirmishes will build some courage for the more difficult encounters in the next chapter.

#### 9.4 Chomsky and Fodor on semantics

One reason that semantics has played such a relatively minimal role in mainstream generative grammar is Chomsky’s own apparent ambivalence. On the one hand, he has argued vigorously for an internalist (here called “conceptualist”) approach to meaning, for instance in the papers collected in Chomsky (2000). On the other hand, aside from presenting a few telling examples, he has never attempted to develop a systematic internalist approach.

Moreover, when pressed, Chomsky expresses strongly conflicted feelings about the term “semantics” itself. I want to quote a few passages from a recent interview with him (Cela-Conde and Marty (1998). ‘An Interview with Noam Chomsky’. *Syntax* 1: 19–36, by permission of Blackwell Publishers).

From the outset, work in generative grammar was motivated primarily by issues that are usually called “semantic”. . . : the fact that a person who has had limited experience with language somehow comes to understand new expressions in highly specific ways. . . .

Personally, I prefer to use the term “syntax” to refer to these topics; others use the term “semantics,” which I would prefer to restrict to the study of what are often called “language–world” connections—more properly, in my view, connections between language and other parts of the world, some within the organism (presumably, the articulatory

<sup>4</sup> As in language, the innate component cannot specify particular social roles, morality, and so forth. It specifies only the design space within which human social systems are located, thereby aiding children in learning the social system in which they find themselves growing up. See Jackendoff (1994: ch. 15).

organs and conceptual systems, among others), some outside, like the computer I am now using. (27)

The property of referential dependence [the relation between a pronoun and its antecedent] is often called "semantic" because it plays a role in what expressions mean and how they are understood. I prefer to call it "syntactic," because the inquiry does not yet reach to language/world relations; it is restricted to what is "in the head." Analogously, we should clearly distinguish the inquiry into how the sensorimotor systems relate expressions to sounds from the study of the information that the language provides to the sensorimotor systems, and how it is constructed by internal operations. I would prefer to reserve the term "phonetics" for the former inquiry, and to regard the latter as part of syntax, in the general sense of the term, including what is called "phonology." It is important to keep the distinctions in mind. (27-8)

Use of the term "semantics" to refer to study of language-world relations and "syntax" to refer to the study of properties of the symbolic systems themselves seems to me fairly conventional. (30)

To the best of my understanding, the study of mental aspects of the world leads us to postulate the existence of a variety of cognitive systems (language among them), which have their own properties and interact in various ways. The internalist study of these systems is what I would prefer to call "syntax." The study of how people use these systems is often called "pragmatics." If semantics is understood to be the study of the relation of "words/concepts and things," where "thing" has some non-mentalistic interpretation, then there may be no such topic as the semantics of natural language. . . . In contrast, if semantics is understood to be the study of relations of language (or concepts) to the outer and inner world, then there is such a topic; it is more or less on a par with phonetics, understood as the relation of (internal) linguistic elements to (external) motions of molecules in the air and the like, but involving no notions similar to *reference*, in its technical sense. (31-2)

Clearly Chomsky has some notion of semantics in mind quite distinct from conceptualist semantics in the sense of the previous section. Carnap (1964) and Davis (1999) attribute this way of dividing up syntax, semantics, and pragmatics to the logical positivist Charles Morris. In fact, the sense of "syntax" in these passages is much broader than its normal use in linguistics: it denotes the organization of any combinatorial system in the mind. In this sense, phonology and even music are syntax too. But in the usual narrower sense of linguistic theory, "syntax" denotes the formal organization of units like NPs and VPs.

The claim of just about every theory of linguistic semantics is that meanings/concepts form a combinatorial system, that is, they have a syntax in the broad sense. But the elements of the system are distinct from those of syntax in the narrow sense.<sup>5</sup> It is the study of this system that seems to me to fall under the "conventional" use of the term "semantics."

<sup>5</sup> The couple of exceptions that I know of include Generative Semantics, where meaning was identified with underlying syntactic structure (Lakoff 1971), and the approach of Anna

Chomsky is certainly free to prefer using "syntax" in the broader sense. This is apparently the sense intended when he characterizes the syntactic levels PF (phonetic form) and LF (logical form) as "direct representations of sound on the one hand and meaning on the other" (Chomsky 1986: 68). Phonologists, phoneticians, and semanticists might be justifiably excused if they have been baffled by this characterization, given that the actual formal theory invoked in all Chomsky's writing since 1970 has been that of syntax in the narrow sense. The statements quoted above help clarify Chomsky's intention; they do not, however, clarify his practice.

In particular, consider Chomsky's example of referential dependency. He is of course correct that the relation between a pronoun and its antecedent is "in the head," and therefore syntactic in the broad sense. But since the 1960s the literature has been full of discussion about whether this relation is directly encoded in narrow syntax or whether it is encoded partly or even primarily in semantic/conceptual structure (Lees and Klima 1963; Ross 1967; Jackendoff 1972; Chomsky 1981; Lasnik 1989; Kuno 1987; Van Valin 1994; Van Hoek 1995; Culicover and Jackendoff 1995; Levinson 2000, to mention only a few of hundreds of references). To just say, "Well, I prefer to call it all syntax," without distinguishing broad from narrow syntax, is the rhetorical counterpart of the move by the opponents of generative grammar, "It's all semantics." The effect is to make it impossible to clearly articulate the issues at stake.

Let us look also at what Chomsky wishes to call "semantics." As far as I can understand this characterization, he is groping for the notion of an interface component: "semantics" is a relation between one kind of structure and another, just what interface components are designed to instantiate. But it is unclear what interfaces he has in mind. In one passage above, he speaks of the connection between language and conceptual systems and then, in the next breath, of the connection between language and his computer; in another passage, he speaks of the relation between "language (or concepts)" and the "outer and inner world." Is semantics supposed to be the connection of language to concepts, or that of concepts to something else? And nowhere does he address what I take to be the central question, the formal organization of the conceptual system. He is, however, correct in being deeply skeptical of the ordinary non-mentalistic notion of "thing," an issue to which we return at length in the next chapter.

Jerry Fodor (e.g. 1975; 1983; 1990; 1998) has spent much of his career addressing some of the problems faced by a serious theory of meaning. His approach concurs with conceptualist semantics in insisting on the importance of placing this theory in a mentalistic framework. He argues that meanings must

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Wierzbicka (e.g. 1988; 1996; Goddard and Wierzbicka 1994), who contends that word meanings are to be explicated in a sort of "Basic English," using ordinary linguistic forms.

be instantiated in a combinatorial system, and therefore that a simple semantic network account of meaning is not feasible. He is also properly concerned with issues of concept acquisition. We will come back later to his proposals for the combinatorial structure of concepts and for the nature of acquisition. For the moment I wish to concentrate simply on the term Fodor has chosen for this combinatorial system: the Language of Thought (LoT).

Like "syntax," "language" has a number of senses. First is the everyday sense: English, French, Chinese, and so forth. Languages in this sense are systems composed of phonology, syntax, and semantics, plus the relations between them established by interfaces (including the lexicon). Fodor clearly cannot have this sense in mind when he speaks of the Language of Thought: LoT has no phonology, and no (narrow) syntax. Nevertheless, the term is sometimes interpreted in this sense. For example, one sometimes encounters statements to the effect that "Mentalese/The Language of Thought is like a natural language" (e.g. Barnden 1996). This is misguided; it is comparable to saying, "A wheel is like a bicycle." Similarly, sometimes LoT is taken to be composed of "sentences in an inner/private language." But a sentence has phonology and (narrow) syntax; a thought doesn't. The same goes for the term "proposition": if it is supposed to be the thought expressed by a sentence (so that one can express the same proposition in different languages), it cannot be conceived of as sentence-like. The sentences that we use to express propositions have phonology and (narrow) syntax; the propositions themselves don't. Part of our job here (questions (5) and (6) in the previous section) is to figure out the proper form for propositions, and how syntax and phonology express them in different languages.

A second sense of "language" comes from the study of formal languages: a language is a set of expressions and/or the principles that generate them. For instance, we can speak of the strings in (8a) as expressions in a formal language generated by the principles in (8b).

- (8) a.  $ab, aabb, aaabbb, aaaabbbb, \dots$   
 b.  $S \rightarrow aSb$   
 $S \rightarrow ab$

This sense of "language" includes the broad sense of "syntax" in Chomsky's use, but is not restricted to formal organizations in the mind: formal logic in this sense is a language, as are programming languages and possibly even the artistic style of Rembrandt. This sense is appropriate to the notion of "thought" as a combinatorial system in Fig. 9.1. It is not, however, what Fodor has in mind.

Rather, there is a third sense of "language," in which it denotes a set of expressions in a formal language *plus* a set of mapping principles that "interpret" these expressions into some domain. For instance, the sequences of *as* and *bs* in (8a)

might be interpreted as designating rows of different kinds of coins, or sequences of different kinds of sounds, or ordered  $n$ -tuples of elements chosen from different sets. In this sense of "language," the organization of the formal expressions is often called its "syntax" and the mapping into the other domain its "semantics." This is the sense that Fodor has in mind, concurring with Chomsky's explication of "semantics" above. Fodor intends that LoT has a syntax (in the broad sense) and a semantics. The expressions in LoT are *mental representations*, and they *represent* something: entities in the world. Put differently, Fodor insists that LoT is *intentional*: it is *about* something.

Fodor admits that his view is intensely problematic: after all, how do expressions in the head make contact with the things they are supposed to be about? Fodor (1991), for example, aspires to develop a "naturalized" semantics, that is, "to say in *nonsemantic* and *nonintentional* . . . terms what makes something a symbol." In short, he is correctly trying to live by the postulate "There is no magic." His proposal is that *true* uses of a symbol such as *platypus* are somehow *caused* by actual platypuses (how? acting on the speaker's perceptual system? Fodor doesn't say). He then faces the problem of what licenses (a) incorrect uses of *platypus* in response to, say, cows, and (b) "representational" uses of *platypus* when the speaker is just imagining a platypus or thinking about platypuses in general. He concludes tentatively that these cases are "asymmetrically dependent" on the true cases, in a fashion left unexplained.<sup>6</sup>

Notice how drastically different Fodor's view is from what has been advocated here. Here, natural language has phonological, syntactic, and semantic/conceptual structure. Semantic/conceptual structure does not *have* a semantics, it *is* the semantics for language. As a first step in working out this view, I am going to suggest again the radical surgery on terminology advocated in Chapter 2. Fodor's problems arise from treating the combinatorial structures that constitute meanings/thoughts as symbols for something, representations of something, information about something. Instead, I am going to try to take them just as pure non-intentional structure, as we did (less controversially, I hope) with phonology and syntax. The problem will then be to reconstruct the intuitions that the notion of intentionality is supposed to account for. This will be part of the subject of the next chapter.

My approach might in a way be seen as hedging one's bets. I am hoping that we can indeed arrive at a naturalized view of meaning without invoking intentionality. On the other hand, Fodor might be right: conceptual structure might indeed need to be intentional in some sense. Whichever is the case, we still have to work

<sup>6</sup> Fodor is clearly worried by these gaps, as evidenced by asides like "No doubt it's wrong of me to be inclined to think this" and, in the final footnote, "Deep down, I think I don't believe any of this. But the question what to put in its place is too hard for me."

out the details of the combinatorial system constituting semantic/conceptual structure/LoT, as well as its interfaces with language, inference, perception, and action—which is what I take as the task of conceptualist semantics. And, as will be seen, there are lots of details worth working out. There is no reason to be paralyzed by the absence of a solution for intentionality, as Fodor seems to be.

### 9.5 Some “contextualist” approaches to meaning

Various approaches to meaning seek to treat it as something other than a mental phenomenon, as part of the “environment.” Perhaps the most extreme is behaviorism, now mostly extinct, which claimed (e.g. Watson 1913) that thinking is nothing but subvocal speaking, and that the idea of a “concept” behind the language is nonsense. However, behaviorism never attempted to explain more than the most trivial of linguistic facts, and those in dubious fashion (Chomsky 1959).

A different sort of argument emerges from some strains of linguistic philosophy, often with appeal to Wittgenstein (1953). This view is that there is no fixed meaning associated with linguistic expressions; rather the best one can do is catalog the contextual uses of expressions. There is a germ of insight here, in that the message conveyed by an expression is indeed heavily influenced by one’s understanding of the context (Sperber and Wilson 1986; Pustejovsky 1995). But on the other hand, the expression must convey *something* with which the context can interact. If it did not, a hearer could in principle know from the context what message was intended, without the speaker saying anything at all! It is important to factor out the respective contributions to understanding made by linguistic expressions and by context; this cannot be done by focusing on context alone.

Another view in a similar spirit focuses on the interaction between speaker and hearer: meaning is something not in either one of them alone, but “negotiated” in the interaction between them; it is a “social construction.” This view is advocated, for instance, by Dufva and Lähteenmäki (1996), drawing on the “dialogic” tradition of Bakhtin. A less extreme version of this view appears in Herbert Clark’s *Using Language* (1996), which offers a detailed analysis of how speaker and hearer collaboratively verify that the speaker’s message has been adequately formulated and received. I have no quarrel with the idea that communicating linguistically is a socially engaged cooperative enterprise. I disagree only with the claim that that is *all* it is. Dufva and Lähteenmäki seem to be saying that at the end of a linguistic interaction there is just a disembodied “meaning” out there in interpersonal space. By contrast, I think—and I think Clark would agree with me—that there is something in the hearer’s head that was not there before; and perhaps the negotiation results in something different in the speaker’s head too. It is these things in the speaker’s and hearer’s heads that are the focus of my concern. So the question I am asking is:

(9) What is present in people's f-minds when they grasp a meaning?

Looking at the complexity of the communicative act only adds to the task:

- (10) a. How does social interaction among individuals shape the meanings and thoughts that those individuals hold?  
and  
b. How do interacting individuals arrive at the sense that they have ideas in common?

We return to the issue of social construction in section 10.11.

Another version of this issue arises in connection with one aspect of Hilary Putnam's (1975) important paper "The Meaning of 'Meaning.'" Putnam observes that there are many words whose meanings we do not fully know; for instance, he knows that *elm* and *beech* both denote kinds of tree, but he himself could not tell, given two trees, which is the elm and which the beech. He proposes that there is a "linguistic division of labor," where we ordinary folk defer to experts who are in possession of the full meaning. This description applies nicely also to the situation of the language learner, who is trying to use clues from "experts," that is, fluent speakers, to figure out what words mean. Putnam takes this to show that meaning is not in the heads of speakers so much as somehow "in the community." But again, for speakers to differ in their competence at applying a word, they must each have some concept, precise or vague, associated with the word. Thus the issue boils down again to question (9), plus question (10a), plus the following questions:

- (11) a. How do interacting individuals recognize that they have *different* ideas?  
b. Under what conditions does an individual choose to defer to the ideas of another?

A case where one individual does *not* choose to defer to another is in the case of duelling "experts" arguing about (to pick a random example) how to understand the term "semantics." Here there is no determinate meaning "in the community" and each "expert" is striving to impose his or her own preference.

This way of stating the issues of social/cultural construction of meaning does not alter the intuitions and evidence behind them. What it does do is show how this enterprise fits into conceptualist semantics.

### 9.6 Is there a specifically linguistic semantics?

The rest of this chapter is devoted to quite a different impulse to constrain the scope of semantics, this time from within linguistic theory. The idea is that it is possible to delimit a specifically *linguistic* part of semantics, distinct from non-linguistic knowledge, thought, and contextualized meaning. The distinction has been proposed along a variety of lines, not mutually exclusive:

- (12) a. It is necessary to distinguish the “dictionary” meaning of lexical items from their “encyclopedic” meaning, the latter including at least all personal associations with words. Only the former is supposed to be in the purview of linguistic semantics.
- b. Certain semantic properties such as analyticity, logical entailment, and truth conditions belong to linguistic semantics, while others, such as heuristics, default logic, and connection to the real world, belong to some other enterprise, perhaps pragmatics.
- c. Certain semantic properties, such as argument structure, aspectual structure, illocutionary force, and the mass/count and singular/plural distinctions, have grammatical reflexes; these belong in linguistic semantics. Others, such as color, metrical size, and species (beyond human/non-human), do not; these belong to general knowledge.
- d. Languages differ in their semantics, because of the semantic distinctions they grammaticalize and because of their patterns of lexicalization. Therefore each language must have its own language-specific semantics, which may or may not be separate from a language user’s general patterns of knowledge and belief.

While these proposed distinctions are based on sound intuitions, I think they are not in the end viable; we must consider the domain of linguistic semantics to be continuous with human conceptualization as a whole. In order to see why, let us first see how a proposal to separate linguistic semantics from contextualized meaning fits into Fig. 9.1 and discuss some general issues. The next section will examine proposals (12a–d) in turn.<sup>7</sup>

There are two ways the separation could be effected. One is to propose that there is a form of cognitive structure distinct from both linguistic form (phonology and syntax) and contextualized meaning, lying between them and connected to each by an interface, as in Fig. 9.2.

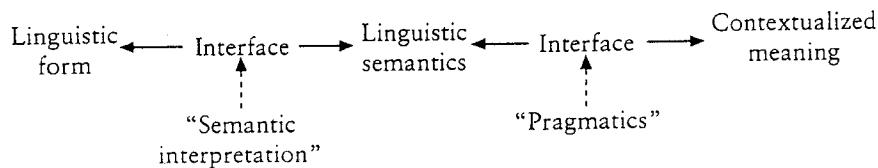


Fig. 9.2. “Linguistic semantics” as a separate level of structure

<sup>7</sup> Levinson (2000) presents many parallel arguments against separating linguistic semantics from contextualized meaning.

This presumes that linguistic semantics is made up from different kinds of units than contextualized meaning—they are different levels of structure in the same sense that phonology and syntax are. In effect, this breaks the interface between linguistic form and meaning of Fig. 9.1 into two stages: “semantics first and pragmatics afterwards.” Such is the position, as I understand it, in Katz (1972), Chomsky (1975), and Sperber and Wilson (1986), for instance.<sup>8</sup>

Alternatively, linguistic semantics could be a “stripped down” version of contextualized meaning, comprising only a subset of its units and/or distinctions (perhaps parallel to the relation between the sound structures encoded by lexical phonology and phonetics respectively). We might sketch this organization as Fig. 9.3.

This still keeps semantic interpretation separate from its integration with nonlinguistic elements of meaning (“pragmatics”). The only difference is that we can see the latter process as an enrichment of linguistic meaning rather than a mapping into an separate format of structure.

What might lie behind the desire to separate semantics from conceptualization? One motivation, I suspect, is a lurking fear that general-purpose knowledge and belief are a bottomless pit, and that in order to make the enterprise of semantics manageable it must somehow be restricted. And therefore *some* distinction must be made so we can stop before drowning in endless detail.

My own attitude is that the seams of the mind must be determined empirically, not on the basis of our fears. A priori, it would make more sense for there *not* to be any special level of linguistic semantics: this would just require one more bit of work for evolution to do beyond evolving phonology and syntax. In addition, there is a methodological issue: we can't tell whether there is a seam without establishing what lies on both sides of it. Thus investigating linguistic semantics

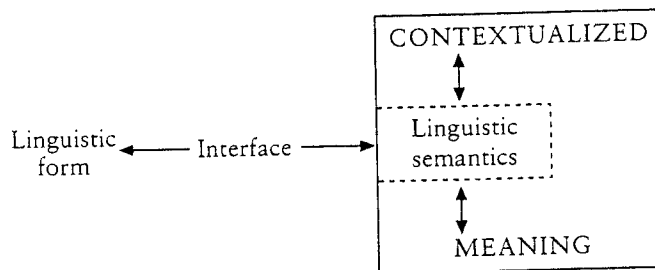


Fig. 9.3. “Linguistic semantics” as a subset of contextualized meaning

<sup>8</sup> Chomsky (1975: 105) has a diagram almost identical to Fig. 9.2. He calls linguistic semantics “logical form,” and considers the left-hand interface (his SR-1) a part of sentence grammar. He characterizes the right-hand interface (his SR-2) as “other semantic rules.” Of course his arrows go only from left to right, because his grammar is syntactocentric.

without also investigating contextualized meaning cannot in any event tell us whether our hypothesized distinction is correct.<sup>9</sup>

A more worthy motive for trying to separate semantics from conceptualization might be Frege's (1892) quite legitimate desire to eliminate "personal association" from semantics. Frege makes the all-important distinction between the *reference* of an expression—what it denotes—from its *sense*—the manner or route by which it denotes the reference. But he is also careful to distinguish sense from the idea in the language user's mind, which he finds too subjective and variable for his purposes. He therefore takes sense to be an abstract, objective property conventionally associated with a linguistic expression. This approach thus can idealize away from personal associations—such as the endearing way one's dog comes bounding up to visitors, which probably should not be part of the meaning of *dog* as it functions in interpersonal communication.

However, it is difficult if not impossible to draw a principled line between the "public" meaning of a word and its personal associations. Therefore the desire to draw such a line is not a justified motive for separating linguistic meaning from contextualized meaning. Here is why.

Suppose two people have the same personal associations for certain words, perhaps because they have grown up together. This permits them to use these words with each other, and the personal associations have a "public" meaning, albeit for a very restricted public. But as far as the rest of the world is concerned, these are just "personal associations" that cannot be recovered from hearing the words in question.

The same holds at a larger scale when we consider special uses of words by a technical subcommunity. When I use the term *language* in speaking to a linguist, I can invoke associations that come from shared experience in the linguistics community. When I use the word in speaking to my dentist, though, I cannot presume these associations and must put them aside in attempting to get my message across. But it's not as though I have two words *language* in my vocabulary, one for linguists and one for dentists. Moreover, there is a spectrum of intermediate communities, from psycholinguists to philosophers to neuroscientists to biologists, for which some of my "personal associations" are appropriate and others are not; successful communication depends on careful gauging of which to presume. Do I then have a multiplicity of words *language* in my vocabulary? I would rather say that I have intuitions about what aspects of the word's meaning for me are appropriate for my hearers. And when I don't know what

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<sup>9</sup> And if linguists abdicate from studying general-purpose knowledge and belief, who is supposed to study it? None of the other cognitive sciences has better tools to do the work in its full glorious combinatorial detail.

my audience is (aside from being speakers of English), I will have to presume an appropriately “neutral” or “minimal” sense that might be the one Frege intends as the “public” sense.

I am therefore advocating that the exclusion of “personal associations” from “public” meaning is not a consequence of a strong dissociation in kind between the two kinds of information. Rather it is a consequence of a sort of Gricean principle of conversation: one produces utterances in such a way that one can expect the hearer to reconstruct the intended message. Avoiding ambiguity is just another subcase of the same principle, as is speaking in a language you think the hearer understands. It’s my impression that young children are not very good at applying this principle, but gain sophistication at it as they mature. (Though some people never seem to learn it very well.)

Consequently, I don’t see any need to make a strong theoretical distinction along Fregean lines to distinguish “public” from “private” meaning. In the next section, as we consider in turn proposals (12a–d) for separating semantics from conceptualization, we will see in any event that none of them captures the desired distinction.

## 9.7 Four non-ways to separate linguistic semantics from conceptualization

### 9.7.1 *Semantics = “dictionary”; pragmatics = “encyclopedia”*

The idea behind this distinction, proposal (12a), is that some aspects of a word are not part of its meaning, but are “world knowledge” about the entity the word names. For instance, on this view, the fact that a dog is an animal is part of its “dictionary entry,” but the fact that dogs allegedly like to chase cats is “encyclopedic information” that plays no role in the linguistic behavior of this item, only in its pragmatics.

Note right away that this distinction does not correspond to the “public”/“private” distinction. The fact that my dog likes to chase mailmen may be a personal association with the word *dog*, so somehow connected to *dog* in *my* mind. But the alleged fact that dogs like to chase cats is part of common lore and can be alluded to in conversation without difficulty. So a great deal of “public” meaning is “encyclopedic” information and is thereby (on this view) excluded from linguistic semantics.

This approach makes most sense as a version of Fig. 9.3, where dictionary information is a subset of encyclopedic information, but not formally distinct from it. For example, even if the fact that dogs characteristically chase cats is encyclopedic, still the notion of chasing must be part of the dictionary entry for

the verb *chase*. More generally, some of the content of encyclopedic information for one item may well be dictionary information for another.

The problem is that it is hard and perhaps impossible to draw the line between what is in the dictionary and what is in the encyclopedia for any particular item (Bolinger 1965a; Jackendoff 1983; Lakoff 1987; Langacker 1987). For example, the difference between *murder* and *assassinate* is that the latter implies a political motive on the part of the agent. Is this dictionary or encyclopedia information? If the former, then something as complex as a political motive can be in the dictionary, and we have hardly simplified the repertoire of "dictionary semantics." If the latter, there is no distinction between the dictionary definitions of these two words. But this latter conclusion is impossible: linguistic semantics, if it is to explicate the matching between form and meaning, *must* be able to distinguish the meanings of these two words.

Jerrold Katz (1980) proposes that the dictionary contain only factors that lead to sharp (or analytic) judgments, and that any sort of graded (or defeasible) factors belong in the encyclopedia. This too is unsatisfying, since it says that color distinctions, which are well known to be graded, fall into the encyclopedia. Consequently, on this analysis, *Green things are not colored* is anomalous on the basis of dictionary information (since green is analytically a color), but *Green things are blue* is anomalous on the basis of encyclopedia information. For my taste, this is quite a curious outcome of the theory. Again, because *green* and *blue* are not synonymous, a theory that relegates their semantic difference to "encyclopedic," hence "non-linguistic," meaning, cannot be a satisfactory theory of linguistic semantics.

Here is a more complex case, arising from work of James Pustejovsky (1995) (see section 11.9). How does the f-mind encode what one typically does with objects, for example that one typically reads books, cooks on a stove, and stores things in sheds? Being *typical* actions, they certainly don't fall under Katz's notion of dictionary. My impression is that most people proposing the dictionary-encyclopedia distinction would consider them the beginning of "drowning in complexity," hence encyclopedia.

Now, think of verbs like *finish* or *enjoy*, which are understood as pertaining to an activity. When these verbs take physical objects as their complements, as in *finish/enjoy the book*, *finish/enjoy the beer*, one readily interprets them in terms of these typical actions one performs on them: one finishes or enjoys *reading* the book but *drinking* the beer. Thus, by hypothesis, a full understanding of these sentences requires encyclopedic information about the objects in question.<sup>10</sup> This

<sup>10</sup> *Finish*, but not *enjoy*, requires that this typical activity have a sequential structure. Thus *enjoy the stove* is fine but *finish the stove* is odd without some contextual support, e.g. the understanding that one is cleaning the kitchen.

interpretation can be overridden by circumstance, for instance if the agent cannot carry out the typical activity. Thus *The goat finished the book* can only be interpreted as the goat eating the book or some such—unless it's a talking goat in a fairy tale, which *can* carry out the activity. Such delicate discourse dependencies are what make people want to relegate information like “typical activity” to pragmatics.

Consider, however, an example of a semantic anomaly involving these interpretations, for instance *Bill finished the book, and so did the goat*. The joke comes from the fact that the two clauses are normally interpreted with different understood activities. This discrepancy, though, has the very same flavor as an anomaly due to improper use of a polysemous item, as in *The chef cooked all afternoon, and so did the roast*. Now, if the former case is due to pragmatic conflict in encyclopedic information and the latter to semantic conflict in dictionary information, a clear generalization is being missed.

The pattern from these examples—*murder*, *green*, and *finish*—ought to be clear. For any distinction you may propose between dictionary and encyclopedia, I can find a semantic fact such as a pattern of anomaly that cuts across them. This was essentially Bolinger's (1965a) argument against Katz and Fodor's (1963) way of making the distinction, and it holds just as well against any other proposal of the same sort. So this way of avoiding the full complexity of contextualized meaning fails.<sup>11</sup>

### 9.7.2 *Logical vs. nonlogical semantic properties*

The idea behind proposal (12b) is that linguistic semantics is concerned only with properties that lead to logical entailments and that are involved in establishing analyticity; all non-logical semantic properties belong in pragmatics. Katz's approach is one version of this hypothesis; another version appears in the psychological literature on semantic memory (e.g. Smith and Medin 1981); yet another seems to be advocated by Levinson (2000). The idea is that certain parts

<sup>11</sup> A further point may be illustrated by the meaning of the word *remove*. At some coarse level that we might want to call the “dictionary” meaning, *remove X from Y* means roughly ‘cause X to come not to be on/in Y.’ Now consider the problem faced by Bonnie Webber's research group at the University of Pennsylvania. They were attempting to program a virtual robot (a robot on a video screen) to respond to natural language commands. It had to know what to do when told to remove something. But removing wallpaper from a wall requires a different action than removing a lid from a jar, and than removing a jar from a refrigerator. Where should such knowledge be classified? As part of the “encyclopedic” meaning of *remove*, part of the “encyclopedic” meaning of *wallpaper*, etc., as “general world knowledge,” or what? I must say that I don't know, and leave it at that. In any event, this knowledge must appear as part of contextualized meaning for the verb phrases in question. This problem recurs massively in an account of phrasal meanings, and cannot be brushed off lightly when thinking about practical reasoning.

of a word's meaning are necessary conditions ("dictionary"), and other parts, less central, may have exceptions. This proposal is compatible either with Fig. 9.2, where logical properties are encoded one way and non-logical properties are encoded some other way, or with Fig. 9.3, where logical properties are a subset of all semantic properties.

Like the previous proposal, this one excludes much of "public" meaning from linguistic semantics. Our utterances communicate a great deal beyond logical implications or necessary conditions—and we count on their doing so. So this proposal should not be construed as satisfying Frege's objection to mentalistic semantics.

This proposal is subject to the counterarguments of the previous subsection, plus three more. The first is Wittgenstein's (1953) reason: many words have no exceptionless distinctions that differentiate them interestingly from other words. Wittgenstein's most famous example is *game*, for which he can find only the necessary condition that it be an (intentional) activity. (Lakoff 1987 in particular elaborates this argument in great detail.) Hence they have no "dictionary definition" in this sense. (More examples in section 11.6.2.)

Second, a condition may result in logical entailment in one word and only in a defeasible (i.e. "pragmatic") assumption in another. For instance, both *rise* and *climb* carry content pertaining to movement in an upward direction. But *climb downwards* is perfectly sensible while *rise downwards* is anomalous. Thus the very same piece of conceptual content may belong either to "pragmatics" or to "semantics," depending on the word. This certainly argues against a layout like Fig. 9.2, where the two types of condition are in different components.

A third reason is developed in Chapters 5 and 6 of Jackendoff (1983). I argue there that if one has formal machinery to make judgments on sentences like (13a) and (13b), this machinery is also sufficient to evaluate the truth of sentences like (13c).

- (13) a. That [*pointing*] is a dog.  
 b. That [*pointing*] is an animal.  
 c. A dog is an animal.

The former sentences certainly involve pragmatics, for they require examination of the visual field to determine the object being pointed to, followed by comparison of that object itself to the features of the predicate (see the next chapter). The latter sentence, of course, is supposed to be analytic, its truth determinable on the basis of linguistic meaning alone. The point of the argument is that there is no special status to be accorded to analytic sentences in terms of the features of meaning they invoke or the formal machinery they

require for their evaluation. It misses a generalization to set their treatment off as special. They don't require different resources, just a subset of the ones needed to evaluate sentences in context.

The upshot is that there is little to be gained in theoretical economy or explanatory adequacy by making a strict cut between logical and non-logical properties. Logical properties alone don't make enough distinctions among lexical items; the semantic features involved in logical properties don't form a disjoint set from those involved in non-logical properties; and any system that can deal with non-logical properties can easily deal with logical ones as well. So logical properties are just some heterogeneous subset of semantic properties, and there seems no point in recovering them "first" from linguistic form then adding the other properties on "later."<sup>12</sup>

### 9.7.3 *Grammatically realized vs. grammatically irrelevant content*

Proposal (12c) seeks to segregate as "linguistic semantics" just those features of meaning that play a role in syntax and morphology, for instance the distinction between singular and plural but not that between red and green. Various versions of this idea have been proposed by Bierwisch (e.g. Bierwisch and Lang 1989), Pinker (1989), and Grimshaw (1993). Of course, different languages grammaticalize different semantic distinctions. For instance, many European languages base grammatical gender distinctions in part (but in part only) on semantic gender distinctions, but English makes no such grammatical distinction. Similarly, many languages make a mood distinction based in part on evidentiary status (indicative vs. subjunctive), but English does not. We could therefore envision two versions of this proposal, one in which the elements of linguistic semantics are language-specific, and one in which they are universal, but different languages happen to grammaticalize different subsets of linguistic semantics. The former position will fall under the proposal to be discussed in the next subsection, so we will restrict ourselves to the latter here.

According to this proposal, the difference between *red* and *green*, between *dog* and *cat*, and between *twenty-seven* and *thirty-eight* make no *grammatical* difference, so they are not part of linguistic semantics. Hence this version of linguistic semantics is even narrower than the previous two. It provides no basis

<sup>12</sup> Levinson (2000) is correct in pointing out that the necessary conditions must still be distinguished from the defeasible ones, say by notating them in "different colors" or under different logical operators. But he thinks that this difference comes from the kind of rule that leads to the condition in question—semantic or pragmatic. The position here is that the difference simply is a lexical property of the condition in question; e.g. 'upwardness' is simply marked necessary in the lexical entry of *rise* and defeasible in that of *climb*. See section 11.6.2 for more discussion.

for any sort of inference, and it ignores the fact that linguistic theory must ultimately account for the mapping between the phonological structure /kæʔ/ and the meaning of the word *cat*. Still less, of course, can this approach satisfy Frege's desire to separate "public" from "private" meaning.

On this construal, should linguistic semantics be considered a separate level of cognitive structure (Fig. 9.2) or a subset of conceptualization (Fig. 9.3)? I believe that Bierwisch has on different occasions endorsed both possibilities. Chomsky's notion of LF (at least the 1981 version) seems to be an instantiation of Fig. 9.2, in that LF contains semantic features, but only those that are "strictly determined by linguistic rules."

The place where this approach has been most successful, in my opinion, has been Pinker's work (1989), where he shows that the argument structure of verbs—and certain significant cases of argument structure alternation—depend on relatively coarse distinctions in verb meaning. Thus if the language learner can place a verb in a particular coarse class by virtue of its meaning, (s)he can pretty well predict its syntactic behavior.

So let us ask which semantic features are involved in grammatical distinctions across languages. They form quite a heterogeneous set: singular vs. plural, animate vs. inanimate, mass vs. count, male vs. female, quantifierhood, causativity, motion, being a "psychological predicate," rough shape (in classifier systems), and relative social status, among other things. Pinker's "narrow classes," motivated by argument structure distinctions, involve factors such as whether a substance tightly fills a space (verbs like *stuff*, *pack*, and *cram*) versus whether it is distributed on a surface (*smear*, *spread*, and *slather*). In Levin and Rappaport Hovav's (1996) discussion of argument structure alternations, we find that sound emission verbs can appear in motion verb frames if the sound emission can be associated directly with the action of moving (e.g. *The car squealed around the corner* but not \**The car honked around the corner*). Thus it does not seem that the semantic features that play a role in grammatical structure form a particularly simple or natural class. In fact the association of sound emission with motion surely involves what other proposals would consider "encyclopedic" knowledge.

This suggests to me that little is to be gained from positing a separate level of structure for linguistic semantics (as in Fig. 9.2), since this level exhibits no interesting semantic constraints beyond its coarseness relative to lexical distinctions. This leaves us with the option in Fig. 9.3, in which the semantic features relevant to grammatical structure are a subset of those relevant to meaning in general.

But there is a way to achieve such a subset other than simply to carve it out within the theory of conceptual structure itself. Recall from Part II that part of

the theory of linguistic structure involves specifying the interface constraints that relate contextualized meaning to linguistic form. The lexicon forms an important part of this interface; but it also must include phrasal interface rules that specify how syntactic combinations of words are mapped to complex contextualized meaning. With this in mind, an alternative proposal is simply this:

- (14) The subset of semantic features relevant to grammar is just the subset that is (or can be) mentioned in phrasal interface rules—the part of conceptualization that is “visible” to these rules.

Under this approach, the fact that these “grammatically visible” features form a heterogeneous set still remains to be explained, but at least we are no longer required to give them a revealing formal characterization: the phrasal interface rules can see whatever they can see, and if what they can see is a weirdly structured subset of semantics, well, that’s how it comes out. At the same time, the fact that this subset is relatively coarse now comes as no surprise. Phrasal interface rules are *supposed* to apply to classes larger than individual lexical items, so it stands to reason that they lump classes of items together, sometimes in broad classes, sometimes in narrow ones. Put in the terms of Chapters 5 and 7, the phrasal part of the syntax–semantics interface is only a partial homology between the two structures, not a full mapping.

As far as I can tell, this perspective is consistent with everything Bierwisch and Pinker say. (In fact, Bierwisch 1996 seems to me only rhetorically different from this, not substantively.) Under this view, the formation rules for conceptual structure do not have to concern themselves with whether a particular distinction has a grammatical counterpart or not; this simplifies the theory of the formation rules. The question of grammatical counterparts for semantic distinctions is asked only in the theory of the syntax–semantics interface constraints.

#### 9.7.4 *Language-specific semantics implying a special linguistic semantics*

It is sometimes suggested (position (12d)) that each language has its own semantics, so there has to be a theory of language-specific semantics separate from the theory of contextualized meaning. Here are three basic arguments adduced for this position:

- (15) a. Languages can have different sets of lexical items that presuppose different (and incompatible) cultural systems. Therefore semantics cannot be universal, because there is no direct translation between languages.

- b. Going beyond individual items, languages have different patterns of lexicalization. For instance, Talmy (1980) observes that Romance languages typically conflate path and motion together in a verb, while English typically conflates manner and motion (though it has its share of path+motion verbs too). These differences in pattern are correlated with differences in grammatical patterns as well.
- c. Languages have inflectional categories that reflect different partitioning of semantic space—different gender/classifier systems, different tense/aspect systems, different politeness systems. Linguistic semantics must enable us to characterize these differences.

The answer to these arguments is the same as in the previous subsection. All of these arguments concern the way elements of linguistic form map into complexes of meaning, not with the contents of meaning itself. Thus they can be characterized as language-specific differences in the interface rules—either (a) in the mapping associated with particular cultural vocabulary, (b) in the general pattern of mappings encoded by classes of lexical items (which, recall, are interface rules), or (c) in the phrasal interface rules associated with grammatical and morphological features. This, then, is specifically linguistic semantics, not because it invokes a different sort of cognitive structure, but rather because it involves how the vocabulary and grammar of different languages map onto the *same* level of conceptual structure, thereby creating different natural groupings of meanings for users of different languages.

Position (12d) is not far from a well-known position emerging from linguistics and anthropology, often called the Sapir-Whorf hypothesis (Carroll 1956). This stresses the dependence of thought on language, claiming that differences among languages strongly affect the thought processes of their speakers. Again there is a certain degree of plausibility to this claim, particularly in the realm of vocabulary. In fact, it is unnecessary to look to other languages: we can simply look to technical sub-vocabularies in our own language (say, chemical, medical, cultural, or religious terms) to see how much greater precision is afforded in discourse and thought by virtue of having a more finely divided vocabulary.<sup>13</sup>

Whorf's more radical claim was that grammatical structure fundamentally affects thought. He claimed, for instance, that the Hopi language contains no elements that refer to time, and therefore that monolingual Hopi speakers have no concept of time; both aspects of this claim have been refuted by Malotki

<sup>13</sup> Incidentally, the "urban legend" that Eskimo languages have dozens of words for snow can be traced to a far less extreme claim by Whorf; the actual range is not that different from English *sleet*, *slush*, *blizzard*, *powder*, etc. (Pullum 1981).

(1983). More recently, experiments reported by Levinson (1996) have shown some interesting differences in non-verbal spatial understanding in speakers of certain Australian and Mayan languages, compared to speakers of European languages; the differences appear to be related to the way these languages encode spatial relations, thus offering support to a limited version of the Sapir-Whorf hypothesis. (Li and Gleitman 2000 disputes even these modest results, though.)

The upshot is that the character of thought may be to some limited extent affected by the proclivities of its interface with different languages: certain thoughts may be more easily accessible because one's language makes it easier to *express* them. Such a conclusion is still compatible with there being no specific *level* of linguistic semantics. Rather, again, the language-specific character of a speaker's concepts, such as it is, is a consequence of the language-specific *interface* between syntax/phonology and meaning—including the lexicon.

To sum up our discussion of the ecological niche for specifically linguistic semantics in the f-mind: there is such a niche, but not as a separate level of structure. Distinctions like "logical/non-logical" and "dictionary/encyclopedia" seem impossible to draw, and don't appear to make any useful functional distinction in an account of the f-mind. Rather, linguistic semantics per se is the study of the interface between conceptualization and linguistic form (phonology and syntax). It therefore studies the organizations of conceptualization that can be expressed or invoked by language. In particular, *lexical* semantics studies the organizations of conceptualization that can be bundled up in a single word (or to be clearer, in an interface rule whose other end is a morpheme). But all such work can be pursued in the framework of a functional architecture simply like Figure 9.1, where there is no level of "strictly linguistic meaning" intervening between linguistic form and concepts.