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FRAMES AND THE SEMANTICS OF UNDERSTANDING

Introduction

In this paper [1] I draw a comparison between semantic theories based on language understanding (broadly conceived) and semantic theories founded on judgments of (relative) truth. For convenience I shall refer to these as the semantics of understanding (U-semantic) and the semantics of truth (T-semantics).

A U-semantic theory takes as its assignment that of providing a general account of the relation between linguistic texts, the contexts in which they are instanced, and the process and products of their interpretation. Importantly, such a theory does not *begin* with a body of assumptions about the difference between (1) aspects of the interpretation process which belong to linguistics proper and (2) whatever might belong to co-operating theories of speaking and reasoning and speakers' belief systems. Such distinctions may emerge as the theory is refined, but there is no reason to believe that it will be judgments of truth which define the essential boundary.

T-semantics, by contrast, begins by assuming that its goal is to characterize the conditions under which individual utterances of a given language can be said to be true [2]. It is common for T-semantic theories to have conditions of satisfaction which serve as alternatives to truth judgments in the case of nonassertoric sentences, but all of the T-semantic theories I have in mind begin with, and find their place of rest with, assertoric sentences permitting judgments of (relative) truth or falsity [3].

In this paper I defend a (still somewhat vague) semantics of understanding, at the base of which is the concept of the interpretive frame. I suggest that the frame conception is a useful tool in lexical semantics, in the semantics of grammar, and in text semantics. I argue that many of the consequences of looking at meaning in terms of such interpretive frames are not easily captured in a

[2] In discussing such judgments important choices need to be made regarding the entity to which truth is attributed or withheld, whether, that is, it is to be a sentence, a contexted utterance of a sentence, or the proposition that gets communicated through the utterance of a given sentence in a given context. I believe that in the discussion which follows no harm will attend on my practice of not always being careful about such distinctions. In the most careful usage, it is the proposition expressed by the in-context utterance of a (declarative) sentence about which such judgments are appropriate, but, where confusion is not likely, I shall be content to use the word sentence.

[3] Truth in this sense is 'relative' in two ways: relative to models (or worlds, or situations) and relative to other sentences. In the former case we say that a proposition is true of such-and-such a situation if in that situation such-and-such facts obtain. In the latter case we say that a proposition P is true just in case a second proposition Q is true.

semantics of truth. I then ask whether a U-semantics has in fact anything to say about truth and negation (judgments that are relied on in the development of formal semantics), and I suggest that both the notion of truth and the uses of negation needed for a formal T-semantics are secondary to the understanding of those notions that arise from a study of U-semantics.

In the end I examine a topic that held a wide interest a decade ago, that of so-called presupposition. I suggest that there is something in common between interpretive frames and certain varieties of presupposition, and I show that some of the arguments taken as having discredited the notion of presupposition (as a proper concept for a theory of natural language semantics) are weak or unintelligible when reexamined in the light of U-semantics. T-semantics, shaped according to its own formal needs, has left linguistics with an unintuitive account of presupposition and truth and defines many aspects of language understanding as outside of its scope; it is hoped that a properly conceived theory of U-semantics will be able to take in the full scope of linguistic meaning and at the same time provide natural and satisfying accounts of the notions of truth and presupposition.

Words and their Frames

In a program designed for the teaching of English vocabulary to, say, students of English as a foreign language, we would surely be surprised to find the word *Thursday* introduced in the first lesson, *Sunday* in the fourth, and the remaining weekday names distributed randomly throughout the curriculum. Nor would we expect to find *father, mother, son, daughter, brother*, and *sister* separated from each other, or *buy, sell, pay, spend*, and *cost*, or *day, night, noon, midnight, morning, afternoon*, and *evening*. These words form groups that learners would do well to *learn together*, because in each case they are lexical representatives of some single coherent schematization of experience or knowledge. In each case, to understand what any one member of such a group is about is, in a sense, to understand what they are all about. And since the knowledge which underlies the meanings of the words in each group is generally acquired all at once, it would seem natural to expect students to learn the words together.

What holds such word groups together is the fact of their being motivated by, founded on, and co-structured with, specific unified frameworks of knowledge, or coherent schematizations of experience, for which the general word frame can be used [4]. If we wish to articulate our understanding of the weekday

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[4] Actually a fairly wide variety of terms have been proposed for the kinds of structures we have in mind: «frame», Minsky [1975], Winograd [1975], Charniak [1975]; «schema», Bartlett [1932], Rumelhart [1975]; «script», Schank and Abelson [1977]; «global pattern», de Beaugrande and Dressler [1981]; «pseudo-text», Wilks [1980]; «cognitive model», Lakoff [1983]; «experiential gestalt», Lakoff and Johnson [1980]; «base» (in contrast to profile), Langacker [1984]; «scene», Fillmore [1977]; etc. The terms are used in a fairly wide variety of ways, and some scholars use several of them, distinguishing among them according to whether they are static or dynamic, according to the kinds of inference making they support, etc.

names and other related words, we can appeal to a single interpretive frame made up of an understanding of (1) the natural cycle created by the daily apparent travels of the sun, (2) the standard means of reckoning when one day cycle ends and the next one begins, (3) the larger calendric cycle of seven days, and (4) the practice in our culture of assigning different portions of the weekly cycle to work and non-work. An implicit awareness of this particular organization of our physical and social world provides the conceptual basis for a fairly large body of lexical material, including common nouns like *week* and *day*, their adjectival derivatives, the individual weekday names, and such special categories as *week-end* and *fortnight*. Borrowing from the language of gestalt psychology we could say that the assumed background of knowledge and practices — the complex frame behind this vocabulary domain – stands as a common ground to the figure representable by any of the individual words. Such a frame represents the particular organization of knowledge which stands as a prerequisite to our ability to understand the meanings of the associated words.

The basic insight underlying the frame notion is by no means new. It can be seen, for example, in John Stuart Mill's [1846] treatment of the distinction between connotation and denotation as applied to what he calls correlative terms. Mill argues that while the words *son* and *father* can be said to "denote" *different* things, they "connote" the *same* thing, namely the history of events which created the relationship named by each of these words.

«It is obvious ... that if we take any two correlative names, *father* and *son*, for instance, although the objects denoted by the names are different, they both, in a certain sense, connote the same thing. They cannot, indeed, be said to connote the same *attribute*; to be a father is not the same thing as to be a son. But when we call one man a father, another his son, what we mean to affirm is a set of facts, which are exactly the same in both cases. To predicate of A that he is the father of B, and of B that he is the son of A, is to assert one and the same fact in different words. The two propositions are exactly equivalent: neither of them asserts more or asserts less than the other. The paternity of A and the filiation of B are not two facts, but two modes of expressing the same fact. That fact, when analyzed, consists of a series of physical events or phenomena, in which both A and B are parties concerned, and from which they both derive names. What those names really connote, is this series of events: that is the meaning, and the whole meaning, which either of them is intended to convey. The series of events may be said to *constitute* the relation: the schoolmen called it the foundation of the relation, *fundamentum relationis*». [1846: 29] [5].

The idea of a presupposed structure of relationships (the fundamentum relationis) against which words like *son* and *father* are understood, is very much like the notion of the semantic frame: we can know the meanings of the individual words only by first understanding the factual basis for the relationship which they identify.

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[5] In following Mill's argument, we are distracted by noticing that he seems – quite strangely, under the circumstances – to have forgotten about women, all of whom have fathers and many of whom have sons. To be a father is not the same as to have a son, and to be a son is not the same as to have a father.

The paragraph just quoted, from the «Of Names» chapter of *A System of Logic*, follows on, and exemplifies, Mill's suggestion that "relations", normally considered by logicians as being *more* mysterious than other sorts of "attributes", should really be seen as *less* mysterious, precisely because they are founded on non-occult "facts". In the discussion following the quoted paragraph, Mill says:

«... all that appears necessary to account for the existence of relative names, is, that whenever there is a fact, in which two individuals are alike concerned, an attribute grounded on that fact may be ascribed to either of these individuals. A name, therefore, is said to be relative, when, over and above the object which it denotes, it implies in its signification the existence of another object, also deriving a denomination from the same fact which is the ground of the first name. Or (to express the same meaning in other words) a name is relative, when, being the name of one thing, its signification cannot be explained but by mentioning another. Or we may state it thus: — when the name cannot be employed in discourse, so as to have a meaning, unless the name of some other thing than what it is itself the name of, be either expressed or understood» [1846: 29]

The "facts" which created the association between the two men related as *father* and *son* in Mill's passage should, of course, be seen as an instance of a part of a larger network of relationships between people, this definable in terms of childbearing (the mother's role), enabling childbearing (the father's role), being equipped with a body designed for one or another of these functions (being male or female), and the institution of marriage (the creation of societally recognized families). We have here a conceptual framework within which unlimitedly many paths of relationships between people can be characterized and upon which a large variety of secondary relationships can be superimposed (e.g., moiety, age grading, family role assignments, generational distance from ego, etc.). It is just such an interpretive frame which underlies the universal aspects of systems of kinship terminology and in terms of which speakers of English choose and interpret such terms as *father, son, granddaughter, brother-in-law, niece, third cousin four times removed*, and all the rest [6].

We note that, while recognizing the importance of the factual background to "relative names", Mill also found it useful to give importance to the associated *words* in the domain. To repeat a passage from the earlier quotation, «the name cannot be employed, in discourse, so as to have a meaning, unless the name of some other thing than what it is itself the name of, be either expressed or understood». There are within linguistics richly developed schools of lexical semantics dedicated precisely to the study of the structured relationships among words in particular semantic domains. I have in mind the

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[6] Scholars with 'structuralist' inclinations find it appealing to describe such lexical domains in terms of a pattern of *relations among words*, existing solely within 'the linguistic system'. It is typical in a study of the semantics of kinship terms *not* to base the system directly on such 'sex and family education' concepts as those I have mentioned, but on much more abstract properties or patterns of relationship, chosen to make it possible to display the language-internal structure of the lexical domain in question in the most economical way possible. A frame semantics approach nevertheless sees the need to describe the conceptual underpinnings of a linguistically coded conceptual system independently of such putative pure intra-linguistic structures.

lexical field theory associated with the names Jost Trier (esp. Trier [1931]) and J. Leo Weisgerber (esp. Weisgerber [1962]), and developed further by such scholars as Eugenio Coseriu, Bernard Pottier and others (see the discussion in Geckeler [1971]). The frame conceptualization has much in common with word field studies; since it is likely both that the frame notion can build on accomplishments of field theory linguists, and that frame theory might seem to be subject to some of the criticisms that have been directed at that theory, it may be useful to consider briefly where the two conceptualizations are alike and where they are different [7].

Within the lexical field tradition, the parade example of words whose interpretation depends on structured background knowledge is the set of labels used in Germany in the first half of this century for evaluating students' performance in school, the point being, of course, that the value or interpretation of a particular term depends on the full list of terms available and on the stipulated position of the given term in its series [8]. Similar situations closer to home are easy to find. Consider, for example, the system of labels used for ranking hotels and services in the travel industry, or the names for sizes and quantities of various kinds of commercial products. Inexperienced tourists who feel that they have spent enough on their trip to deserve the best are sometimes disappointed to find their *first class* hotel next to a much finer looking establishment; they feel deceived when they find out that in the official terminology of the travel industry, the rank label *first class* is the fourth down from the top, and that the envied hotel next door belongs in the *luxury* class. Supermarket customers in the United States are sometimes puzzled to find that a

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[7] For discussion and criticism of the Trier tradition, see especially Dornseiff [1938], Betz [1954], Oksaar [1958] and Spence [1961]. See also the introduction by van der Lee and Reichman to their collection of Trier's writings, Trier [1971].

[8] The details are worth examining. Whether or not students could feel pleased to be told that their work was, say, *gut* or *mangelhaft*, clearly had to depend on their awareness of the full set of categories from which the word was chosen. As shown in Weisgerber's display [1962: 99], terms for evaluating schoolwork could be chosen from a four-member series («A»), a five-member series («B»), or a six-member series («C»), as follows:

«A»	«B»	«C»
sehr gut	sehr gut	sehr gut
gut	gut	gut
genügend	genügend	befriedigend
mangelhaft	mangelhaft	ausreichend
	ungenügend	mangelhaft
		ungenügend

A student whose performance has been judged as *gut* might be pleased to know that this word represents the second category from the top (as in all three cases above), but would find this evaluation more satisfying if it was second from the top in a field of *six* than when it was chosen from a field of four. Similarly, it might be less discouraging to have one's work labeled *mangelhaft* if one knows (as in «B» and «C», but not «A») that there is at least one lower category; but this comfort will be weaker in the case where there are four categories more desirable than *mangelhaft* (as in «C»), than where there are only three (as in «B»). (Such reasoning is coherent, of course, only if it is understood that the labels rank students' work in groups of roughly equal sizes).

package of soapflakes labeled *large* is the *smallest* size available, the larger ones marked by such descriptions as *jumbo, economy, giant,* and *family size.*

With the examples of schoolwork grade scales, travel accommodations ranking, and product size grading, we have instances of "technical language" used in contexts in which technical language may or may not be expected. We can make sense of the consumers' puzzlement in the latter two situations by seeing that the words used in the *special* frames have been borrowed from, and are motivated by their use in, more *familiar* frames. Misunderstandings can arise from the interpreter's assigning the word its familiar interpretation – interpreting the word *first* within a normal *counting* frame, for example – and not being aware of the specially stipulated interpretation in the current context. We find that we need to refer to frames, both for describing the competing uses of these words and for explaining the misunderstanding. The interpreters who went wrong didn't simply straightforwardly fail to "understand" the words; they failed to know what "framing" device was intended in the given context.

In the cases just considered we have frames that are more *created by*, than *reflected in*, language. There are, in such cases of normative terminology, *no* observable sets of "facts" capable of being examined independently of their linguistic reflections. Of more interest to general empirical semantics, of course, are semantic fields in the "general vocabulary". And indeed, the literature of word field studies contains many detailed analyses, for a number of languages, of the vocabulary of such domains as color, temperature, furniture and artifacts, kinship relations, intelligence, livestock, terrain features, and the like [9].

In the lexical field theory it is, of course, the notion of "field" which is the analog to our frame concept. The sense of "field" which underlies Trier's metaphor, at least in the first instance, appears to be that of a field of entrants in a race [Gipper 1973: 442], since to Trier what is requisite to understanding the «meaning» of an individual term is the interpreter's awareness of the word's *position in the field* and the *number of contenders.* In his words, «Soll der Hörer verstehen, so muss Zahl und Lagerung der sprachlichen Zeichen dieses Begriffsfelds ihm unausgesprochen gegenwärtig sein» [Trier 1931: 7]. Here Trier is speaking of school grading terminology, but he adds in the next paragraph: «Für nicht mathematisierte, für ganz normale Felder, gilt genau das gleiche». He believed, in other words, that in general, to understand the meaning of a word was to understand the structure within which the word played its role, and that this structure had its being precisely because of the existence of the other *words.*

Word field research in the general vocabulary has emphasized language-specific organizations of the particular semantic domains under examination. Common to theorizing about word fields is the assumption that the domain

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[9] For samples and discussions of such word-field studies see Schwarz and Kändler [1959], Hoberg [1970], Geckeler [1971], Gipper [1973].

being considered is exhaustively covered by the given network of terms, that the words in the field compete with each other for semantic territory, and that they thus stand in paradigmatic opposition to each other. It is common in linguistics to recognize for a given language certain closed classes of morphemes or function words as comprising precise contrast sets, fixed sets of elements so opposed that to understand the function of a token of any one of these requires the awareness that *it* was chosen rather than any of its competitors. The notion of the lexical field is seen by many as the proposal that the vocabulary of a language as a whole is constituted of *semantically defined* closed classes of words; in each instance, to understand the meaning of one member of the field requires an ability to survey all of the words in the field, in order to see where the present one fits in. Quoting Trier again:

«Worte sind sinnlos, wenn ihre Kontrastworte aus dem gleichen Begriffsfeld dem Hörer fehlen, und sie sind unscharf und verschwommen, wenn ihre begrifflichen Nachbarn nicht mit auftauchen, ihren Anteil am Begriffsfeld beanspruchen und durch ihr Heranrücken die Grenzen des ausgesprochenen Wortes scharf hervortreten lassen» [Trier 1931: 8].

While the words grouped together into word fields tended to be those that could be said to fit onto single conceptual frameworks that were independently knowable, Trier himself consistently spoke of the *words* themselves as being necessary in the interpreter's consciousness, not the "concepts" or "facts" (or whatever) that underlie them. Essentially the same stand was taken by Mill, as we have seen, and has been taken by Trier's successors. (Weisgerber [1962], Coseriu [1967], etc.).

An argument that a word's meaning has more to do with its conceptual underpinning than its lexical peers is easy to demonstrate with "technical" vocabulary. For example, we can understand the word *hypotenuse* only by first knowing about a "right angle triangle": the hypotenuse is the side of a right angle triangle opposite to the right angle. In the English version of the Pythagorean theorem, the remaining sides of the right angle triangle are identified merely as "the other two sides" [10]. Thus,

(Ex. 1) In a right angle triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.

The English situation is interestingly different from the German, in which a special *name* is given to the sides which flank the right angle. They are known as *Katheten*. The theorem in German is:

(Ex. 2) In einem rechtwinkligen Dreieck ist das Quadrat über der Hypotenuse gleich der Summe der Quadrate über den beiden Katheten.

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[10] The example is perhaps imperfect, because in some textbooks the word *leg* is used specifically as a name of one of those 'other two sides'; but in a small sample of American-educated informants I found a majority who were unaware of that fact. And in any case, the word *leg* has other uses, too. – My predecessor in the use of the word *hypotenuse* for illustrating the semantic *figure: ground* contrast (in his case *base: profile*) was Ronald Langacker [1984].

Unlike *leg* (see footnote 10), this word is not borrowed from another domain. The only semantic assignment of the German word *Kathete* is that of designating a side flanking the right angle in a right-angle triangle.

A frame semantic view would relate each of the relevant terms directly to the background frame, namely, to knowledge of the characteristics of a right angle triangle. The word field theory, taken literally, would predict that the English word *hypotenuse* and its German homograph *have different meanings*, because only in the German case do there exist relevant lexical partners for the "mutual defining" to have its effect. It would further be predicted that the German school child who knows the word *hypotenuse* but unlike his classmates has not yet learned the word *kathete* does not have the same *meaning* for the former word that his companions do. This, of course, cannot be believed.

With technical language, a direct word-to-frame association is fairly easy to support; but many lexical field semanticists would (as does Coseriu) reject the relevance of such data to the sorts of claims embodied in the field theory. But the argument can be made, and has been vigorously made, that many domain-sharing words in the "general vocabulary" do not mutually define each other in the expected way, either. Dornseiff's [1938] study of the semantics of certain terms of bipedal locomotion (*springen, laufen, hupfen*, et.) made this point forcefully; as did Oksaar's [1958] study of the vocabulary of speed. (Essentially the same point, though not addressed to questions of field theory, is found in Weinreich's discussion of "non-terminologized" vocabulary [Weinreich 1963: footnote 69] in which English words from Dornseiff's domain were used. Weinreich's examples were *bound, hop, jump, leap, prance, skip* and *vault*) [11].

It is the devotion to word sets for their own sake, along with the commitment to seeing lexical semantic domains as language-internal phenomena, which distinguish lexical field theory from frame semantics. Frame semantics allows the possibility that speakers can have full knowledge of the meaning of a given word in a domain even if they do not know all, or any, of the other words in that domain. Frame semantics sees the set of interpretive frames provided by a language [12] as offering alternative "ways of seeing things" [13] and

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[11] My own interpretation of such observations is that sharing semantic content is no guarantee of membership in a single interpretive frame. In my view, such words as *skip, hop, leap*, etc., reflect separate frames, each representing its own schema of pedal locomotion. There is no context-free frame within which these terms occupy different 'slots', though such a frame could easily exist if there arose, for sports purposes, say, a need for stipulating precise distinctions among them.

[12] For convenience I use the phrase here 'provided by the language'. In a sense it is not *the language* which provides the frames. The language provides the mapping between linguistic choices and the interpretive frames, but while some of them are 'created by the language', most of them can be said to exist independently of the language. The situation with interpretive frames is similar to what Fauconnier has to say about mental spaces: «they are not part of language itself . . but language does not come without them». [Fauconnier 1985: 1].

[13] Perhaps this property of framing stands out most clearly in the treatment of metaphors in Lakoff and Johnson [1980]. In a different sense we can see alternative metalinguistic framings, relying on unconscious 'folk theories' of speech and conscious theories of the world, in the use of

hence has no requirement that they are interlinked to form a coherent Zwischenwelt (in the sense of Weisgerber) that characterizes the content patterning of a whole language; and, most importantly, frame semantics allows the existence of frames with single lexical representatives, a possibility ruled out in principle by lexical field theory. (We understand words like *devein* or *scratch* perfectly well without feeling the need to know any *words* with which they are paradigmatically opposed). All of these differences come from the different emphases on finding structure inside or outside of the language system itself.

U-semantics and T-semantics [14]

The data of any theory designed to account for the semantic structure of a natural language must include

 (1) the set of attested and possible linguistic forms,
 (2) the contexts or settings in which the linguistic forms are or could be instanced, and
 (3) a set of intuitive judgments about those forms in those contexts.

In T-semantics, the linguistic forms are typically limited to individual sentences; the contexts are thought of as providing, for each sentence, a pragmatic index (serving to anchor referring expressions in individuals in some world, associating tense indications to times in some world with a history, etc.); and the intuitive judgments are more or less limited to judgments of acceptability, ambiguity, synonymy and implication (see Gazdar [1979: 11]). In U-semantics, the linguistic forms are words and texts; the contexts include richly describable backgrounds, perspectives, orientations, ongoing activities, etc.; and the intuitive judgments are the data of understanding.

U-semantics is distinguished from T-semantics, then, in what it takes as its assignment and in how it seeks to carry it out. The T-semantic formulation of truth can be captured by saying that a sentence like (Ex. 3).

(Ex. 3). My dad wasted most of the morning on the bus.

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such hedges as *loosely speaking* and *technically* in recent work by Paul Kay [1983]. Alternative framings of the same phenomena using ordinary unhedged and nonmetaphorical language appear frequently in the public consciousness, as in mention of the difference between optimists and pessimists in the choice of *half full* versus *half empty*, or in preferences of «pro-choice» versus «pro-life» proponents for the terms *fetus* versus *baby* in identifying an unborn child. Since a language's lexical tool-kit provides the means of alternative schematizations of given situations, since the apparatus of metalinguistic hedges makes it possible to impose a variety of standards of interpretation in its categories, and since at every level there are metaphorical possibilities of 'seeing something as something else', it is difficult to believe that any language as such imposes a coherent life-view on its users.

[14] An important distinction between U-semantics and T-semantics is treated in Lakoff and Johnson [1980: 156-184]. My emphasis here is with sentences that are uncontroversially true in some contexts and have controversial truth valuation in other contexts; Lakoff and Johnson emphasize metaphorical utterances for which, although a correspondence can be set up between what a sentence means and how interpreters view the situation, the question of 'truth' as such does not come up.

is true just in case the person referred to in the noun phrase *my dad* did in fact waste most of the morning on the bus referred to by the phrase *the bus* on the day alluded to by the phrase *the morning*. If my dad wasted most of the morning on the bus, then the sentence «My dad wasted most of the morning on the bus» (spoken by me today) is true. The notion of truth here is what is defined by the so-called correspondence theory of truth and in general allows the formulation

(Ex. 4) «P» is true if P.

The goal of U-semantics, as I said earlier, is to uncover the nature of the relationship between linguistic texts and the interpreter's full understanding of the texts in their contexts. It is 'empirical' rather than 'formal' in that it seeks to find the detailed ways in which specific expressions fit their situations. In the dad-on-the-bus sentence, a U-semantic account would pay attention to the fact that the word *dad* is used rather than *father*, and further to the fact that *my dad* was used rather than simply *dad*, facts that fit particular kinds of relationships between the speaker and the speaker's father, and between the speaker and the addressee (speaker and addressee are not members of the same household). A U-semantic account would notice that the word *morning* is conventionally used in normal conversation to refer to the pre-noon portion of the 'waking day' or the 'working day', rather than, say, the twelve hours of the 'calendar day' preceding noon, and it would be assumed (given no contextual reason for rejecting that default interpretation) that whether or not 'most' of the morning was wasted would be computed on the basis of such an understanding. The word *wasted*, rather than, say, *spent*, brings into play a judgment that the time was not used profitably, or not as profitably as time spent elsewhere might have been: and this depends on a framing of time as a limited resource (see Lakoff and Johnson [1980]). The choice of the preposition *on*, rather than, say, *in*, situates the man in a bus which is 'in service' (see below). A U-semantic account of such a sentence would seek to construct, out of the parts of the sentence, a more or less complete 'envisionment' of both the setting in which the utterance could have occurred and the situation which can be said to obtain if the sentence's utterance is in good faith. The U-semantic account is 'compositional' in that its operation depends on knowledge of the meanings of individual lexical items, phraseological units, and grammatical constructions, but it is also 'non-compositional' in that the construction process is not guided by purely symbolic operations from bottom to top.

In a U-semantics which makes critical use of interpretive frames, it is assumed that linguistically encoded categories (not just words and fixed phrases, but also various kinds of grammatical features and syntactic patterns) presuppose particular structured understandings of cultural institutions, beliefs about the world, shared experiences, standard or familiar ways of doing things and ways of seeing things. Lexical items can be seen as serving discriminating, situating, classifying, or naming functions, or perhaps merely a category-ac-

knowledging function [15], within, or against the background of, such structures. In many cases, as we have seen with the calendric frame illustrated above, large groups of semantically related words can be seen as presupposing the same underlying conceptual framework. But such lexical networking is not an essential part of the frame notion. It is common for there to be opposing word pairs which embody frames serving single semantic oppositions (*up* and *down*, *dead* and *alive*, *front* and *back*, etc.). And of course it is quite possible for an isolated word to be the only lexical representative of a frame in our sense (as suggested earlier for, say, *hop* or *skip*).

In the past decade or so, the nature and workings of frame-like knowledge structures have been discussed mainly in work on artificial intelligence and cognitive psychology, and in the writings of such thinkers as Gregory Bateson and Erving Goffman [16]. The role of frame-like structures in various cognitive processes (perception, recognition, memory, text understanding, etc.) has been variously developed in this literature, but in most of this work little explicit connection is drawn between conceptual frames and linguistic description as such. In addition to seeing frames as organizers of experience and tools for understanding, we must also see frames as tools for the description and explanation of lexical and grammatical meaning.

Frame Semantics

Interpretive frames can be introduced into the process of understanding a text through being invoked by the interpreter or through being evoked by the text. A frame is invoked when the interpreter, in trying to make sense of a text segment, is able to assign it an interpretation by situating its content in a pattern that is known independently of the text. A frame is evoked by the text if some linguistic form or pattern is conventionally associated with the frame in question. For example, the sentence «We never open our presents until the morning» makes no mention of Christmas, yet interpreters who share certain cultural experiences, would immediately (in the terminology suggested here) invoke a Christmas context; replace the simple noun *presents* with *Christmas presents* and we have introduced a word which evokes that same context.

Some frames are undoubtedly innate, in the sense that they appear naturally and unavoidably in the cognitive development of every human (knowledge of the features of the human face may be an example). Others are learned through experience or training (e.g., knowledge of artefacts and social institutions), the extreme case being those whose existence depends entirely on the

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[15] By 'category acknowledging function' I have in mind those 'obligatory' accommodations represented by gender agreement, selection of numeral classifiers (in languages that have them), etc.

[16] See, for example, Bobrow and Collins [1975] and the papers assembled there, especially those by Abelson, Rumelhart and Winograd; Charniak [1975], Schank and Abelson [1977], Rumelhart and Ortony [1977], Sacerdoti [1977], Spiro [1977], Thorndyke [1977], Goffman [1974], Metzing [1980].

associated linguistic usages (such as the units of measurement – *inch, foot, yard*, etc. – and such calendric units as *week* and the named months).

As an account of the larger understanding process, claims about the importance of knowledge structures can hardly be controversial. What *is* controversial, however, is the suggestion that such knowledge belongs in linguistic description. In frame semantics it is held to be necessary to give an account of such knowledge in describing the semantic contribution of individual lexical items and grammatical constructions and in explaining the process of constructing the interpretation of a text out of the interpretation of its pieces. This cannot be taken as meaning that linguistics as such must incorporate all such knowledge within it; but that linguistics must have an account of how such knowledge arises, how it figures in the formation of categories of meaning, how it operates in the language comprehension process, and so on. In this respect, frame semantics can be said to take a much more encyclopedic view of meaning than is common. In particular, it does not seek to draw an *a priori* distinction between semantics proper and (an idealized notion of) text understanding; rather, it sees the units and categories of language as having come into being in the first place to serve the purposes of communication and understanding.

In a semantics devoted directly to explanations of communication and text understanding, it is necessary to rethink what might be meant by a language-internal *semantic representation* of a sentence. Within U-semantics there cannot be, in principle, a formal object which allows itself to be read off directly as the interpretation of the sentence. Rather, a language-internal semantic parsing of a sentence must be seen as merely a display of the lexical, grammatical and semantic material of the sentence, this display serving as a 'blueprint' (to borrow an image from Fauconnier) off of which the interpreter constructs an interpretation of the whole. The interpreter accomplishes this by bringing to the 'blueprint' a great deal of knowledge, in particular knowledge of the interpretive frames which are evoked by or capable of being invoked for the sentence in question, but also including knowledge of the larger structure (the 'text') within which the sentence occurs. Explaining the application of such knowledge in the interpretation process is by no means a traditional task of linguistic semantics; but it seems to me that a proper theory of natural language semantics needs to concern itself with how such knowledge is brought to bear in the interpretation process, which parts of it are conventionally reflected in linguistic forms, and so on.

It is important to realize that U-semantics does make a distinction between what a sentence conventionally means and what utterances of the sentence can mean in given contexts. The conventional (or 'literal' or 'properly linguistic') meaning of a sentence is that set of conditions on the interpreter's understanding of the sentence which figure in all of its contexts; in determining the situated meanings of uses of the sentence, one integrates the sentence's conventional meaning with its linguistic and extra-linguistic context. This conventional meaning of a sentence thus includes aspects of meaning that are generally taken as belonging to pragmatics (just in those cases in which particular words

or grammatical constructions appear to be dedicated to given pragmatic purposes), as well as general 'instructions' on how to find material for the interpretation in the context (as with a number of anaphoric processes, novel nominal compounds, etc.).

I view the process of interpreting a linguistic text as that of giving it a maximally rich interpretation, an interpretation which draws everything out of the text that it can [17]. In such a process, the successful interpreter arrives at an interpretation of a text by having at hand, for each conventional linguistic form in it, an implicit answer to the question:

Why does the language have the category which the form represents?

and by being able to figure out (usually instantaneously) an answer to the question:

Why did the speaker select this form in this context?

To be able to answer the first question is to have access to the abstract frame which motivated the category in the first place: to have access, that is, to 'the background' in Searle's sense [Searle, 1980]. To be able to answer the second question is to know where one is in the process of constructing an interpretation of the whole text: to know what frames are active in the text world at this point and what values have been assigned to their slots, and to know what functions the just-introduced frame can accomplish in this setting. The interpreter must then invoke the kinds of knowledge which will make it possible to integrate the answers to these questions, for the individual lexical items and grammatical constructions found in the text, in the job of constructing an interpretation of the text as a whole. It should be noticed that the second question asks why the speaker selected a particular linguistic form, and not why the speaker said what he said. The reasoning *resembles* that of determining implicatures in the manner of Grice [1975], except that in this case it builds on conventional meanings of linguistic forms.

With respect to word meanings, frame semantic research can be thought of as the effort to understand what reason a speech community might have found for creating the category represented by the word, and to explain the word's meaning by presenting and clarifying that reason. With respect to text interpretation, frame semantic research can be thought of as the effort to understand the process by which frames are introduced into a text to create and develop the growing textual context.

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[17] A semantics anchored in communication can take as its point of departure either the encoder's or the decoder's viewpoint. For various reasons, it seems to be easier to approach a description of the process from the decoder's, that is, the interpreter's, viewpoint. For discussion, see Fillmore [1982].

I have suggested that judgments of understanding are more relevant to frame semantics than judgments concerning truth. By that I mean that, while in frame semantics we are indeed concerned with the ability to know what conditions must be satisfied by any situation or 'world' in which or about which a given linguistic text may be said to be 'valid', no part of this requires an ability to decide when individual *sentences* can be said to be 'true'. The phenomenologically primary data for language theory are taken to be the data of 'understanding' rather than such theory-defined derivative data limited to conditions under which *sentences* can be described as 'true', or such tertiarily defined data as native speaker judgments of truth-bound conditions such as synonymy and implication. Frame semantics requires an account of the ability of a native speaker to 'envision' the 'world' of the text under an interpretation of its elements.

A difference in emphasis between T-semantics and U-semantics can be shown by a brief examination of one use of the English preposition *on*. In the English expressions used for talking about the 'spatial' relationships that a passenger on a vehicle has to the vehicle, the choice of *on* or *in* is determined sometimes by easily understood semantic principles quite generally taken to involve the basic meanings of these prepositions, sometimes by separate conventions statable with reference to the associated noun, but *sometimes* (as when we are talking of travel by airplane, bus, dirigible, or train) a rather complex set of considerations appears to be relevant. In particular, the framing calling for *on* defines a situation in which the vehicle in question is *in service* (as apposed to standing idle) and in which the vehicle *was destined to make the journey anyway* [18]. Thus, one can speak of passengers being *on the train, on the bus, on the airplane, on the Graf Zeppelin*, etc., in spite of the fact that when these vehicles (or the parts of them that contain passengers) are framed as 'containers', the preposition *in* would seem to be more appropriate. An example of a situation in which the preposition *on* would not be appropriate, but where *in* would do perfectly well, is one in which a group of children are playing in an abandoned wheelless bus in a vacant lot. We could not say of them (unless, like them, we were pretending) that they are *on* the bus: they could only be described as being *in* the bus. (Only if the bus is 'in service' is the preposition *on* completely appropriate). As for narrowing the condition down to the situation in which the vehicle in question needed to be making the trip anyway, we can consider a case in which I overpowered the driver of a bus, evicted the passengers, held a gun to the driver's head, forced him to turn the bus in the opposite direction, and had myself taken to my favorite shopping mall. If the intuitions we are trying to formulate are correct, one could not say of such a situation that I went to the market *on* the bus. The situation described is too different from what would be framed by *on*.

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[18] This last point was drawn to my attention by Paul Kay.

The understanding judgments about such examples seem to be uniform with speakers of American English that I have consulted. But confident judgments about the conditions under which such sentences are 'true' cannot be counted on. Consider a situation in which somebody agreed fully with the U-semantic judgments just suggested, but insisted on getting from us judgments about whether given sentences, referring to these situations, could be said to be 'true'. «Sure», such a person might say, «nobody would *say* of those kids playing in that abandoned bus that they are *on* the bus, but what I'm trying to get from you now is whether or not making such a statement might at least count as saying something *true*». I am convinced that speakers would find such a question difficult if not impossible to answer, as have a number of my own informants. I am not speaking merely of the unnaturalness of actually asking such questions in a normal conversation. Even when people are willing to play the game of deciding for a presented sentence whether or not it is true, they would not have clear intuitions about what to say in such a case. This is a situation in which questions of truth simply do not seem appropriate [19]. When the situation in which an utterance is used matches the utterance's natural interpretation, the judgment of truth seems to be perfectly straightforward. But when the situation does not match it, there is a considerable difference between the case where the utterance is simply false («No, the children are over there on the beach, they're not on the bus yet».) and the case where one does not know what to say. It is clear that we have here a situation in which the conventional meaning of a sentence includes more than a set of truth conditions.

The example with *on*, I believe, has shown that sometimes the categories represented by linguistic forms are not immediately apparent (to the analyst), with the consequence that the details of their contribution to understanding need to be teased out by subtle displays and arguments. In the case of *on* in phrases about such vehicles as buses and trains, it may be possible that the correct description has not yet been achieved.

Among my own favorite examples of terms requiring subtle analysis [Fillmore 1982] are those that make up the *land* and *sea* frame as opposed to the *ground* and *air* frame. Through these oppositions we recognize that locating something 'on the earth's dry surface' requires the selection of one or the other of these framings depending on whether a contrast is intended with being in water or with being in the air. If we were to hear of a species of birds that they spend their lives *on the ground*, we would conclude that they may swim but they do not fly; were we to hear of birds that spend their lives *on land*, we would correspondingly conclude that they may fly but they do not swim. If we learn of somebody that he managed to spend two hours *on land*

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[19] I am speaking, of course, of uses of the English word *true* and the judgment that one makes when one uses it. It is possible for somebody to learn a new use of that word (in the way that we can learn stipulated meanings of *large* and *first class*) by which whenever the framing conditions are not satisfied, an affirmative sentence is not true and a negative sentence is true.

today, we assume that it was a sea voyage, not an air flight, that was interrupted during these two hours.

Examples like these always bring the Gricean notion of relevance [Grice 1975] to mind, since it is easy to believe that the inferences we made about the birds and the traveller were based, not on what we were told directly, but on the fact that we were told what we were told. In fact, it is common to explain interpretational phenomena of the type just mentioned as resulting, not from compositional principles of linguistic semantics, but from application of the 'Maxim of Relevance'. For it to be relevant to say «A» (say, *on land*), we conclude that «not B» (not *at sea*); for it to be relevant and informative to point out that a certain amount of time was spent *on land*, we conclude that the rest of the time must have been spent *at sea*. But of course, it is precisely the frame, identified by linguistic convention with the literal meaning of these expressions, which provides the material for such inference-making. Gricean relevance and its role in drawing inferences is often *more* than just pragmatic considerations based on linguistically communicated situations; it frequently follows and uses a linguistic schematization.

I have suggested elsewhere [Fillmore 1982] that in many of their usages, the words *shore* and *coast* differ with respect to whether the boundary between land and water is seen as the boundary of a water mass or a land mass. Hearing of our friends that they *reached the other shore before dark*, we assume they were in the water; and hearing of another group of friends that they *reached the coast by Tuesday*, we assume that they were traveling over land. The distinction is seen most clearly in expression about, say, the distance *from shore to shore* as opposed to the distance *from coast to coast*. Traveling from the west coast of Africa to the east coast of South America cannot be described as traveling *from coast to coast*; these particular phraseological units have been created in conformity with the words' manner of framing features of the earth's surface. Gricean relevance, relevant again, does not operate independently of linguistic knowledge.

The contributions that word meanings make to text comprehension are sometimes very deeply backgrounded. Let us suppose that in an English-language text we come across either or both of the expressions *out west* and *back east* in stylistically unmarked locative expressions. We will recognize, if we understand the contribution these expressions make to the text's interpretation, that the bit of history which motivates them has populations arriving on a continent at its eastern border and migrating westward in the course of time; knowing that fact about the world, and knowing about our language that precisely these expressions (*out west* and *back east*) have been given the meanings they have based on this history, we naturally and automatically find ourselves situating the text world spatially in North America and temporally after the beginning of the European settlements. The text might not explicitly *tell* us that the setting is in North America, but we can know it anyway. Even if the geographical/historical categorization which underlies the use of these expressions is in no way relevant to the flow of the text, the interpreter is nevertheless aware, at some level, of the background conditions which motivated the ex-

pressions, and that awareness shapes the total interpretation[20]. The eastern and western regions of Chile cannot be spoken of fittingly using these expressions.

There are linguistic forms and categories whose selection reflects an assumed vantage point or perspective. Again, although 'understanding' judgments about such devices are perfectly ordinary, questions of the truth of sentences containing them are bothersome. In English, *come* and *go*, alongside of *bring* and *take*, provide rich possibilities of perspectivizing. (See Fillmore [1971], Clark [1974]). Suppose we wished to make a judgment about such utterances as

(Ex. 5) He moved to California as a teenager and never came back east until he had reached retirement age.

said by, say, a Hawaiian, somebody who has no reason whatever to assume a 'back east' point of view, or

(Ex. 6) The prices will come down again soon.

said by a merchant (whose perspective would induce him to say *go down*, not *come down*), rather than a consumer. The perspectivizing associated with the forms of these sentences comes so automatically, that it is hard to imagine the sentence used in a way in which the perspectives were denied. Again, judgments about understanding, following directly from the conventional literal meanings of the sentences, are intuitively obvious in cases in which judgments of truth are in no way sensitive to the distinctions at hand.

In a continually changing society, we frequently find that the names for perfectly familiar things have changed on us, and that we are now invited to 'see' these familiar things in a new light. For example, if you tell me that you find it easier to tell time with an *analog watch* (an expression which would have made no sense whatever just a few years ago), I will know that you are talking about the ordinary, familiar wrist-worn timepiece we have all known since our childhood, and which until very recently was only known as a *watch*. My conclusion, based on the phrase you used to identify the object, will be that you find it preferable to a *digital* watch, the kind of watch with which the word *analog* tells us it is being compared. The only reason you had for *choosing* the word *analog* was because of the opposing word *digital* which you expected its use would bring up in my mind. This is a clear case of reasoning from the frame rather than from knowledge of the class of objects designated by the descrip-

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[20] It should be pointed out that if someone were to bring to my attention, by way of a counterexample to the claim just made, another well-profiled territory with a similar east-to-west migration history, it would be necessary not only to present that as a competing situation for motivating our two expressions, but also to show that, *with respect to that community* the two phrases *out west* and *back east* were conventionally *given* those meanings. In other words, we need to distinguish between the situation of a background schema *motivating* the use of an expression and *explaining* its use; we know why *out west* and *back east* mean what they do, but they might not have been given these meanings at all.

tion. The word you used helped me to know what you were talking about, not only by letting me know what sorts of objects you were designating, but by letting me know what it was to be compared with.

There are many 'ordinary' things that have acquired special names only because, under the description provided by the special name, they are assigned membership in a contrast set whose other member motivates the existence of the contrast. Examples analogous to the *analog watch* include the *acoustic* guitar, which of course is an ordinary guitar mentioned under a description which puts it in contrast to an *electric* guitar; *World War I*, which was not called *World War I* until there was a World War II to get the counting frame started; and *birth mother*, distinguished from *genetic mother*, only because it is now technologically possibly for an ovum to be produced in one woman's body and to come to term in another's.

Keeping these examples in mind, we can imagine someone saying, in 1984,

(Ex. 7) During World War I, Ronald Reagan's birth mother dropped his analog watch into the sound hole of the acoustic guitar.

The utterance could describe a perfectly ordinary event, but most of the language used in describing it could not have been used at the time of the event. At that time there could have been no reason to invoke the frames signalled by each of the expressions *birth mother, analog watch, acoustic guitar,* and *World War I.* Notice here, too, that the question of whether our sentence might or might not be true does not quite come up. We could interpret the person saying our sentence as claiming that Mrs. Reagan, Ronald's mother, dropped Ronald's (ordinary) watch into her (ordinary) guitar at some time during the period in which WWI was going on. Given that interpretation, we could say meaningfully something about whether *what the person said* was or was not true. But it would be pointless to ask whether the *sentence* was true. Again, Gricean considerations are a smokescreen: if we feel that we have been given 'too much information' (that, in other words, the speaker has violated the Quantity Maxim) in the case of the watch, the guitar and the mother, we have to realize that it is not by knowing what these words *designate* that we draw this conclusion, but by knowing what contrast set, what frame, the words belong to, and we find that we cannot interpret the sentence without bringing such information into play.

Frame Semantics and Truth

Any version of T-semantics that takes natural language as its domain has to provide some story about the wider phenomena of 'understanding', and this is generally done by situating semantics proper within a larger body of theory touching on pragmatics, belief systems, general semiotics, and the like. Correspondingly, a theory of U-semantics needs to have some account of the use of natural language in reasoning and logic. In particular, we need to be able to say something about judgments speakers make when they use the ordinary En-

glish word *true*, and what it is that speakers are doing when they produce a negative sentence.

The words *true* and *false* fit one frame in normal talk, but their use in logical discourse must be understood in terms of a more technical frame, somewhat in the way that *first class* has a technical meaning in the language of the travel industry. I will suggest that the technical meaning of the word *true* used in discussion of logical semantics is parasitic on the natural use of the word. There are numerous cases in natural speech where participants would not know whether or not to say that «P» is true, and the reason will be that they will be uncertain whether the sentence's context appropriately fits its frames. (Recall the uncertainty report about the truth of the 'on the bus' statement earlier). There is, however, a second and technical sense of *true*, learnable by speakers of the normal language, which uses importantly different standards. A sentence is 'true', in the correspondence theory of truth, if all of its framing conditions are satisfied and the situation it describes holds in its world. In all other cases it is false, if we are working within a two-valued logic. Negative sentences are true whenever their corresponding affirmative sentences are false, and false whenever their corresponding affirmative sentences are true. Negative sentences can be evaluated in two ways (or, alternatively, negative sentences permit ambiguous construals), according to whether the framing conditions are taken as holding or not.

Expressed in terms of U-semantic truth judgments, a judgment of the form

(Ex. 8) «P» is (T-semantic) true

is to be taken as meaning

(Ex. 9) A person who uttered «P» would be making a (U-semantic) true statement and would be speaking cooperatively and in good faith.

A sentence evaluated in such a way can always be judged true or false, with no obvious unclear cases (such as those we saw with *on* above). If the conditions under which «P» can be judged true (in the informal sense) obtain, the larger sentence is true; otherwise it is false. By reconstructing *true* in this sense, the English language can be tamed to operate within a two-valued logic[21].

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[21] The decision to treat the English word *true* as having exactly the properties of the logical value True in a two-valued logic is a bit like stipulating in a coin-tossing event that if the coin lands 'heads', you win, *otherwise* I win – where the 'otherwise' can include not only the situation in which the coin lands on its edge or is picked off mid-air by a flying bird, but even the situation in which I don't toss the coin! (The image, without the last fillip, is borrowed from Black [1952]). The comparison I am making is that between 'pre-theoretical' framings of a category and those reframings that come to be used for certain kinds of precise discourse. A pre-theoretical understanding of the word *angle* is associated with an image like that of a bent stick [Arnheim 1969: 183] and lends itself to 'prototype' analysis: some angles are better examples of the concept than others. A theoretical frame imposed on the same word conceives it in terms of the degree of rotation of a ray around a point, permitting such notions as a 180 degree angle or a 360 degree angle. A pre-theoretical understanding of the word *color* has it as a category which includes black and white without question; but these hueless percepts are excluded from scientific discourse about colors. Now when theoretically motivated operational redefinitions of concepts appear, they do

Negation in formal semantics is necessarily defined in terms of truth, and that quite simply: where one proposition is true, its negative counterpart is false, and vice versa. With natural-language 'true' limited to utterances whose contexts satisfy their frames, the same relationship holds in frame semantics. Frame semantics, however, recognizing that there are contexts in which an affirmative sentence cannot be judged to be true or false, must also recognize the same possibilities with negative sentences.

In frame semantics it is necessary to make a number of partly cross-cutting distinctions with respect to speakers' production of negative utterances. While we recognize that negative sentences are frequently produced in contexts in which the possibility of the hearer's entertaining the truth of the corresponding affirmative has just been raised (see Gazdar [1979: 67], for discussion), we must also recognize that there are numerous situations in which such a contextual relationship does not hold. We need to make a distinction between context sensitive negation, meeting the mentioned condition, and context free negation, interpretable without such contextual support. To be sure, any negative sentence is to be interpreted with respect to some framework within which what it asserts is opposed to its associated opposite; the distinction here has to do with whether or not the relevant framework is introduced in the utterance's immediate prior context.

Secondly, we need to distinguish two important ways in which negation and framing interact. In particular, we need to be clear about the distinction between within-frame negation and cross-frame negation, or what might alternatively be called frame accepting and frame rejecting negation. In the case of within frame negation, a framing of a situation is accepted, and one element of the frame is designated in contrast to others. With cross frame negation, several conversational conditions need to be satisfied. In general, cross frame negation occurs when (1) in the ongoing conversation, a speaker has just introduced a framing of a situation within which the present speaker does not wish to operate, (2) the sentence is produced in a form, or with a prosodic pattern, special to frame rejection, and (3) the sentence is followed (typically) by an 'explanation' of the reason for the rejection, or of a sentence which provides the preferred framing of the situation at hand. Within-frame negation can be context free or context sensitive, where by context is meant the preceding discourse context; cross-frame negation is necessarily context-sensitive.

Context-free within-frame negation can be illustrated with a sentence like (Ex. 10)

not (necessarily) *replace* the older definition; they exist side by side with them. It could be noted that the words *real* or *really* can freely go with either framing. That is, we can easily understand what would be meant by someone saying «Of course, a 180 degree angle isn't a *real* angle», going with the pre-theoretical notion, just as we can know what would be meant by someone, going with the technical framing, who told us that black and white aren't *really* colors. The T-semantic notion of truth is of undoubted value in working out the details of certain kinds of formal languages. The questions that concern me in this paper have to do with whether a T-semantic description of a natural language offers the only precise way of constructing a proper theory of linguistic semantics, and whether the boundary line it sees between what does and what does not belong to a theory of semantics is one it has found or one it has drawn.

(Ex. 10) Her father doesn't have any teeth.

It is 'context free' because the discourse setting had no need to *create* any expectation about the person's face. The negation in such a sentence does not need any special cohesive connection with anything in the prior discourse. Our frame of the human face is available to us always, without the need of contextual support, and so the sentence can be thought of as instructing the interpreter to make use of the human face frame and modify it so that the figure envisioned has no teeth. By contrast, a sentence like (Ex. 11)

(Ex. 11) Her husband doesn't have any walnut shells.

must be supported by a context in which a question of the possibility of her husband's having walnut shells had been raised. Put differently, the frame needed for interpreting the first sentence *comes with* (is evoked by) the word *teeth*, whereas the frame needed for situating the second sentence had to be constructed by the previous context. What this means is that an utterance *hors contexte* of *He has no teeth* is capable of leading to a proper 'envisionment' of this portion of the text on its own, but an utterance of *He has no walnut shells* requires a preceding context in which an interpretive structure of some sort involving having or lacking walnut shells has been made present [22].

Evidence for the importance of framing in negation can be seen in the fact that frequently the *number* (singular or plural) of a noun in a negated predicate is expected to match the number, in the unmodified frame, of objects of the type designated by the noun. That is, we prefer (Ex. 12), with singular *nose*, to (Ex. 13):

(Ex. 12) Your drawing of the teacher has no nose.
(Ex. 13) Your drawing of the teacher has no noses.

but we prefer (Ex. 15), with plural *toes*, to (Ex. 14):

(Ex. 14) The statue's left foot has no toe.
(Ex. 15) The statue's left foot has no toes.

If such negative sentences had *only* the standard expected truth-conditional interpretation, then these sentences would have to be taken as meaning, all on an equal footing, that the number of noses or toes was simply zero, and would be judged as true or false according to whether that statement of the cardinality of the relevant body part sets was correct. A semantics based on judgments of understanding requires more than that [23].

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[22] George Lakoff, in conversation, has argued for a more complex set of contrasts than those I have proposed here. He recommends distinguishing frame-internal negation from frame-accepting negation, the former specifically for concepts which are inherently negative (being bald, missing the target, etc.) to give expression to the fact that certain categories have negativity 'definition-internally', so to speak. I have not taken advantage of these distinctions here.

[23] Notice that a semantics based on understanding would lead to some level of understanding even in cases where word meanings were not understood. A sentence containing unfamiliar words, like, *There's no wibble in your drawing of the troly* lets us know at least that a troly is supposed to

But in addition to within-frame negation of the sorts just examined, there is an important mode of negation that is best understood in terms of the speaker's rejection of a frame that has been just introduced into the conversation. This mode of negation is always context sensitive. The context has to give the speaker the occasion for producing the negative sentence, by having provided in the conversation a frame within which the present speaker does not wish to function; and the speaker's utterance has to be taken as a rejection of that frame. This type of negation can be seen as an announced breach of conversational cooperation. In the case of within frame negation, the frame itself is accepted without question, and a contrasting element within it is being denied. In the case of frame rejection the speaker is heard as denying the appropriateness of the frame itself to the current situation.

There is a polar opposition frame whose poles are *stingy* and *generous*, evaluating an individual's concern for others in the use of money and other possessions; there is a second frame whose poles are *thrifty* and (say) *profligate*, evaluating people's tendency to prepare for the future by treating their possessions with care. Since both of these framings have to do with an opposition between keeping money and letting it out, we can distinguish in each case a 'low' end and a 'high' end, positive moral evaluation being assigned to the 'high' end in the *stingy*: *generous* case, to the 'low' end in the *thrifty*: *profligate* case.

Within each of these frames, the act of denying one pole can be heard as asserting the other; but there is a second sense of denial that must be heard as denying the relevance of the frame as a whole. Consider examples (16) through (19):

Within-Frame ('frame-accepting') negation

(Ex. 16) [You're wrong about John]. He isn't stingy; he's really very generous.
(Ex. 17) [Your impression of John is wrong.] He isn't thrifty; he's actually quite careless with his money.

Cross-frame ('frame-rejecting') negation

(Ex. 18) John isn't being thrifty, he's just downright stingy.
(Ex. 19) John isn't stingy; it's just that he's thrifty.

In (Ex. 16), the speaker is accepting the appropriateness of the schematization of human character that has *stingy* at one pole and *generous* at the other, and is denying the claim that John is properly evaluated at the *stingy* end of the scale. In (Ex. 17) a different frame is being appealed to, and the sentence points to opposite poles within that frame. In (Ex. 18) and (Ex. 19), however, what is being rejected is the very standard within which the word *thrifty* or

have just one wibble. Paul Kay has reminded me of the fact that in contexts calling for scalar interpretations (in the sense of Fauconnier [1975]), a singular noun does perfectly well in a negative sentence. (*During our entire vacation we didn't catch one fish*, is surely not to be understood as the denial based on the expectation of catching just one fish).

stingy is being applied. In each of these latter cases, the speaker is saying that the evaluation scheme within which the word is defined *does not apply* to the individual under discussion, or that at least it does not apply with respect to the characteristics of that individual currently being considered.

It should be pointed out that in interpreting a frame-rejecting utterance, a particular interactional or rhetorical frame needs to be invoked. In the cases just illustrated, the sentences can be interpreted by making use of an invoked evaluative frame linking the two lexically evoked frames together. Our frame-rejecting utterances can be interpreted as saying, *You've classified him as good [bad]; I classify him as bad [good]*.

The phenomenon here called frame rejection has been discussed, in slightly different terms, by Deirdre Wilson in her chapter on non-truth-conditional semantics in Wilson [1975]. In her discussion she points out that the basis of the negation in cases like these is the speaker's intention to block the natural conclusions that might be drawn from the associated affirmative sentence. Using (Ex. 20) among her examples,

(Ex. 20) He didn't lose his little finger: they removed his whole arm.

Wilson has the following to say

«If *p* is false, that is one good reason for asserting *not-p*, but an equally good reason for making this assertion would be that one did not wish to make the assertion that *p*, for some other reason than that it was false. Now one very obvious reason for not wishing to make a given assertion is that it would be misleading: it would suggest something with which one disagrees . . . So given that uttering *p* might suggest *q*, and given that one does not want to suggest *g*, one might say *not-p*, not because *p* would be false, but because it would be misleading» [p. 151].

She follows that suggestion with this:

«On the treatment of negation I am considering now, such an assertion would still come out as true, without negating an actual truth-condition» [p. 151]

While recognizing the existence of non-truth-conditional semantics in natural language, it is still necessary, in Wilson's view, to require decisions to be made on whether the sentences which exhibit it are true or false. It is necessary, in other words, to declare that the clause «He didn't lose his finger» is 'true' in this situation.

Frame denial has something to do with the metalinguistic notion of truth introduced earlier. A negative sentence construed as frame-rejecting can be paraphrased as something like (Ex. 21)

(Ex. 21) You would not be saying something that is both true and cooperative if you said «P».

As such it can be used in cases where the clause being denied does itself express something true, as in the first clause of (Ex. 22)

(Ex. 22) I don't *think* I'm right; I *know* I'm right.

Here what is being denied is the framing of the discourse that would be wrongly associated with a weak epistemic claim; the speaker *does* of course 'think' he's right. The effect of the sentence is to place thinking and knowing on a pragmatic scale, and, in the sense of scalar negation, produce an utterance that communicates something in the pattern, «Not merely A, but even B».

Wilson also discusses non-truth-functional negation with lexically tied framings, contrasting the words *spare* and *deprive* [Wilson 1975: 138]. Here she accepts as properly part of «semantics» the kind of judgments by which a sentence like (Ex. 23) gets interpreted.

(Ex. 23) You didn't spare me a day at the seaside: you deprived me of one.

The predicate *spare* [*someone something*], positive or negative, frames the to be-prevented event as something undesirable, whereas *deprive* [*someone of something*] frames it as something desirable. My suggestion is that the kind of negation illustrated by just such examples is identical to the general case of so-called 'external' negation, and that it has a metalinguistic interpretation throughout. In the discussion of presuppositions below, I am going to argue that the non-truth-conditional notion of negation which Wilson suggests is needed anyway in a full account of the semantics of a language, can be applied reasonably to a critical step in the arguments about the role and nature of semantic presuppositions.

Presupposition

In the treatment of presuppositions, U-semantics and T-semantics lead to different conclusions, and this because of notions about truth and negation. The argument I wish to make is that the intuitions about presuppositions and the so-called 'negation test' hold under the 'normal' or within-frame sense of negation and that apparent counterexamples are instances of Wilson's non-truth-conditional negation, which I equate with cross-frame negation.

It would seem that at least some of the phenomena in the large grab-bag of intuitions and observations that have gone by the name of presupposition can be given a useful description in terms of frames. In both cases it is natural to posit a relation between ground (that which is taken for granted, the background, the presupposed) and figure (that which is presented, highlighted, posed). I wish to re-examine presupposition intuitions in the light of a semantics based on understanding rather than truth.

The informal notion of presupposition takes off from the realization that there are instances of sentences which do not look like conjunctions of statements but which can nevertheless be analyzed as revealing two messages simultaneously, these distinguished, in the useful terminology of Oswald Ducrot [1972], as what the sentence *poses* and what it *presupposes*.

Examples of sentences thought to bear presuppositions are given in (Ex. 24)

through (Ex. 31) below, together with their two-track semantic parsings, separating what they pose (i) from what they presuppose (ii) [24]:

(Ex. 24) *JOHN REGRETTED SIGNING THE LETTER*
    (i) John felt bad about signing the letter.
    (ii) John signed the letter.
(Ex. 25) *JOHN DOESN'T REALIZE WHO YOU ARE*
    (i) John lacks full knowledge of your identity.
    (ii) Knowledge of your identity should be important to John.
(Ex. 26) *DID BILLY HIT SUSIE AGAIN (at t)?*
    (i) Did Billy hit Susie (at t)?
    (ii) Billy hit Susie at least once (earlier than t).
(Ex. 27) *FRED STOPPED RUNNING (at t).*
    (i) Fred was not running (after t).
    (ii) Fred had been running (before t).
(Ex. 28) *I POURED MYSELF ANOTHER CUP OF.COFFEE (at t).*
    (i) I poured myself a cup of coffee (at t).
    (ii) I had already had some coffee (before t).
(Ex. 29) *IF SHE HAD TAKEN THE MEDICINE (by t), SHE WOULD HAVE SURVIVED.*
    (i) Her taking the medicine results in her surviving.
    (ii) She didn't take the medicine (before t).
(Ex. 30) *HE PRETENDED TO BE AN ADMIRAL (at t)*
    (i) He behaved in a way which would encourage people to believe that he was an admiral.
    (ii) He believed (at t) that he was not an admiral.
(Ex. 31) *BOTH OF JOHN'S CHILDREN ARE A BURDEN TO HIM.*
    (i) Two people who are children of John's are a burden to him.
    (ii) John has just two children.

The intuition that led to a theory of semantic presuppositions was the feeling that what each of the sentences above was capable of *posing* depended on the truth of what it *presupposed*, and that some aspect of the *form* of the sentence (i.e., lexical choice or grammatical construction) signalled that presupposition [25].

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[24] The bracketed phrases with «t» in the examples, referring to time relations associated with the tenses of the sentences, serve to smuggle in necessary parts of the understanding of the presupposition relation, parts that would ordinarily be 'understood' from the changing context in a developing text. In much of the presupposition literature, *pretend* is spoken of as being simply counterfactive; however, what is presupposed has to do with the pretender's beliefs. The man pretending to be an admiral might have not yet seen his promotion papers. (See also Kempson [1975: 71]). The full description of *pretend* needs to be stated more carefully still, since the paraphrase proposed in (Ex. 30) does not cover cases of 'solitary pretending' («Whenever I'm alone, I pretend you're with me»). The example with *realize* presents an aspect of this verb, namely in its use with interrogative and exclamatory WH clauses, that is not frequently discussed. The roster of examples has several well-known types missing. For a more complete list of structures claimed to create presuppositional understandings, see Levinson [1983: 181-183].

[25] It may be necessary to say something about what it is that *does* the presupposing. It is sometimes said, for example, that the word *regret* presupposes the factivity of its complement. This way

An important body of assumptions on the relation between the posed and the presupposed emerge in U-semantics. Among these:

1. For a large number of specific cases, what the sentence presupposed was not subject to suspension by conditionality (*if he hits you again* presupposes the original blow), interrogation (*do you want another cup of coffee?* presupposes that first cup), or negation (*he wouldn't stop screaming* presupposes a state of screaming).

2. Straightforward second-party challenges or supporting statements following a presupposition-bearing utterance are not heard as challenging or supporting what was presupposed, but what was posed. Thus, for example, in a conversation like (Ex. 32):

(Ex. 32) A: Does she realize who I am?
B: I don't think so.

B's answer would not easily be taken as meaning, «I doubt whether your identity could be of any interest to her», but rather as expressing a doubt that she knows who A is, while leaving uncontested the assumption about A's potential importance to her under the given circumstances.

3. In cases of presupposition failure, the question of a sentence's «truth» *does not arise*, in Strawson's phrase. Thus, if I were to say something like (Ex. 33):

(Ex. 33) Even *I* couldn't lift the box.

in a situation in which I was the weakest, rather than the strongest, in the relevant group, the question of whether what I said might nevertheless have been 'true' (since I couldn't in fact lift it) simply doesn't come up.

4. Presupposition-bearing imperatives can be separated into occasional and standing. Occasional imperatives are valid just in case their presuppositions are satisfied. («Stop telling lies!») Standing imperatives bring with them, not the requirement that what is presupposed is true, but the requirement that the imperative is valid just when the presupposition holds. Charges of disobedience

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of talking, in which I have been one of the indulgers, has been criticized for its carelessness. If it is to be tolerated further, it must be so by a recognition that in certain cases information associated with particular words is what invites the interpreter to construct the presupposition of the utterances containing the word. I believe that the lexical presupposition locution is not deeply misleading, as long as we know how to reconstruct the situation as one involving *people* expressing the presuppositions of what they say through their choice of specific linguistic material that we can see as having that function. I believe that there is a connection between lexical items and the frames which they represent, and that, under conditions to be explained below, this relationship can be phrased as a generalized presupposition. The presupposition relation needs to be stated carefully. Writers have sometimes given the impression that an utterance's presuppositions comprise any beliefs attributable to the speaker; but that would surely include things like «You are listening to me», «You understand the language I am speaking», «All tautologies are tautologies», and so on indefinitely. But we are concerned only with those beliefs that we feel warranted to attribute to the speaker by virtue of specific lexicogrammatical properties of the utterance at hand.

of standing imperatives on the grounds of violated presuppositions are not valid. (One cannot be guilty of failing to 'yield' at an intersection on the grounds that there was no oncoming traffic to yield to.)

5. The notion of presupposition in a semantics of understanding recognizes what is 'presupposed' by an utterance act depending on its position in an ongoing discourse. Thus, for a sentence like (Ex. 34),

(Ex. 34) John was put in jail on Monday and escaped on Tuesday.

there is no need to ask whether the compound sentence *as a whole* does or does not presuppose that John was in a place from which one could not leave as a matter of course; the second clause presupposes that, however. (The important relation between presupposition and narrative tense makes it pointless to ask whether a compound sentence with a narrative advancing relationship between the two parts «presupposes» anything as a whole). For a sentence like.(Ex. 35),

(Ex. 35) If Bill and Sue have children, I bet their children are beautiful.

there is likewise no question of whether the sentence as a whole presupposes that Bill and Sue have children; the second clause presupposes that, but within the realm of conditionality presented by the first part. (See Gazdar [1979: 70], and sources cited there).

The Critical Case

The literature of linguistics and language philosophy in the mid seventies was filled with proposals and debates about the proper treatment of presuppositional phenomena. At issue in these debates were such matters as whether the notion of presupposition could be carefully enough defined to identify anything knowable; whether it was words, sentences, utterances, propositions, or people who did the presupposing; whether the asymmetry in the 'tracks' of a two-track parsing of the kind illustrated above was to be accounted for within a theory of semantics, or as a matter of linguistic pragmatics, or not at all; whether the foundation of a proper theory of semantics for natural language was a two-valued logic or a three-valued logic, or whether, in fact, a truth-conditional semantics was appropriate for natural language at all; and what there was to say about the presuppositions of a complex sentence once we knew there was something to say about the presuppositions that would ordinarily be associated with its subordinated clausal elements (the 'projection problem' – see Langendoen and Savin [1971]). Holding a crucial importance in this discussion was the negative of a presupposition-bearing sentence used in a setting in which what was presupposed was false. We turn our attention to such utterances now.

Let us re-examine the cases of *regret, realize* and *pretend*, as illustrated in examples (24), (25) and (30) above. In each case, the *second* factor of the

given semantic parsing is the presupposition, while the first represents what the sentence is mainly about. Recall that the negation test, proposed for example by Strawson, would have it that, for the relevant examples [26], what a sentence presupposes remains unaffected by negation.

The basic insight is that in a sentence like (Ex. 36),

(Ex. 36) John regretted signing the letter.

it is 'presupposed' that John signed the letter, and what is 'posed' is that John regretted that deed. In the sentence's negation, (Ex. 37)

(Ex. 37) John didn't regret signing the letter.

we find the presupposition about John's past deed unaffected, but what we are told is that John failed to experience remorse about such a deed. Analogously, the 'posed' part of our earlier 'pretend' and 'realize' sentences is reversed by negation, but the 'presupposed' part remains unchanged. In both (Ex. 38) and (Ex. 39) we are encouraged to believe that John is not (or thinks he is not) an admiral:

(Ex. 38) John pretended to be an admiral.
(Ex. 39) John didn't pretend to be an admiral.

and in both (Ex. 40) and (Ex. 41), we are left with the impression that 'you' are important.

(Ex. 40) John realizes who you are.
(Ex. 41) John doesn't realize who you are.

The presupposition we sensed in the affirmative sentences remain uncontested in their negative counterparts. (But see below).

The aspect of such interpretations which formal semanticists found unattractive is the need to acknowledge the existence of utterances which are meaninful, which have the form of statements, but which could not be said to have truth values. Since proposals favoring presuppositions appeared to be the only challenge to the workability of two-valued logic for linguistic semantics, the possibility of getting rid of, or refusing to acknowledge, this notion has proved attractive to a number of T-semanticists. The presupposition eliminating view is one which regards the two propositions associated with sentences that otherwise would be thought of as separated between the 'posed' part and the 'presupposed' part as representing, instead, a relation between the full sentence and its alleged presupposition as one of 'entailment' rather than something as mysterious and cumbersome as presupposition.

In order to get rid of the notion of presuppositions, of course, we have to reconsider the observations just made about the *regret-, pretend-* and *realize-*

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[26] Some presupposition-bearing structures have scalar interpretations, in the sense of Horn [1972], and for that reason have only frame-internal negation. Accordingly, grammatical negation does not have these structures *in its scope* and the 'negation test' has no role in their interpretation. (Here I have in mind structures with *only, even,* etc.).

denying sentences above. What shall we say about such sentences in the situation in which the 'presupposed' proposition is false? The presuppositionist would have us say that the sentence is simply unusable (put differently, that it *lacks a truth value*), while the anti-presuppositionist would have to say that it is *true*, since it correctly denies something which is not true.

Let us compare four situations of presupposition-bearing sentences, confronting

— (I) positive sentences («He regrets joining the church»)

and

— (II) negative sentences («He doesn't regret joining the church»)

with situations in which what such sentences presuppose are

— (A) true (he joined the church)

or

— (B) false (he didn't join the church)

A positive presupposition-bearing sentence is true if both constituent propositions are true (case IA) and false if the 'posed part' is false, the 'presupposed part' being true (case IIA). If the presupposed part is false, the affirmative sentence, of course, *cannot be said to be true* (case IB). (Both presupposition theories and entailment theories agree that the affirmative sentence 'necessitates' [Boer & Lycan 1976] the second factor.) These judgments so far given a willingness to read «cannot be said to be true» as «is false» in the case of IB, match what would be expected if the relations between the sentence and its allowed inferences were to be accounted for in terms of entailment.

The critical question is what we are to say for the negative sentence in which the presupposed part is false (case IIB)? Here we have a problem. The entailment theory semanticist would have to say that the denial sentence is true, the presuppositionist would have to say that it somehow doesn't admit a truth valuation at all.

Staying with our examples, the utterances we need to be able to make judgments about are *John didn't regret signing the letter* under the condition that John did not in fact sign the letter, *John didn't pretend to be an admiral* under the condition that John was in fact an admiral (and knew that he was an admiral), and *John doesn't realize who you are* under the condition that the speaker believes your identity is of no conceivable interest to John.

There are two properties of our bizarre IIB utterances which need explaining within a proper semantic theory.

(1) They are odd, in the sense that they occur in normal conversation only under a fairly special set of pragmatic circumstances

but in those circumstances

(2) They nevertheless *can* be used to communicate something, namely what is communicated in situations of what I have called cross-frame negation.

The entailment theory semanticist finds part (2) easy to explain by saying that the sentences are simply true, and have exactly the interpretation which should be given to them. They are negations of sentences which are not true. Such a theoretician would have to use an *auxiliary* theory, a theory of pragma-

250

tics (which incorporated a Gricean conversational cooperation principle), for explaining the intuition that there is something bizarre about the sentence, that it isn't a normal or cooperative way of saying what it says. In normal dialogue, with speakers being cooperatively informative, one doesn't bother to deny that something is the case if it can be taken for granted that something it entails is false.

Thus, by eliminating the troublesome notion of presupposition and by maintaining a two-valued logic, the T-semantic theory needed for natural language is kept well-behaved, through the services of a theory of pragmatics, a theory that we know is going to be needed in a theory of language anyway.

The presuppositionist, by contrast, argues that it is part (1) which is to be explained by 'normal' semantic principles (the utterance is bizarre because what it presupposes is not true), and that part (2) is what requires something special. In the presuppositionist's case, the special principle is cross-frame negation. When I say (Ex. 42) meaningfully,

(Ex. 42) John didn't regret signing the letter.

having in mind that the reason he had no such regrets is that he in fact did not sign the letter [27], I am making a metalinguistic comment on the inappropriateness, for framing the situation at hand, of the lexical item 'regret'. This interpretation is supported, I believe, by the sense we have that (1) a proper context for this utterance is one in which the question of John's regrets about the signing of the letter has come up (through the interlocutor's having asked a question about it, for example), (2) the sentence must be prosodically rendered in a way which gives special salience to the word 'regret', and (3) the conversation can hardly stop at this point, since a frame-rejecting utterance ought to be followed by an utterance that fits the situation more appropriately [28].

A frame semantic view of the kinds of presuppositions we associate with words like *regret* and *pretend* is that they derive from bringing to bear in the text's interpretation, knowledge about the frames which make up a part of the interpretations of these words. The word *regret* has as its *assignment* the job of being used in talk about how people feel about already accomplished events. The frame with which it is associated is a historical frame, or scenario, in

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[27] In an earlier run-through of this argument, I had John *writing* rather than *signing* the letter. I am indebted to Ruth Kempson for pointing out to me that in the former case the combination of using an object-creating verb like *write* with the definite article on *letter independently* created the 'presupposition' in question.

[28] Paul Kay (personal communication) and Larry Horn [1984] have suggested a broader sort of negative speech act than what I here refer to as cross-frame negation, namely metalinguistic negation. In metalinguistic negation a second speaker corrects what a first speaker has said even at the level of pronunciation or grammatical form. («That's not an interesting *phenomena*, though of course it might be an interesting *phenomenon*»). The suggestion came too late to permit reconsideration of my own formulations in these pages. It seems clear (i) that one of the reasons one might have for performing a metalinguistic negation is to suggest that the framing of a situation in the previous speaker's utterance was incorrect, and (ii) that the concept of framing is general enough to consider conditions of speech act fit.

which, antecedent to talk about regretting, is a situation in which it is recognized that something has been done or some state of affairs exists. The word *pretend* is *in the business of* allowing us to talk about people acting or thinking in a way which contradicts reality. On this interpretation, then, *denials* of the presupposition-creating verbs deny what is being posed, not what is being presupposed. In the situation in which it is *known* that the presupposition is false, the negative sentence can be used to deny the applicability of the frame to the situation at hand.

Epilog

A U-semantic theory equipped with interpretive frames can, I believe, provide a natural program for examining lexical meaning, for determining and displaying the semantic import of grammatical constructions, and for making sense of the process of text understanding, and all of this in a way which supports intuitively satisfying accounts of truth and presupposition. Should it be necessary to draw a boundary between aspects of language understanding which belong peculiarly to the description of *language* and those that properly belong to the description of the activities and reasoning in which language users are engaged while producing and understanding linguistic texts, such a boundary would be drawn in terms of conventionality – what one knows by virtue of being a speaker of the language – rather than judgments of relative truth. Yet, while recognizing that a set of 'purely linguistic' elements can be discerned within a U-semantic description, we do not need to draw back from the development of the fuller picture. U-semantics sees the linguistic competence of language users as working together with other sorts of knowledge and skills; it seeks an understanding of the entire process. Within U-semantics, sentences concerning which judgments of truth are possible comprise a proper subset of those for which understandings exist, and those understandings are prerequisite to the truth judgments.

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LEXICAL, CONCEPTUAL, AND ENCYCLOPEDIC MEANING

Two types of representation of the meaning of lexical items may be recognized. One is the predicational sort, identified with the semantic representation of sentences, such as may be expressed in the form of the predicate calculus, semantic case systems, or thematic relations (cf. respectively, Lakoff [1970], Fillmore [1968], [1970]; Gruber [1976], [1982]; Jackendoff [1972], [1976]). The other type is the representation of meaning of lexical items in terms o