

CENTER FOR RESEARCH IN LANGUAGE

January 1988

Vol. 2, No. 3

The monthly newsletter of the Center for Research in Language, University of California, San Diego, La Jolla CA 92093. (619) 534-2536; electronic mail: *crl@amos.ling.ucsd.edu*

CONTENTS

Paper: *Formal Semantics, Pragmatics, and Situated Meaning*
by **Aaron V. Cicourel**, Department of Sociology, UCSD

EDITOR'S NOTE

This newsletter is produced and distributed by the **CENTER FOR RESEARCH IN LANGUAGE**, a research center at the University of California, San Diego, which unites the efforts of researchers in such disciplines as Linguistics, Psychology, Computer Science, Artificial Intelligence, Communication, Sociology, and Philosophy, all of whom share an interest in language. We regularly feature papers related to language and cognition (1 - 10 pages, sent via email) and welcome response from friends and colleagues at UCSD as well as other institutions. Please forward correspondence to

Teenie Matlock, Editor
Center for Research in Language, C-008
University of California, San Diego 92093
Telephone: (619) 534-2536
Email: *crl@amos.ling.ucsd.edu*

SUBSCRIPTION INFORMATION

If you are currently receiving a hardcopy of the newsletter only and have an email address to which the newsletter can be sent, please forward that information to CRL.

Can we send you the email version only to save printing and mailing costs? If you require a hardcopy in addition, please request it and we will be happy to send you one.

If you require the unformatted nroff version of the newsletter, please request it from CRL after you have received the current regular formatted version.

If you know of others who would be interested in receiving the newsletter, please forward the email or postal mailing address to CRL. Thank you.

BACK ISSUES

Back issues of this newsletter are available from **CRL** in hard copy as well as soft copy form. Papers featured in previous issues include the following:

The Cognitive Perspective

Ronald W. Langacker

Department of Linguistics, UCSD

vol. 1, no. 3, February 1987

Toward Connectionist Semantics

Garrison W. Cottrell

Institute for Cognitive Science, UCSD

vol. 1, no. 4, May 1987

Dimensions of Ambiguity

Peter Norvig

Computer Science, UC Berkeley

vol. 1, no. 6, July 1987

Where is Chomsky's Bottleneck?

S.-Y. Kuroda

Department of Linguistics, UCSD

vol. 1, no. 7, September 1987

(2nd printing of paper in no. 5, vol. 1)

Transitivity and the Lexicon

Sally Rice

Department of Linguistics, UCSD

vol. 2, no. 2, December 1987

RECENT DISSERTATIONS

Sally Rice

Department of Linguistics, UCSD

Title: *Towards a Cognitive Model of Transitivity*

Recent Colloquia: William Marslen-Wilson (APU-MRC/Cambridge) presented a talk on 1/7 entitled *Sequential processes in the recognition of spoken words*.

Formal Semantics, Pragmatics, and Situated Meaning***Aaron V. Cicourel****Department of Sociology, U.C.S.D.***Draft - November, 1987; Not for publication nor quotation**Introduction*

Recent work in linguistics seeks to link concepts derived from an autonomous theory of meaning (compositional semantics) to notions like intuition, psychological realities or mental models, and the speaker-listener's everyday experiences. Compositional semantics can be viewed as the product of a collective memory that represents normatively abstracted experiences with imagined and actual language. A major focus of the paper is to contrast ethnographically situated on-line discourse in sociolinguistics with the notion of an autonomous-like compositional semantics as an idealized yet simultaneously functional knowledge resource. The idealized aspects of formal semantics derive from a self-conscious decomposition of lexical, sentential/clausal meaning that permits formal scrutiny of the compositional properties of utterances. An ethnographically oriented sociolinguistic basis for compositional semantics relies on the intuitive reconstruction and practical use of this idealized knowledge resource in locally instantiated and managed daily life situations as guided and constrained by resource-limited conditions of information processing. Notions like background or procedural knowledge must be viewed as empirically contingent resources by speakers, listeners, and research analysts when compositional properties of utterances or discourse are used and/or assigned meaning. In this paper, I seek to clarify the linguist's necessary use of intuitive sociocultural folk models while engaged in formal semantic analysis. The folk models instantiate the linguist's tacit ethnographic knowledge as part of the analysis of individual utterances.

Three linguistic problems motivate the present paper. First, how do we assess the relevance of a theory of speech acts that examines only half of what takes place in discourse by using single utterances? Second, under what theoretical and methodological conditions do linguists justify decisions about evidence that force them to embrace an "archeological linguistic" perspective which formally excludes data that are contingent on the circumstances of language use and the constraints of limited capacity processing? It would be difficult to imagine archeologists confining themselves to a cave filled with artifacts if they also have access to natives talking about and producing the same artifacts outside of the cave. Finally, as consumers of formalisms, or at least of a formal notation system, sociolinguists need to know something about the consequences of adopting some version of available formal linguistic theories.

Formal studies of semantics in western speech areas are invariably produced by native speaking linguists or linguists familiar with the language. Linguists using French, German, Polish, or Russian examples do not record native informants in their local habitats in the sense of cross-linguistic acquisition or anthropological linguistic research with exotic languages. Nor are these formal studies likely to survey representative samples of native informants in everyday settings in order to explore the social distribution of lexical knowledge in highly stratified societies.

Formal semantics presupposes standardized meanings that are assumed to be accessible intuitively or directly, but whose clarification need not go beyond normative descriptions of hypothetical environments. There is, however, a necessary reliance on the linguist's and informant's normative and intuitive knowledge and experiences of sociocultural conditions and language structure and use. The linguist's expertise with language structure and use, therefore, depends heavily on a mixture of dictionary definitions and tacit native (or native informant) understanding of hypothetical examples of language use. The pragmatics of language use in mundane settings and the way new lexical items or frozen expressions emerge and are negotiated in emergent, locally managed interaction are not treated as problems in traditional theories of compositional semantics.

A few lexical items often used in formal semantics will be the point of departure for exploring sociocultural conditions that can alter the normative meanings that students of compositional semantics address with logical categories and rules of inference. The idea is to review aspects of the standardized normative meanings that enable linguists to assume that their study of lexical items, phrases, and sentence-like utterances contain elements of meaning that possess a kind of autonomous status in the structure of a given language.

*Delivered at the 1987 International Pragmatics Conference held at Antwerp, Belgium, 17-22 August 1987. I am grateful to Gilles Fauconnier, Edwin Hutchins, Yuki Kuroda, and George Lakoff for their helpful critical remarks and suggestions on earlier drafts of this paper.

Tacit or explicit awareness of an idealized compositional semantics is analogous to speaker-listeners' normative knowledge of abstract notions of civil rights, status and role expectations that are associated with institutional, organizational, and interpersonal relations in daily life. In the pages that follow, I discuss progressively less formal approaches to semantics by reference to notions like hyponymy, mental spaces or schemata, and psychological realities. The use of these notions calls attention to culturally constituted discourse strategies that are always presupposed in work on formal semantics and recent attempts to link semantics to cognitive processing issues.

Some aspects of hyponymy

In unpublished lecture notes on hyponymy and semantic opposition written in 1982 and revised in 1985, S-Y. Kuroda makes several brief but useful remarks on the role of intuition and psychological realities when linguists attempt to create appropriate definitions in formal semantics. I will use some of Kuroda's suggestions as a point of departure to explore semantic issues associated with intuition and psychological realities by reexamining the normative and practiced aspects of culture presupposed in the notion of hyponymy.

Borrowing from Kuroda, the notion of *hyponymy* can be defined as the relation that holds between a specific or subordinate and general or superordinate concept. For example:

Def. 1 - If a concept *c* contains another, *C*, *c* can be said to be a hyponym of *C*.

If "boy" contains the concept expressed by "male," then "boy" is a hyponym of "male." "Girl" is not a hyponym of "male," but is a hyponym of "female."

If " " denotes words and the brackets [] denotes concepts, then "boy" is a "symbol" that denotes the "concept" expressed by it. If ["boy"] denotes this concept, we could eliminate the " " and simply write [boy].

In more general terms, [] can be used to represent concepts not easily expressible by an English word. Here are three examples.

Ex. 1. [male] is not a hyponym of [human], nor is [female] because nonhuman animals can be male or female. Both [cat] and [dog] contain [animal] and are both hyponyms of [animal].

If an "animal" is viewed as a four-footed "beast", then [human] is not a hyponym of [animal]; but if [animal] is any member of the animal kingdom as contrasted with "plant," then [human] is a hyponym of [animal].

Ex. 2. [father] and [mother] are hyponyms of [parent], and [brother] and [sister] are hyponyms of [sibling].

Ex. 3. Kuroda uses the terms "boy" and "man" and "girl" and "woman" to suggest a common aspect of meaning between "boy" and "girl" that is lacking in "man" and "woman," yet this common aspect of meaning is not captured entirely by "child," "young," "immature," etc. The term [JUVENILE] seems more adequate. Hence, [boy] and [girl] are hyponyms of [JUVENILE], while [man] and [woman] are not.

All of the terms used thus far to illustrate the notion of hyponymy presume unstated aspects of a common culture and an unequivocal meaning for each term. The terms chosen to illustrate formal semantic relationships are seldom if ever problematic to writer and reader. If we are to link formal semantics to the pragmatics of language use, normative understandings of lexical items often do not suffice. Pragmatic aspects of semantic relationships presume perceptual and interaction conditions associated with prior experiences or the activation of such conditions as part of the sociocultural knowledge base that is constitutive of the conceptual organization of semantic memory.

When students of language engage in field research in western cultures, they use informants to make judgments on how language use in local settings influences and is influenced by the types of participants present, their relationship to each other, their perception and assessment of each other's activities, and the kind of social competence each attributes to the other(s). The standardized normative meanings assumed to be available may prove to be inaccessible to some participants and/or perceived as inappropriate for locally defined social interaction. The perception of local and complex status and role relationships can consciously and implicitly affect how the speech event unfolds, its content, and any consequences that may follow.

The concept [JUVENILE] is not easy to define because the notions of "child," "young," "immature," etc., are not readily specifiable vis-a-vis everyday much less academic use in a compositional semantics sense. A few minor complications can emerge if we try to specify a "child's" age. For example, should we begin at age 2? How far should we continue above and below the age of two for the concept "child" to cover what we hope will be its normative features? What should we say about the upper end? Should we stop at age 10, 11, or 12? Should we reserve the age of 13 for something we can

normatively call "adolescence?"

A [JUVENILE] can be someone who is 13-18 years of age for legal purposes, but as empirical research has shown, things can become ambiguous if a person is 15 years of age and is charged with a serious felony such as murder. A person aged 13 or older who is accused of committing a serious felony poses difficulties for legal authorities because the judgments that have to be made require semantic constructions and interpretations of such folk notions as "community reaction," past offenses, school history, the person's physical appearance, their "demeanor," how serious the adult authorities deem the infraction to be, how "remorseful" the accused appears to adult authorities, the family's community influence, the kind of legal representation the family can afford, and the way the case is presented in court. All of these latter conditions can conceivably apply to "older children," ages 8 or 9 through 12.

The definitions of hyponymy employed by Kuroda rely on a formal use of common sense terms that help us understand intuitive aspects of compositional semantics. The linguist creates formal knowledge structures by an abstraction process in which her or his intuitive knowledge and sociocultural experiences in formal and local situations become implicit resources for perceiving lexical items as possessing standard meanings that can be decomposed using a consistent notation system.

Another example can help to illustrate some of the contingencies of meaning construction and use. Kuroda notes that the concept of leg may be linked to the concept of "walking" or that walking contains the concept of "leg" because of the locomotion involved when we refer to the use of leg. But this view is rejected because "walking" is said to contain the concept of "moving," but not the concept of "leg."

Ex. 4. [walk] contains the concept of moving; it is a hyponym of [move].

In Ex. 4, the formal term "hyponym" is now associated with what appears to be a more self-evident expression, "contain." The term "contain" can help us to understand the idea of "walk." The general point is that, with the help of examples, we assume that we understand what is meant by "contain" in this context. We must rely on our intuitive understanding of ordinary words like "contain" in order to construct a semantic theory based on intuition and psychological realities. A parallel problem exists when the linguist uses intuitive sociocultural knowledge to parse or segment textual and discourse materials by reference to rules and linguistic structures. These activities do not include a self-conscious attempt on the part of the analyst to address the interaction of intuitive and compositional knowledge employed in constructing a formal analysis. In the present context, we seek to clarify the intuition of the linguist about the sociocultural folk models that motivate the analysis produced. The folk models instantiate the linguist's ethnographic knowledge as part of the analysis of individual utterances.

It seems normatively acceptable to associate walking with moving, and not with leg (one can walk on their hands). An earlier compositional view such as generative semantics could allow for the idea that the term "walk" can imply a substructure such as moving by the use of one's legs and feet.

What is of importance cognitively is the extent to which a reference to "walking" activates mental images pertaining to the movement of legs and feet. The notion of spreading schema activation (McClelland and Rumelhart, 1981) suggests that lexical items trigger conceptual and empirical elements not explicitly specified but presumably implied by the linguist's reference to intuition. If linguists explicitly acknowledge the necessity of integrating intuitive understanding about psychological reality and the formal conceptual clarification of terms like "walking," "moving," and "leg," then sociocultural notions are presupposed and should be clarified in order to understand the research analyst's reasoning strategies and tacit and explicit use of cultural knowledge. A formal strategy of analysis enables the analyst to build normative, objective structures by using her or his intuitive knowledge. The reader is unable, however, to examine the claim that objective structures exist and link them to the analyst's taken for granted native intuition. An abstract compositional strategy can also obscure the empirical study of the processes by which humans construct and attribute meaning to language structures and use.

The union of two concepts can be clarified by recalling that a first concept is a hyponym of a second concept if the first is a more specific and the second is a more general concept and if they are of the same semantic type. Providing for the general condition of only comparing two things of the same type, however, is not always clear. For example, the three concepts of [yellow butterfly], [yellow], and [butterfly], notes Kuroda, could be viewed as being of the same semantic type, where "yellow butterfly" and "butterfly" are nouns, yet "yellow" is an adjective and can be used as a color name or noun, though not as a noun in reference to an individual entity. On the other hand, the term "male" can also be an adjective ("male banker") and a noun, as in "a male."

Parts of speech can guide the way decisions are made about what concepts are of the same semantic type, but are not always helpful in creating significant semantic generalizations, notes Kuroda. The key to semantic types seems to be the

concepts expressed by typical common nouns and adjectives said to be attributes which can be predicated of individual entities. So the idea of being able to say of "butterfly" that it can truthfully or falsely be predicated of an entity, that is, attributing a certain property to it, is the heart of the semantic type notion. Hyponymy, therefore, is usually associated with a relation that is said to hold among particular attributive predicates.

The view of hyponymy presented above frames the notions of "contain" and "concept" as primitive terms in a formal sense that can be part of an axiomatic system. A more informal linguistic point of view sees hyponymy as a psychological theory about the psychological reality of a particular semantic relation that needs to be explained. The terms "concept" and "contain" are now used by reference to their assumed standard meaning. The psychological view can be seen as a "model" or "standard" interpretation of the formal theory of hyponymy. Further, within a formal perspective, statements that are based on the theory of hyponymy could be or are taken to act like axioms that often become empirical claims about the psychological reality of hyponymy.

In the preceding pages, I have outlined common ground and theoretical differences within linguistics by using the notion of hyponymy as a convenient topic for hinting at the need for a broader conceptual framework for the study of semantics. My goal has been to clarify a number of related theoretical and methodological issues without endorsing existing formal approaches to semantics. To be psychologically relevant, hyponymy presumes knowledge about the researcher's and/or the native speaker-listener's psychological reality. When the researcher also views herself as a native speaker-listener, the empirical aspects of inquiry become filtered because of the interaction between the linguist's expertise and use of context-free knowledge, and the linguist's native intuition and ability to generate and assess a variety of lexical items and utterances, including their intended use in hypothetical contexts. When the "native" speaker-hearer is a lay member of a group, or there are several members and several groups, as well as different settings, the empirical status of "common understanding" or the "standard meaning" of terms can become problematic.

The concern with meaning in formal linguistic semantics favors a consistent notation system, and assumes a correspondence with an intuitive (native speaker-listener's) understanding of the limited notion of natural language usage as found in the single utterances used for explicating semantic theory. The utterances used as data are always produced as part of hypothetical circumstances. If the native speaker-listener's understanding of utterances that are produced in these hypothetical circumstances are different from the understandings that arise when utterances are embedded in the larger organizational conditions of everyday language use, then the judgments that the linguist is looking at are not what he is taking them to be. The utterances become the product of unusual and unexamined hypothetical circumstances.

In the above examples, a standardized, normative sense of each term is assumed to be available to the reader. The emphasis is on the logical relations among terms presumed to be well-defined. The intuitive and psychological realities of the lexical items are dependent on the researcher's hypothetically defined world, a world where there are few surprises and virtually free of empirical contingencies. The reader is assumed to be able to recognize the lexical items used as self-evident rather than an interaction between everyday cognition or reasoning and prior and local cultural experiences. Intuitive knowledge is employed as an unexamined resource for constructing a compositional, declarative knowledge base, but the processes of construction are ignored.

As long as the concepts employed by the linguist appear to have face validity vis-a-vis a normative view of compositional semantics, it is clearly possible to assume uniform, standard meanings exist and to employ a logical format that is in correspondence with the structural properties of target utterances. Logical forms help us clarify many aspects of human intuition and psychological realities but they lack a grounding in contingencies that invariably surround information processing and environmental constraints in the construction of meaning and language use in daily life settings. I want to link these intuitive understandings and hypothetical circumstances to speech events that are empirically emergent, locally managed and larger organizational conditions of everyday, situated language use.

Categories and cognitive models

Gilles Fauconnier's (1985) notion of mental spaces is a useful modification of semantic theory because of its close affinity with cognitive issues associated with representational and comprehension issues often ignored by traditional semantic views. The idea of mental spaces or mental structures in Fauconnier's work proposes that mental spaces are not part of language or its grammars, and hence do not refer to hidden levels of linguistic representation. Mental spaces help to support meaning but do not constitute nor represent meaning. Such spaces would presumably develop even when we cannot identify a known language as might arise for a deaf child in a hearing home who has not been exposed to sign language.

Mental spaces are knowledge structures in memory, but such spaces are built up by language. Language not only contributes to the building of relations between mental spaces and between elements within such spaces, but language also creates its own constructions as well as being a source of interpretations about worlds, models, contexts, situations, and the like.

If particular forms and contents of language are linked to specific occasions of use, with particular participants and ecological conditions, then language and the conditions in which its use is embedded become intimately attached to our ability to activate, link, and access distributed elements of knowledge (Rumelhart, Smolensky, McClelland, and Hinton, Vol 2, Chap. 14, 1986).

In his recent book on what categories reveal about the mind, George Lakoff (1987) discusses folk models of categorization and the way ordinary speakers of English employ conflicting theories or cognitive models to use words to refer to things in the world. Paul Kay (1979; 1982) and Lakoff discuss a folk version of Frege's theory of reference.

For Kay, words can fit the world either "loosely" or "strictly" according to Frege's view that the way that words can refer to objects in the world is due to the way words have intentions that can be tied to actual properties of world objects. An example that illustrates the notions of "loosely" and "strictly" speaking by Kay (1982: 3) can be found in the following hypothetical dialogue between an Anthropologist A and Layperson L.

- (1) L: Where did the first human beings live?
 A: Loosely speaking, the first human beings lived in Kenya.

Kay makes the general point that the hedge is probably used to apologize for the lack of "quality" in the Gricean sense of telling the truth, expecting a speaker to say no more than necessary (Quantity), and being brief (Manner). He is concerned with pragmatic hedges that enter folk theories of language like "loosely speaking" and inherent meanings that can fit the world strictly or loosely. Kay views different hedges as simultaneously incorporating world knowledge about language and as part of a speaker's linguistic competence or knowledge of language.

Kay provides the reader with several reasons for the use of the hedge "loosely speaking." This hedge, notes Kay, can reveal incoherent description while doing reference, the use of a coherent but faulty description in an act of reference, saying something the speaker views as containing a false presupposition that allows an unintended interpretation to occur, and producing a sentence that lacks truth or Gricean Quality.

A different folk theory of how words refer to the world is associated with the term 'technically'. Hilary Putnam (and to some extent Saul Kripke) are identified as the proponents of an expert version of a folk theory in which certain people in a society, notes Kay, can be called "experts" because they have the authority to specify what words should designate in some expert domain. The following example is given:

- (2) Technically, that's a rodent (order "Rodentia").

Professional biologists are presumed to be the experts here. In the case of (2), there can be truth conditions that permit a convergence between "technically" and "strictly speaking" but for different reasons. The term "Rodentia" can be traced to scientific biology and a domain of expertise associated with the term "technically." Consider the sentence (Kay, 1982: 8) in (3).

- (3) Technically, street lights are health hazards.

Here the reference to street lights as health hazards can lead to questions about the authority behind the utterance.

Recent work by Fillmore and Kay (Fillmore, 1982) helps to clarify the linguist's use of aspects of natural settings to understand and make predictions about a person's capacity to comprehend written materials and to use this comprehension to solve problems that are assumed to indicate future academic progress as well as general intelligence and level of achievement.

Fillmore and Kay studied children's ability to understand a Grade Three level test of achievement in two California elementary schools. One goal of the study by Fillmore and Kay was the identification of the background knowledge and the

interpreting and integrating skills needed by the students to comprehend the passages and test questions if they are to provide answers expected by the test creators. Subjects were interviewed in order to learn if they possessed the knowledge and skills presupposed in attending the passages and questions making up the test.

Fillmore and Kay found that the texts of the standardized tests examined in their study were seriously flawed and required considerable patience on the part of the reader because the genre of English used contained unnatural aspects of lexical choice, grammatical structuring, and synonym alterations.

The study by Fillmore and Kay examines the possible ways in which the tests become educationally unexamined obstacles to the students and thereby can compromise the goals of the creators and users of them for practical and research purposes. The tests, therefore, can incorporate cognitive and linguistic difficulties that are in conflict with the model's prediction of how understanding is accomplished by the reader.

Fillmore and his colleagues devised a system of annotations that helped them create a corpus which served as selective interview probes and a checklist with which to assess the children's work with the texts and their production of free retellings. Interviews and probes were used to get at a metacognitive level of analysis in order to identify the knowledge and skills employed for understanding the texts. The researchers sought to transform the children's tacit knowledge, and their ability to communicate some of this knowledge reflexively, into a more formal understanding of the knowledge and skills employed by the children.

Fillmore discusses the use of the annotations to indicate how an ideal reader might see connections, create specific expectations, derive inferences, and ask questions that the annotations are designed to represent. This ideal reader is a construction of the researcher who is said to employ principles from compositional semantics, the building of schemata, the detection of plans and goals, and making inferences.

The reading experience requires the child to create and understand a coherent imagery of activities that can be congruent with the language of the text and the "world" suggested therein. The child's personal experiences and imagination are seen as levels of "envisagement." Several levels of "envisagement" are identified in order to pinpoint the kinds of inferences derivable from the text's linguistic material, or the inferences that seem to be based on knowledge the child brings to the text in order to contextualize what is happening within a common framework.

The Fillmore and Kay work goes beyond single sentence semantic analysis and demonstrates the need to expand a narrow, traditional semantic methodology if we are to understand the child's comprehension of written texts during problem solving.

My interest in the pragmatic work of Fauconnier, Fillmore, Kay and Lakoff stems from the clear implication that different cognitive models (the intuition and psychological realities alluded to by Kuroda and noted earlier) are activated by different pragmatic hedges. From the point of view of the speaker, we can say that an emergent comprehension of an environment of objects and social relations is shaped by a constructed instantiation of a cognitive model and the use of pragmatic hedges to express the sense of the understanding and/or intentions of speakers and listeners.

The cognitive view of semantics noted earlier needs to be extended to particular, socially organized settings and locally emergent speech events in which everyday cognition or reasoning interacts with sociocultural experiences to produce and actively reconstruct tacit and normative knowledge about the world. These socially organized settings typically have associated with them certain types of people with overlapping interests, social relationships, and expectations of which participants should be responsive by using domain-specific and generally understood lexical items and utterances. Expert commentary presupposes tacit and declared knowledge of specialized information, normatively shared meanings, and local sociocultural conditions. I will return to this point below in a brief discussion of medical communication and diagnostic reasoning.

Yankee kinship terminology

Responding to a paper by Ward Goodenough (1965) on "Yankee Kinship Terminology: A Problem in Componential Analysis," David M. Schneider (1965) reexamined Goodenough's paper in terms of his own research on American kinship and arrived at a somewhat different point of view. Schneider wanted to compare the same aspect of American culture from the perspective of two approaches. Schneider observed that there was no way to depict the domain of kinsmen in a formal, clear, categorically limited way. For example, while it can be said that all second cousins are kinsmen, he noted that it was not possible to say that all third cousins are kinsmen. If two persons talk about their kinsmen, there will be uncertainty about the names, ages, occupations, and places of residence for each relative as each person calculates how distant each relative is assumed to be. Schneider then introduced the notion of the "Famous Relative" in order to underscore the way a famous

person could be construed as a relative even when the relationship was obscure or distant. The point is that although such a famous relative, when traceable, could be quite distant, closer relatives could be ignored, unknown, or unheard of (Schneider, 1965: p. 290).

The general point made by Schneider is that there are variant rules in the kinship system at the boundary rather than at the core. Modifiers (father-in-law, mother-in-law, daughter-in-law) are applied in a context of variant patterns that result in a transformation of basic terms into derivative sets which appear to be capable of infinite extension. Schneider calls this the "fade-out" principle because of the fuzzy boundary associated with a term like "distant cousin."

Another issue raised by Schneider is what he calls the "principle of unbalanced, dribbling dyads" that is associated with two sets of kinship terms; those that are basic like "father," "mother," "brother," "sister," and those that are derivative like "father-in-law" and "sister-in-law." The latter are compounds of a kinship term and a non-kinship term or a basic term plus a modifier. Dyads like "mother" and "father" and "brother" and "sister" cannot be found in the term "cousin." The general point here is that the use of the term "distant" (as in "distant cousin") refers to "a chain of unbalanced dyads" and these dyads are said to be unbalanced for Schneider because they "dribble" or fade-out (Schneider, 1965; p. 293). The chains of dyads diminish in value and thus fade away. The famous relative, notes Schneider, takes on exaggerated importance and stands out in terms of a fading chain of relatives.

A key aspect of Schneider's paper is that we often assume a close fit between an analytic domain and a semantic domain of a particular culture. The analytic framework is necessary for having a standard and controlled way of approaching a cultural setting, but it must then be modified in light of the way eliciting techniques are employed. My concern with the formal use of hyponyms is that the analytic apparatus is informed by reference to the linguist's use of normative data that invariably is derived from an intuitive understanding of the investigator's own culture or a use of secondary sources where little or no attention is paid to eliciting techniques and the way concepts are employed in daily life settings.

The concept of [mother]

Consider one of Lakoff's examples about kinship. The concept of mother can be made problematic because of structural and practiced changes in "family life" in the United States. Lakoff does not examine family circumstances that have been described in empirical research, yet his useful examples call into question traditional semantic views that assume standardized, normative meanings can be assigned unequivocally to lexical items. In keeping with our earlier discussion, under what conditions can we say that [mother] is a hyponym of [parent]?

Lakoff (1987: 74) offers a possible definition of mother from the standard semantic perspective ("A woman who has given birth to a child") and states that the definition is inadequate. He describes several "models" for the term "mother," which are taken in the normal case as coinciding. For example:

- birth model - "a woman who has given birth to a child"
- genetic model - a female who has contributed genetic material
- nurturance model - a female who gives nurturance to a child
- marital model - a wife of a father
- geneological model - the closest female ancestor

The above normative models are part of a "cluster model" for Lakoff. An example of a deviation from this model would be a "stepmother."

Of interest in Lakoff's discussion of "mother," is the existence of several criteria for "real" motherhood. Several, quasi-empirical-like utterances are provided by Lakoff that give the reader a convincing sense of the way the term "mother" can be rendered problematic in everyday discourse as a hyponym of "parent." For example:

- "I was adopted and I don't know who my real mother is"
- "I am not a nurturant person so I don't think I could ever be a real mother to any child"
- "I had a genetic mother who contributed the egg that was planted in the womb of my real mother, who gave birth to me and raised me" (Lakoff, 1987: 75).

Lakoff's examples illustrate the kinds of contingencies that can mitigate or weaken the normative conditions associated with a compositional semantics that avoids routine local discourse or exchanges in daily life settings in which structural elements of a kinship term like "mother" can in practice express problematic conditions.

A key issue for Lakoff is the fact that models for "mother" do not pick out a single individual each time. The net result is a number of compound expressions like "step-mother," "surrogate mother," "adoptive mother," "foster mother," "biological mother," and so on. For Lakoff, models converge in the ideal case and various models for mother are related to the ideal case. But as Lakoff notes, mother is a "cluster model," or a cluster of converging cognitive models for "mother."

To take a more extreme case for the normative view of parent, would a "voluntary father" of a child whose mother is a self-proclaimed lesbian be a hyponym of [parent] when the agreement was that the "father" was not to return to the "mother's" house after the pregnancy was confirmed? The use of terms like "mother" and "father" can become complicated if the "mother" identifies herself as a lesbian (or a "father" identifies himself as homosexual) and seeks welfare assistance for which legal credentials are required, including a statement that claimed the "father" (or "mother") had abandoned the child or was unknown. Is there a compound term for "father" here? The "father" (or "mother") is known, yet his (or her) name may not be used in naming the child and the notion of "father" (or "mother") can be relegated to the status of an unknown sexual partner.

Another interesting challenge to the normative view is a case recently reported in northern California newspapers. A previously married couple obtained a divorce and the mother asked the court not to allow the "father" to visit the child because the "father" had gone through a sex change and had become a "female." The court approved the mother's request.

The normative use of terms like "father," "mother," "brother," "sister," and "cousin," can be contingent on a variety of daily life circumstances in which there can be explicit challenges to a person's qualifications, entitlements, or the right to be called "mother" or "father" or "brother" or "sister" or "cousin." In everyday settings, there can be considerable variation in the extent to which participants of exchanges make use of kinship terms. Such everyday usage tacitly or pointedly challenges someone's right to be called by a normative kinship term. Normative usage, therefore, can be conceptually and empirically contingent on practical and enforced social and personal relationships, physical propinquity, and a variation of the famous relative notion. There are strong reasons to claim that normative usage plays a role, but such usage is seldom sufficient for practical purposes. There are many nontrivial instances where what emerges locally and is enforced in daily life and legal settings can be at variance with normative usage.

Challenges to an idealized compositional semantics can also come from biological offsprings who may decide that a "stepmother" is not a "real" mother despite not knowing the "real" mother. Or, a disgruntled offspring who feels that the "real" father is not fit to be called "father". Normative terms are convenient but they can also be misleading. A reliance on them for understanding the way lexical items emerge in a language and take on different meanings across time and situations can be seriously deficient if we ignore the sociocultural conditions that give rise to and change or reconstruct normative and locally emergent practiced and enforced usage.

A case that creates new complications for the semantic analysis of the concept mother revolves around the notion of "surrogate pregnancy" for a "test-tube" baby. The biological parents' sperm and egg are used to conceive a test-tube baby that is then implanted in another woman to produce a genetic off-spring of both parents. The case can arise when the genetic mother is fertile but possesses a diseased uterus. The woman who gives birth to the child is not the child's biological nor genetic mother and presumably could be required to release the baby at birth to the biological-genetic mother and father. The woman carrying the baby would presumably have to suppress or adapt to any thoughts and feelings about being a "mother" that could result from experiencing the pregnancy and the delivery of the baby. These latter experiences are often considered to be especially important for developing a self-conception of being a "mother" in western culture. The woman who agrees to a surrogate pregnancy is a "mother" in a cultural and physiological sense, and may feel like a "real mother," especially if the pregnancy creates emotionally-charged, difficult, uncomfortable, and pleasant experiences.

Two recent cases of a surrogate mother in South Africa and France (reported to me by Gilles Fauconnier, personal communication) is of interest because of the way they compounds kinship notions. The French case involves a mother being a surrogate mother for her daughter's three test-tube babies ("bebes-eprouvettes"). The French press called the surrogate mother "la premiere grand-mere eprouvette." In this case, the grandmother is also a mother of sorts to her "grandchildren." An understanding of this complicated case presumes more than standard normative notions about the concept of mother.

The concept of [physician]

A final example of complex hyponymy can be found with the term [physician]. In the U.S., the term House Staff (interns, residents, training fellows), and specialist and subspecialist attendings such as physicians who have completed a period of residency and perhaps more training in a particular sub-specialty (neurosurgery, urology, cardiology, or infectious diseases) can all be hyponyms of [physician]. These different types of physicians also represent variations in technical expertise within a family of experts. The pronouncements of these experts can take on different meanings depending on who is the recipient of their utterances, and the listener's knowledge of medical education and the responsibilities and duties of medical personnel within teaching hospitals in the United States.

When a person seeks medical care at a variety of health care delivery settings, the differences between the above categories of physician (intern, residents, training fellows, and different attendings) may not be evident. Legally, all of the above "physicians" may be qualified to attend to aspects of the patient's problems, but in practice the medical care that is likely to be offered will be contingent on the bureaucratic and ethnographic conditions that prevail in the medical setting at the time the patient appears asking for help. Different physical locations can be expected to be organized around the presence of certain types of health care delivery personnel according to the organizational constraints of the medical bureaucracy and the kinds of routinized and improvised activities that might occur.

The rather large number of terms that can be hyponyms for [physician] presupposes highly complicated sociocultural settings and knowledge about the interaction between normative and improvised emergent encounters between patients and health care delivery personnel. When the term "doctor" is used in medical and non-medical settings, there can be considerable variation in what is implied or taken for granted vis-a-vis the particular types of knowledge a researcher attributes to speakers and listeners and their social distribution across and within settings. These knowledge attributions must be viewed as empirical issues.

A brief example from the beginning of an actual initial interview between a Training Fellow (TF) and patient (Cicourel, 1986) can illustrate and clarify empirical aspects of the notion of background knowledge often attributed to native speakers or participants of discourse.

- (1) TF: Ummm, who sent you to arthritis?
- (2) P: Uh, uh, oncology.
- (3) TF: Oncology, (unclear) that's okay, (other voice) now
- (4) let me just get a piece of paper (7 seconds)
- (5) (closing drawers).
- (6) How old are you?
- (7) P: 44..
- (8) TF: Okay (9 seconds) and (do you?) have any problems?
- (9) P: Ooooooh, the whole body.
- (10) TF: Whole body.
- (11) P: Joints, really bad.
- (12) TF: Uhuh, yeah, okay.
- (13) P: And ummm, breakout in these big red spots, (mumbling)
- (14) tops and toes.
- (15) TF: Uhummm
- (16) P: But only when I sit in the hot water, they come out
- (17) quite a bit, my hands get, like this, they stiffen
- (18) up.

The above exchange took place in a rheumatology clinic of a university hospital. The TF introduced herself as "Dr. X." She was wearing a white lab coat. The terms "arthritis" and "oncology" as used by physician and patient presuppose implicit metonymical common understanding. Each assumes or takes for granted that the other is familiar with such metonymic usage to refer to physical locations and medical personnel associated with arthritis and oncology clinics. The terms "oncology" and "arthritis" presuppose a knowledge of social and medical categories that are not clarified in the discourse but such knowledge is necessary for appropriate metonymic communication.

In the above exchange, nothing is said by either participant about the qualifications of the physician, the patient's knowledge of the terms employed, nor the grounds for the patient being sent to "arthritis" by "oncology." The TF did not

reveal to the patient that she was being supervised by a rheumatology attending but simply proceeded with the interview as if she was engaged in normal behavior. Although patients often wonder about the competence of their physicians, they are seldom informed enough to ask much less comprehend appropriate questions and answers. The TF's expertise or lack of it did not appear to be a problematic aspect of the patient's local instantiation of a folk model of medicine.

A number of interpersonal and local organizational constraints impinge on the way physicians explain or justify their proposed and actual activities. For example, the number of patients scheduled for the morning or afternoon, the complexity of the symptoms, and hence the amount of time that will be available for each history and physical examination are conditions the patient is not likely to know. The initial part of the interview produced a number of problems vis-a-vis the interpretation of the patient's symptoms and the lack of adequate probes on the part of the TF in order to clarify the reference to "Joints, really bad," "big red spots," and "hands get, like this, they stiffen up." The complaints about the joints, red spots, and hands that stiffen are of immediate possible significance for a rheumatologist. What is of interest linguistically are the many deictic and anaphoric functions and referents like "tops and toes" that are taken for granted by the physician and patient. Telling the reader that the participants of the exchange share a common knowledge base and language is not very informative in the present case unless we can also show that the ambiguities that emerge in the discourse create problems that are often ignored in everyday communication. Ambiguous deictic or anaphoric referents in everyday speech events are routine and apparently essential devices for sustaining what otherwise could turn into a tedious and boring exchange in which every unclear term would have to be clarified. The use of indexicals in everyday speech events appears to be necessary for creating and attributing coherency to the event as a believable event despite violations of idealized Gricean maxims.

The patient's use of terms like "whole body," "Joints, really bad," "these big red spots", "tops and toes," "they come out," "my hands get, like this, they stiffen up," is common in medical settings and all discourse. The TF responded in ways that are characteristic of daily life speech events in which much is taken for granted and where elements of polite discourse prevail that are locally managed. From the perspective of a nonmedical observer (the present writer) and reader of this paper, the patient's remarks appear as intelligible or meaningful. From the standpoint of everyday discourse, there is no reason for participants to question the utterances produced. In legal and medical practice, scientific research, and a range of economic and political activities, the use of indexicals can lead to requests for clarification and confrontation. In the present case, the attending physician, after examining the transcript of the interview between the TF and patient and listening to the audio tape, stated that the TF should have pursued the patient's remarks with careful probes about joint pain, the location of the pain, noting any tenderness, disfiguring, and swollenness in each area mentioned. Similar probes should have been invoked for the reference to red spots and the hands. In addition, the attending physician noted that the patient's symptoms were not consistent with what is formally known about arthritic patients.

The patient was not told that after the interview the TF would consult with the attending in a separate room and then the two of them would visit the patient again. Nor would the patient be told that the TF's expertise would be subjected to scrutiny during the TF-attending discussion of the case in the other room. The patient would also remain uninformed of the fact that both the TF and the attending misdiagnosed the medical problem but for quite different reasons. The patient is also unlikely to know that the TF's expertise was subjected to further scrutiny after the attending accompanied the TF for their joint visit to the clinic examining room. The TF's return to the examining room after the second consultation with the attending makes it appear that the TF is the expert in charge of the patient's care for she will prescribe medications deemed necessary, laboratory test or x-rays needed, and indicate if and when the patient is to return for a subsequent visit.

When the brief excerpt from a medical interview between a training fellow in rheumatology and a patient in a hospital clinic is compared to the semantic analysis described earlier in the paper, a number of contrasts appear. In order to understand what appears to be routine talk between a physician and patient, a considerable amount of background information must be presented. Normally such background information is imagined by the research analyst by her or his use of personal knowledge of the world. In some cases, the background knowledge has been abstracted by someone engaged in field research. In the medical case described herein, the background knowledge attributed to the physician by the patient is taken for granted or not made problematic. The TF's training and clinical experience is not known to the patient. The TF's talk and the inferences she made were evaluated by the attending physician, and some kind of assessment is a normal part of the institutional setting within which the exchange occurred. Many lexical items were used in an ambiguous or misleading manner, but such language use is normally not scrutinized by the attending physician. The assessment made by the attending physician usually includes a contrast between the account given to her or him by the resident or training fellow and her or his own independent examination of the patient.

Within a theory of compositional semantics, no attempt is made to examine differential background knowledge that speakers and listeners bring to their comprehension of utterances. Cognitive grammar approaches to language competence and performance address background knowledge and can also specify ethnographic conditions that appear to be linked to language use and comprehension, and the participants' folk or mental models that seem to be relevant. In the case of the work on the ideal reader by Fillmore and Kay, they examine an informant's linguistic performance during a comprehension task. In this paper, I have also added a number of additional contingencies that normally surround language use during decision making and the inherent comprehension that must prevail. For example, institutional conditions that affect the way people are processed organizationally, the asymmetry that exists between the physician and patient vis-a-vis their knowledge of medicine, and the asymmetry that can exist between physician as novice in a speciality or subspecialty and across such specialties. Finally, there is the potential during speech events for participants to negotiate lexical and more complex levels of meaning. Our discussion can be pursued further by examining an exchange between the two physicians when they discussed the case. The exchange began as follows:

- (1) TF: Ok, next is Elena Louis, (background voices
- (2) anyway, she's 44 years of age and sent here
- (3) from (the?) oncology group.
- (4) So the past two years she has had episodes
- (5) initially of erythema followed by swelling
- (6) involving the second and third metacarpal
- (7) and PIP joints of both hands, alternating,
- (8) one time this hand, one time this hand.
- (9) She's also had arthritis of her ankles,
- (10) which includes redness on a lateral border
- (11) of the lateral malleolus followed by
- (12) swelling.

Having already informed the reader about the TF and her limitations as a novice in the area of rheumatological diseases, the above passage nevertheless appears as a crisp, knowledgeable statement by an expert. There do not appear to be any obvious constraints on the way the TF conveys her findings to the attending here. My observation of the setting suggested a relaxed atmosphere despite the formal mode of presentation that is part of a familiar bureaucratic routine for a teaching hospital. But my ethnographic experiences enables me to say that the TF is being evaluated by the attending and the attending's attempt to sustain an informal exchange leads me to view the setting as somewhat less than relaxed. Other readers of the above narrative by the TF have noted that the contents seem to make sense and were curious about the attending's subsequent negative remarks about the TF's performance. At the end of the TF's long narrative (of which only a fragment is shown here), the attending expressed some concern about the TF's tentative diagnosis of "degenerative joint disease." The subsequent examination by the attending proved inconclusive. The patient was to have returned for x-rays and further tests. The attending's critical remarks were expressed to me after the clinic session was over but their depth did not materialize until after the attending had listened to the original TF-patient interview and the TF-attending exchange partially quoted above.

An examination of the TF's narrative and the attending's response (not shown here) from a compositional semantics perspective should not in principle pose any particular problems. The technical terms, for example, should be amenable to easy comprehension by reference to many texts and medical dictionaries available. The use of the term "oncology group" in line 3, however, continues the earlier metonymical expressions of the patient and TF employed at the outset of the original medical interview. The metonymical phrase "oncology group" is not readily interpreted by reference to a compositional semantics domain. An additional problem for a compositional perspective can be found in line (8) where the TF states that the redness and swelling (line 5) of the lower joints of the fingers (lines 6 and 7) alternate as "one time this hand, one time this hand." Observational knowledge of the local setting is needed to confirm what could be inferred as the TF extended each of her hands to the attending to illustrate her remark. A closer look at line 9 reveals a reference to "arthritis of her ankles." Decomposing this utterance poses a number of difficulties for the research analyst because the textbook and dictionary descriptions and definitions of "arthritis of her ankles" create a number of problems of interpretation. Indeed, the attending challenged the TF's observation here as being diagnostically ambiguous.

The research analyst is obliged to consult more than reference texts and dictionaries in order to comprehend and explain the above narrative to a reader. Knowledge about medical postgraduate education, institutionalized hospital practices, declarative and procedural basic science and clinical knowledge about medicine and rheumatology, local pragmatic language usage, and organizational and interactional practices are presupposed in order to comprehend the TF's narrative.

When the attending and I reviewed the transcript line by line and the tape, the attending was critical of the questions used by the TF and directly challenged the validity of her claims about arthritis of the ankles (line 9) and the entire diagnosis (Cicourel, 1986). Specific lexical items were challenged by the attending. Although the formal meaning of such terms as "erthema," "third metacarpel and PIP joints of both hands," "arthritis of her ankles," "redness on a lateral border of the lateral malleolus," seemed to be self-evident to the attending at the time of the exchange, the attending stated that such terms were not linked to physical conditions such as tenderness and indications of joint malformation. Nor did the TF clarify what for the attending were ambiguities in claiming a tentative diagnosis of degenerative joint disease (osteoarthritis) when there were specific joints on the hand and problems with the ankles that could be associated with rheumatoid arthritis. Many of these details are specified elsewhere (Cicourel, 1986). I have underscored the kinds of background knowledge required to claim that there was a detailed, crisp, and informative narrative delivered by the TF.

The reader and patient would have no way of knowing that the initial interview elicited information that was challenged by the attending, and that the subsequent oral history constructed by the TF for the attending had altered the often ambiguous material obtained during the initial interview with the patient. The attending, of course, was unaware of the original interview material at the time the TF reported her findings about the patient. There were a number of complicated communicational issues that emerged in this case that I cannot pursue here.

Moving away somewhat from the hyponymy notion, I want to underscore the fact that the truth or falsity of the reported speech presented above is difficult to discern, and any direct attempt to pursue a formal semantic analysis of the exchange would be contingent on politeness conditions of House Staff-attending interaction, the attributions of knowledge that are tacitly made during the exchange, and the institutional expectations and constraints that are always present.

A second case involves a medical resident (MR) and a patient suspected of having an infectious disease and possible additional complications associated with the infection. The initial interview by the MR was preceded by an extensive examination of the patient's chart in my presence. The interview began as follows:

- (19) MR: Hi! I'm Dr. X.
(20) P: (?)
(21) MR: That's okay. This is [researcher] (C: Hello.).
(22) I'm the infectious disease doctor.
(23) P: Oh, are you!
(24) MR: I work with Dr. Y, she's my boss.
(25) P: I've heard about you. Okay.
(26) MR: It looks like your doctors are doing a real good
(27) job treating that infection with penicillin.

The above interview took place in a medical ward of a university hospital. The MR and researcher were both wearing white lab coats when the ward was entered and the interview occurred. The nurses and aids on the ward did not question our entrance nor our immediate attention given to the patient.

The various uses of the term "doctor" (lines 19, 22, 24, and 26) by the MR does not tell the patient about his resident status and the fact that his "boss" of line 24 is the infectious disease attending who is responsible for supervising the MR's diagnostic and treatment activities. The reference to "doctors" in line 26 is not explained to the patient. There had been two internal medicine specialists who already interviewed and treated the patient after she was admitted to an intensive care unit and the ward noted above. Thus, at least three different attendings (each with a different subspecialty) had seen the patient and were involved in the treatment of her infection. The "real" expert here, however, was the MR's "boss," the infectious disease attending. From my discussions with the patient, she was unaware of any of the distinctions I have noted above. Her folk theory of medicine as instantiated during our discussions did not seem to include knowledge of the background of the different physicians that had examined and treated her.

A subsequent speech event (Cicourel, 1987a; 1987b) between the pathologist in charge of the microbiology laboratory, the infectious disease attending mentioned earlier, the MR, and a few others who routinely attend the 11:00 A.M. lab rounds should be noted here. The lab rounds are occasions at which each patient's cultures for the past 24 hours are examined for microorganisms as part of the normal business and teaching activities of the microbiology laboratory. The three physicians who discussed the case (described above) at the lab rounds did not identify themselves to the others present (fourth year medical students, pediatric residents, and a pathology resident) as physicians with different kinds of expertise. Nor could medically informed experts know which physician could be said to be the expert in the following conversation unless they were told the titles of each speaker.

- (1) PA: (?) (low voice level) Is this the same one (we?)
- (2) (ya?) did yesterday?
- (3) IDA: No. This is the eye lady.
- (4) PA: (?)
- (5) IDA: Cellulitis
- (6) PA: Oh.
- (7) IDA: With group A strep..in shock
- (8) PA: In shock. (Slight rise in voice level) How about
- (9) that.
- (10) IDA: I[t?] was gonna be more interesting if she didn't
- (11) MR: I'm (?)
- (12) IDA: have bacteremia but (laughing and voice level increasing) now she's had bacteremia so
- (13) MR: There's a little, there's little (voice level increases) problem with that that I'll, will go into more as far

When the reader is told that my observations of the microbiology laboratory revealed that the pathologist was the person with the authority to make final pronouncements about the nature of the organisms discerned from examining the cultures for each patient, the speech event noted in lines 1-13 can be analyzed more carefully vis-a-vis their semantic content. Telling the reader that PA is the pathologist, that IDA is the infectious disease attending, and that MR is the infectious disease medical resident adds information that goes considerably beyond simply reporting a conversation between three "physicians." Unless we know something about the identity of the speakers and the kinds of expertise they are presumed to possess vis-a-vis the patient described in lines 19-27 above, it would be difficult to discuss the terms employed in a coherent manner. Nor would we be able to attribute differential significance to what each "physician" said unless we knew something about the ethnographic and organizational bureaucracy of medical teaching hospitals. Knowing something about the bureaucratic organization, the training that medical students and house staff receive, the kinds of medical specialties that can be found in medical organizations, makes it possible to engage in a semantic analysis of discourse that is impossible on the basis of the folk knowledge of content alone. A model of formal semantics does not tell us what the words in lines 19-27 mean without the context described above.

The two cases of medical discourse described briefly above underscore the role of the speaker or listener's folk model of language, world knowledge, and the role of local knowledge conditions associated with or that emerge in the immediate environment over the course of a speech event. The MR and TF are "physicians" when they are speaking with a patient, but are also novices when speaking with an attending. There are serious legal consequences attached to the novice status of House Staff and the extent to which they can express their expertise. Similar conditions can be described among different specialists or sub-specialties within the practice of medicine.

Conclusion

The tacit reliance on one's native intuition to create formal definitions while seeking to satisfy conditions of perceived psychological reality attributed to speaker-listeners implies that a test of the claims being made (and independent of conventions adopted) can be found in the practices of all researchers. Research analysts are presumed to use their own native intuition in a similar manner to agree to or propose related or different interpretations perhaps based on different theoretical

commitments and sociocultural experiences. The researcher's often tacit ethnographic experiences, therefore, become a central resource in constructing utterances. In the materials presented above from medical settings, the researcher and participants also must know, at least tacitly, about hyponymy, metaphor, and metonymy in order to perform as competent members of the speech events cited. For a social scientist without training or knowledge of linguistics, these concepts (hyponymy, etc.) must be raised to a self-conscious level and learned explicitly as part of her or his research tools.

The notion of psychological reality implied here is consistent with a parallel distributed processing view of schema theory or folk theory of mind. Many researchers working in cognitive science note that persons' capacities for processing information occur under conditions of the spreading activation of the possible significance of lexical items or phrases for comprehending utterances (McClelland and Rumelhart, 1981). A theory of compositional semantics, therefore, becomes a conceptual resource that is an integral part of the way humans are said to structure their perception of aspects of an object or event and provide humans with the basis for constructing the meaning or interpretive sense of their experiences.

Environmental experiences activate our memories while the latter simultaneously guide and are influenced by what is perceived and processed as instantiated schemata. The interactive nature of schemata, according to McClelland and Rumelhart (1981), tends to be automatic as the environment produces new experiences or data. From a sociocultural point of view, however, the researcher and speaker or listener's use of compositional or combinatorial semantics is contingent on the way knowledge is socially distributed in different cultures, within groups, and socially organized activities. Acknowledging the role of instantiated schematized knowledge requires the linguist to recognize changing inputs and the emergent reconstruction of folk models or a changing sense of what is happening in a local setting during language use. But linguistic theory and its use of the notion of psychological reality invariably posit primarily normative, idealized descriptive environments and are further limited by an obscure modeling of individual cognitive processing while ignoring the collective discourse or conversations during which language acquisition and use occurs.

Discussions of hyponymy presuppose a system of classes or categories and rules and/or conventions for various entities. A reference to classes or categories can include the researcher's careful definition of entities that make up a class or category, but seldom includes the native's folk understanding of the psycho-sociocultural reality of a class or category of entities or objects in locally emergent settings. Psycho-sociocultural reality in cognitive science, therefore, is based on the researcher's tacit use of intuitive knowledge in the normative construction or reconstruction and decomposition of semantic domains.

The formal semantic description of hyponymy is a reminder of the way intuitively informed meanings become an integral part of a normative linguistic environment of objects whose compositional elements can be specified. The self-evident use of concepts like [boy], [girl], [male], [parent], and [mother], however, can obscure the role of folk knowledge as reconstructed by informants and researcher within the latter's compositional view of semantics.

We have little idea of lay-persons' distribution of knowledge by sociocultural groups and within and between different bureaucratic organizations. There is little information on the ability of individuals to recognize and compare concepts and lexical items as a function of their perception of and participation in locally emergent discourse and the extent to which participants engage in the kinds of componential decomposition and comprehension attributed to them.

A theory of compositional semantics presupposes considerable familiarity with a language. Prior training or expertise is required to enable students of language to transform their own educated and intuitive knowledge of semantic meaning into a formal or objective format. The utterances used as data, however, invariably lack the ambiguity and negotiated circumstances of daily life use, comprehension, and decision making. Classes and categories are often not only ambiguous in daily life exchanges, but attributions of meaning are also responsive to and embedded in interpersonal and organizational relationships and the constraints of local production.

Science, law and medicine are examples of domains where a compositional semantics is part of a self-conscious effort by the practitioner to cleanse concepts and data of the cognitive limitations of individuals and groups in institutionalized, organizational, and locally managed settings. The intersection of these essential semantic domains with pragmatic language use in actual settings can help clarify the larger conceptual framework in which both formal and practiced and enforced meanings are negotiated.

Two major issues of semantic analysis are the role of presuppositions and background knowledge. These issues can overlap but in general presuppositions are logical entailments that can be inferred or deduced from the semantic facts before us. To say that "John drove through the red light" entails assuming some kind of vehicle (auto, bus, motorcycle, bicycle, carriage) was involved and background knowledge about the meaning of "the red light" as an electronic device for regulating the

flow of traffic. Background knowledge about the existence of streets and intersections and different types of vehicles and the skills that are presupposed in their use can also be presented.

The analysis of single utterances always assumes background knowledge and implies and makes use of some kind of implicit sociocultural theory that motivates or guides the interpretations constructed. Each reference to presupposition or background knowledge assumes a sociocultural world as tacit or normatively idealized states of affairs.

Students of language become "archeological linguists" when they ignore the natural history of the emergence and use of speech events. Formal criteria, and a narrow, compositional view of semantics, can obscure claims about meaning and can become obstacles to an understanding of language perception, comprehension and use.

A researcher's ability to identify presuppositions and her or his capacity to use background knowledge becomes a self-evident resource that motivates the formal analysis of hypothetical utterances. The researcher's knowledge base plays a role here. How do we assess the researcher's claims about the informants' use of presuppositions and background knowledge? Unless we examine these issues, the researcher's identification and use of presuppositions (the investigator's knowledge base) is tacitly assumed to be what the speaker or listener can comprehend and employ in the utterances used for the analysis of meaning. In the present paper, I have used materials from a complex semantic domain to underscore the researcher's limitations and the necessity of a compositional view of meaning that is linked to institutional, organizational and locally managed settings.

REFERENCES

- Cicourel, Aaron V. 1986. "The reproduction of objective knowledge: Common sense reasoning in medical decision making," in G. Bohme and N. Stehr (eds.), *The Knowledge Society*. D. Reidel Publishing Company, pp. 87-122.
- Cicourel, Aaron V. 1987a. "Cognitive and organizational aspects of medical diagnostic reasoning." *Discourse Processes*, 10, 347-367.
- Cicourel, Aaron V. 1987b. "The interpenetration of communicative contexts: Examples from medical encounters," *Social Psychology Quarterly*, 50 (2), 217-226.
- Fauconnier, Gilles. 1985. *Mental Spaces*. Cambridge, Mass.: MIT Press.
- Fillmore, Charles J. 1982. "Ideal readers and real readers," in *Proceedings of the 32nd Georgetown Roundtable on Languages and Linguistics*, D. Tannen (ed.). Washington, D.C.: Georgetown University Press, 248-270.
- Goodenough, Ward. 1965. "Yankee kinship terminology: A problem in componential analysis," *American Anthropologist*, Vol. 67, No. 5, October. (Special publication on Formal Semantic Analysis, edited by E.A. Hammel.)
- Kay, Paul. 1979. *The role of cognitive schemata in word meaning: Hedges revisited*. Ms. 59 pp.
- Kay, Paul. December 1982. *Linguistic Competence and Folk Theories of Language: Two English Hedges*. Berkeley Cognitive Science Report No. 3.
- Lakoff, George. 1987. *Women, Fire, and Dangerous Things: What Categories Reveal About the Mind*. University of Chicago Press.
- McClelland, J.L., and Rumelhart, D.E. 1981. "An interactive activation model of context effects in letter perception: Part 1. An account of basic finding." *Psychological Review*, 1981, 88, pp. 375-407.
- Rumelhart, D.E., et al. 1986. "Schemata and sequential thought processes in PDP models," in J.L. McClelland, D.E. Rumelhart, and the PDP research group, *Parallel Distributed Processing: Explorations in the Microstructures of Cognition Volume 2: Psychological and Biological Models*. Cambridge, Mass.: MIT Press.
- Schneider, D.M. 1965. "American kin terms and terms for kinsmen: A critique of Goodenough's componential analysis of Yankee kinship terminology," *American Anthropologist*, Vol. 67, No. 5. (Special publication on Formal Semantic Analysis, edited by E.A. Hammel.)