Literal Meaning and Psychological Theory*

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This paper evaluates the psychological status of literal meaning. Most linguistic and philosophical theories assume that sentences have well-specified literal meanings which represent the meaning of a sentence independent of context. Recent debate on this issue has centered on whether literal meaning can be equated with context-free meaning, or whether a sentence's literal meaning is determined only given a set of background assumptions. Neither of these positions meet the demands of a psychological theory of language understanding. Sentences do not have well-defined literal meanings, regardless of whether these are determined in light of a set of background assumptions. Moreover, the putative literal meanings of sentences do not contribute in systematic ways toward the understanding of speakers' utterance meanings. These observations suggest that the distinctions between literal and metaphoric meanings, and between semantics and pragmatics, have little psychological validity.

This paper assesses the relation of literal meaning to a psychological theory of natural language understanding. My aim is to further elaborate on my earlier remarks (Gibbs, 1982) on the role of literal meaning in understanding nonliteral discourse, as well as those made by Rumelhart (1979) on problems with the notion of literal meaning. I challenge the *literal meaning hypothesis,* which assumes that sentences have well-defined literal meanings and that computation of the literal meaning is a necessary step on the path to understanding speakers' utterances. Although the philosophical and linguistic proposals regarding this hypothesis are not intended as psychological theories, they have provided much opportunity for researchers to speculate and conduct empirical investigations on the role of literal meaning in language understanding. My goal is not to evaluate these theories of literal meaning on their own grounds. Rather, the attempt here is to argue that the

literal meaning hypothesis does not fit into an adequately constrained, psychologically valid model of human language behavior.

In the first section, I consider some of the recent arguments in philosophy and linguistics over whether literal meaning is context-free meaning and on the importance of literal meaning in understanding nonliteral speech. I then go on in the second part of the paper to argue that all speech acts can not be identified uniquely by their literal forces. I also review some of the psycholinguistic research which suggests that computation of a sentence's literal meaning is not an obligatory process during sentence comprehension. In the third section, I consider two related implications of the literal meaning hypothesis. These concern the principled distinctions between literal and metaphoric meanings, and between semantics and pragmatics. I claim that these distinction have little psychological utility. In my final section, I make some concluding remarks.

I

This first section sketches the traditional and alternative theories of literal meaning. I describe some proposals in philosophy and linguistics as to how literal meaning is used in understanding nonliteral utterances.

Traditional Theories of Literal Meaning

The traditional view about literal meaning stems from Frege's (1892/1966) principle of compositionality. He believed that a large number of sentences of a natural language can be understood by a competent speaker-hearer without knowing who said the sentence, where it was said, when or why. In other words, the interpretation of many sentences is independent of knowledge of extralinguistic context.

Frege's position on the semantics of natural language has led to a number of assumptions about the nature of literal meaning. This traditional view suggests the following. First, all sentences have literal meanings that are entirely determined by the meanings of their component words (or morphemes) and the syntactical rules according to which these elements are combined. Certain sentences may have more than one literal meaning, such as ambiguous sentences. Moreover, the literal meaning of a sentence may be defective or ill-specified, such as with nonsense sentences. In addition, the literal meaning of a sentence should be sharply distinguished from what the speaker means by use of the sentence, since the speaker's utterance may depart from the literal sentence in a variety of ways, as in idioms, indirect speech acts, irony, and metaphor (Searle, 1979a).

The traditional view also suggests that, for sentences in the indicative, the literal meaning of the sentence determines a set of conditions which, if satisfied, will make the sentence a true statement. According to some philosophical accounts (cf. Carnap, 1956; Davidson, 1979; Lewis, 1972), to know the meaning of a sentence is to know its truth conditions. Finally, and significantly, the literal meaning of a sentence is its meaning independent of context.

The traditional view provides a set of assumptions that underlies research in semantics and pragmatics. Although the traditional view about literal meaning is not a theory per se, it does provide a framework in which theories of semantics and pragmatics can be formulated. In linguistics, Katz and Fodor (1963) have presented their semantic theory within a model of generative grammar that embodies parts of this framework. According to Katz and Fodor, semantic competence is what an ideal speaker-hearer would know about the meaning of a sentence without any information about its context. In other words, the meaning of a sentence is its interpretation in a "null context," such as the anonymous letter situation.

In an anonymous letter situation, an ideal speaker-hearer of a language receives an anonymous letter containing just one sentence of that language, with no clue about the motive, circumstance of delivery, or any other information relevant to its understanding in normal discourse. Imagine coming into your office and finding an envelope on the top of your desk. Inside the envelope is a single piece of paper with the sentence *Whales eat plankton*. Katz and Fodor claim that a theory of semantic competence should capture the linguistic knowledge used in understanding this sentence where no other information is available concerning its intended meaning. Their intention was to make a distinction between semantic and pragmatic interpretation by taking the semantic component to represent only those aspects of the meaning of a sentence that an ideal speaker-hearer of the language would know in such a "context-free" situation. This immediately provides a distinction between *literal* or *sentence* meaning and *contextual* or *speaker* meaning, where the former represents a semantic interpretation and the latter a pragmatic interpretation.

Alternative Approaches to Literal Meaning

Much of the research on linguistic meaning has attempted to formulate theories that capture some aspect of an ideal speaker-hearer's semantic competence, similar to Katz and Fodor. Surprisingly, though, literal meaning itself is rarely discussed. Recently, Searle (1979a) has argued against the traditional view of literal meaning. His strategy was to examine sentences that appear to be favorable cases for the view that literal meaning is context-

free, and show that literal meaning can only be determined relative to a set of background assumptions. Consider the sentence *The cat is on the mat*. Searle suggested that the literal meaning of this sentence does not have clear application unless we make some further assumptions; namely, that the cat and mat are not floating freely in outer space, and that gravitational forces exist. It is only through these kinds of background assumptions that we can determine the literal meaning of the sentence.

Searle goes on to state that these assumptions are not specifiable as part of the semantic analysis of the sentence. First, these assumptions are not fixed in number and content. This would make it impossible to know when to stop the process of specification. Second, each assumption tends to imply other assumptions, which themselves must be specified in some way. For these reasons, it is unlikely that the background assumptions can be specified as part of the semantics of the sentence. It might be possible, however, to specify all the assumptions against which speakers understand and apply the literal meanings of sentences. Searle (1979a) does not attempt to answer this question one way or the other. He notes that, although the potential difficulties in specifying the set of background assumptions are great, there is no theoretical reason to suggest that it can not be done. More recently, however, Searle (1983) has argued that it is impossible to specify all of the background assumptions.

Searle (1980) considers new examples. Consider the sentences *Bill cut the grass* and *Sally cut the cake*. Searle claims that the word *cut* has the same semantic content in each sentence, but makes distinct contributions to their respective truth conditions. Thus, the activity of cutting grass is quite different from the activity of cutting cake. These examples suggest to Searle that one cannot hold both that the literal meaning of a sentence is the meaning it has in a null context, and that the meaning of a sentence determines the truth conditions of that sentence.

Although Searle wishes to view literal meaning relative to a set of background assumptions, he explicitly states that this does not invalidate the distinction between the literal sentence meaning and the speaker's utterance meaning. The distinction between literal and metaphoric meaning remains intact, as does the distinction between direct and indirect speech acts. Literal meaning is modified relative to how context plays a role in the comprehension of indirect speech acts, metaphor, irony, etc. According to Searle, there is a need to distinguish the special role of context in which an utterance is stated from the background knowledge that plays a role in the interpretation of literal meaning.

Defense of the Traditional View

In a recent rebuttal to Searle, Katz (1981a) argues that Searle conflates a theory of sentence meaning with a theory of sentence use. He suggests that Searle's speech act theory lacks coherence and should be replaced by at least

two distinct theories, one dealing with the grammatically determined literal meanings of sentence types, and the other dealing with the extra-grammatical information speakers use in combination with their knowledge of the meanings of sentence types to perform speech acts (also see Katz, 1977). Katz, then, wants to make a sharp competence-performance distinction which purifies the study of language of all performance elements.[1]

With these goals, Katz challenges the supposition that sentences such as *The cat is on the mat* undermine the thesis that sentences have compositional meaning independent of context. He does not believe, as Searle claims, that the compositional meaning of a sentence must determine for every context whether or not an utterance of that sentence is literally true or false. Given certain selection restrictions, the sentence *The cat is on the mat* has a literal compositional meaning that can be determined apart from context. Moreover, Katz argues that the semantic content of *cut* (namely the concept of dividing something) in *Bill cut the grass* and *Sally cut the cake* is identical insofar as to what the sentences mean. They do, however, differ in terms of what speakers mean by their literal and serious utterances of the sentences. Katz claims that a belief in absolutely context-free sentence meaning does not deny that background assumptions shape the meanings of *sentence uses* in actual speech. Rather, he only dismisses the idea that such background assumptions are relevant to the *meanings of sentences* in the language. As such, Katz embraces the traditional view of literal meaning as the correct one.

A similar argument against Searle is made by Dascal (1981) in suggesting that Searle demands too much from literal meaning. Although Searle claims that literal meaning is not a sufficient condition for the determination of truth-conditions in all contexts, Dascal believes Searle has failed to demonstrate that literal meaning is not a necessary condition. Dascal argues that Searle incorrectly assumes that the literal meaning of a sentence literally used should completely capture the intended meaning or, as Grice (1957) puts it, the significance of the utterance. The total significance of an utterance, however, depends on many factors, one of which is the literal meaning of the sentence used. Searle's characterization of the role of literal meaning in comprehension, then, is excessive. If literal meaning is only one factor in the determination of a speaker's meaning, then there is no need to relativize literal meaning against any background assumptions. Dascal concludes that the notion of literal meaning should be thought of as context-free.

Literal Meaning and Understanding Speakers' Utterances

Linguistic and philosophical (as well as some AI) accounts of language processing have assumed that an analysis of a sentence's literal meaning is

[1]In more recent writings, Katz (1981b) argues that the grammar of language is not a theory of the ideal speaker-hearer's knowledge of language, but of language itself.

fundamental to understanding a speaker's utterance. Searle (1975, 1979b) has developed a set of principles by which a hearer is able to infer what a speaker means when using metaphor, irony, idioms, and indirect speech acts. Briefly they are that (1) the hearer first computes the literal meaning of the sentence; (2) the hearer decides if the literal meaning is defective, given the context; and (3) if the literal meaning is inappropriate, the hearer is led to seek an alternative meaning which, depending on the principles of conversation and his or her knowledge of speech acts, should lead him or her to the speaker's conveyed meaning.

First, consider the case of indirect speech acts, such as *Can you pass the salt?* (meaning *Pass the salt*). According to Searle, the speaker means what he or she says but also means something more. Thus the literal meaning is part of the speaker's meaning but it does not exhaust his or her intended meaning. A hearer first determines the sentence's literal meaning, given his or her background assumptions, to come up with an interpretation like *Are you able to pass the salt?* This question about the hearer's ability lacks any communicative function, and so the hearer is led to seek another meaning. Since the hearer knows the rules of speech acts, he or she knows that the ability to pass the salt is a preparatory condition of the speech act requesting him or her to do so. Consequently, the hearer is able to infer that the question about his or her ability is likely to be a polite request to actually pass the salt.

Searle's proposal is similar in various respects to others in philosophy and linguistics on how people comprehend indirect requests (cf. Bach & Harnish, 1979; Gordon & Lakoff, 1971; Sadock, 1974).[2] Grice (1975, 1978), for example, suggests that people understand utterances, such as *Have you taken out the garbage?* (meaning *Take out the garbage*), on the basis of the context of the utterance and certain principles from the theory of rational behavior. If the above sentence is taken literally, its utterance can only be a question for information. But in the context of a mother and son standing in a kitchen in front of a full garbage can, this interpretation would lack any communicative function. The son knows that the question would have to be answered in the negative and he knows that his mother knows this too. In this situation, the question seems to be absurd and its utterance by the mother irrational. Nonetheless, the son does not take the mother's utterance to be irrational, because both speaker and hearer operate in conversation under the *cooperative principle*. This principle states that people should make their contribution such as is required, at the stage at which it occurs, by the accepted purpose of the action in which they and their partner are engaged. With this general principle, the son will reinterpret the mother's literal sentence to give the utterance a different meaning by relating it to the

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[2]Searle (1979c) critically evaluates some of these other proposals.

accepted purpose of the conversation. In this way, the son will treat the question as a request for him to take out the garbage.

II

The debate over literal meaning and its use in understanding speech has, in part, attempted to provide some constraints on a theory of linguistic behavior. This does not necessarily indicate that such a theory is psychologically valid, and in this section I present evidence against it. My argument has three parts. First, I discuss one common assumption of the *literal meaning hypothesis* which states that all speech acts are uniquely defined by their literal force. I counter this hypothesis by demonstrating that many sentences which are not nonsensical do not have well-specified literal meanings. Second, I evaluate Searle's distinction between background and context and outline some reasons why this distinction is implausible, particularly in regard to what information is examined first in understanding nonliteral meaning. Finally, I review some psycholinguistic studies that clearly demonstrate the implausiblity of the *literal meaning hypothesis* as a psychological model of language understanding.

Can Speech Acts be Uniquely Defined by Their Literal Force?

Much of the work in speech act theory assumes that the speech act associated with an utterance is uniquely determined by the nature of the sentence uttered (cf. Gazdar, 1981). This premise of the *literal meaning hypothesis* assumes there is an unique illocutionary force (assertive, directive, commissive, effective, verdictive) that can be assigned on the basis of its performative prefix or its sentence type (cf. Levinson, 1981). This scheme assumes a one-to-one correspondence between different illocutionary acts and sentence types.

There are a number of problems with this aspect of the *literal meaning hypothesis* (see Clark, in press; Gazdar, 1981; Levinson, 1981). First, there are more types of illocutionary acts than sentence types. For instance, an assertive is an illocutionary act of expressing a belief (Austin, 1962). A speaker can assert *The sun is shining brightly* to express his or her belief that the sun is shining brightly. The most representative assertive is the assertion, but this illocutionary act also includes diagnoses, predictions, notifications, confessions, denials, retorts, conjectures, and many other such acts (Clark, in press). All of the other types of illocutionary acts include just as many subtypes. However, in English there are only four basic sentence moods—declarative, interrogative, imperative, and exclamatory. Second, many sen-

tence types bear no direct correspondence to illocutionary acts. A request for the salt can be made with a declarative sentence such as *I want the salt*, an interrogative sentence such as *Will you pass the salt?*, or an imperative sentence such as *Please pass the salt*. There is no direct relationship between sentence types and illocutionary acts.

One solution to this problem is to distinguish between direct and indirect illocutionary acts. According to this scheme, an illocutionary act is direct if it is performed by means of the sentence type appropriate to it, and indirect if it is performed by any other means. *Please pass the salt* is direct, since it is performed via an imperative sentence type appropriate only to requests. *Will you pass the salt?* is indirect, since it uses an interrogative sentence type that is appropriate only to questions. Searle (1975) proposes that utterances such as *Can you pass the salt?* and *Would you mind washing the dishes?* retain their literal meanings, even though their illocutionary forces function as requests. Searle admits that the literal meaning, on occasion, may be defective, as when the felicity conditions for the illocutionary act fail to obtain in a given context. Moreover, Gazdar (1981) correctly points out that in many contexts *Can you pass the salt?* will violate every felicity condition relevant to questioning originally proposed by Searle (1969). Nonetheless, Searle still maintains that indirect requests such as these examples retain their literal meanings as part of what the speaker means.

This kind of proposal has been quite popular in linguistics and philosophy (see Bach & Harnish, 1979, for further discussion). There are, however, a number of problems with such a scheme. Levinson (1981) presents examples that counter Searle's claim. For instance, *May I remind you that your account is overdue?* can not have a literal force because reminding is done simply by uttering the sentence without permission being granted. This is contrary to the claim that the literal force of a sentence is always retained regardless of that utterance's intended meaning.

Another problem for this proposal is found in everyday conversation. For example, when merchants were asked over the phone *Would you mind telling me what time you close?* they sometimes responded *Yes, we close at six* (Clark, 1979). Searle would say that the callers' utterance is literally a question as well as a request. His hypothesis would predict that, if the merchants responded on the basis of literal meaning they should have said *No, we close at six.* (see Clark, 1979; Clark & Schunk, 1980; and Gibbs, 1983, for further debate on this issue.). The fact that people usually begin their verbal responses with *Yes* instead of *No* suggests, once again, that the *literal meaning hypothesis* is simply not an accurate account of what goes on in using speech acts. A case can be made, then, that the literal meaning of a sentence can not always be equated, in one form or another, with the illocutionary force of a sentence. As Gazdar (1981) points out, the meanings of speech acts can not be independently characterized without reference to the acts people wish to perform in using them.

This presents speech act theorists with a fundamental dilemma. One can retreat to the original position in which illocutionary force is assigned on the basis of a sentence's literal surface form. In this case, assignment is a relatively simple matter but largely irrelevant to the meaning of many expressions. Alternatively, one must account for speech act force and content that are only tentatively linked to what is said. The meaning of speaker's utterances, then, would have to be determined not via a simple set of conversational rules or postulates, but by a small set of powerful, yet little understood, inference principles that take context into account (cf. Levinson, 1981). It does not seem possible to specify the functions of a speech act solely on the basis of the literal meaning of a sentence.

Part of the reason for the failute of the *literal meaning hypothesis* is that it is very difficult to assign literal meanings to some sentences in the language. Consider *How about the salt?* said by someone requesting the addressee to pass the salt. What is its literal meaning? Most speakers would be hard pressed to say what it is. This sentence does not even have a well-defined literal meaning if considered in a very "literal" context (as when speaker A says to B that they are not sure if all the spices have gone into the soup, and B asks *How about the salt?* as a genuine question about whether salt has been added yet). The exact literal question meaning of this expression is not clear even if we consider the context in which it is said. Considering context, of course, is not what either Searle or Katz have in mind in their separate definitions of literal meaning.

Other indirect requests that are very formulaic also do not appear to have literal meanings. This seems especially true for expressions that are often said with casual pronounciation such as *Get in, whyncha?* and *Sit over here, ya wanna?* Ervin-Tripp (1976) has noted that these are abundant in both children's and adult's speech, and it seems unlikely that listeners first expand these utterances to their full grammatical forms to analyze their literal meanings before going on to figure out their intended interpretations. As such, these formulaic directives do not have literal meanings.

The indirect speech acts I have considered here are not bizarre metaphors whose literal meanings are semantically unacceptable. On the contrary, indirect speech acts are generally thought to have well-defined literal interpretations. Well formed idioms are also viewed as having literal meanings (cf. Chafe, 1968; Fraser, 1970; Weinrich, 1967) that should play some role in their intepretations (Bobrow & Bell, 1973). Yet common expressions such as *Take a leak,* (one can not carry away a leak), *take advantage of,* and literary idioms such as *Trip the light fantastic* (meaning *To dance*) do not have acceptable literal meanings. The mere fact that these idioms exist and are constantly being introduced into the language points out the inadequacy of the *literal meaning hypothesis* as a general account of language use.

There are also a number of other types of expressions for which it is impossible to imagine their literal meanings. Clark (1983) presents examples

of these in his examination of expressions and sentences containing lexical innovations. Consider *George managed to porch the newspaper yesterday.* The word *porch,* though only a noun in the lexicon, is used in this utterance as a verb. Traditional parsers (Kimball, 1973, 1975; Frazier & Fodor, 1978) that depend on an analysis of a sentence's literal meaning would look up *porch* in their lexicons and, finding only the noun entry, would be unable to continue parsing the sentence. The literal meaning of this sentence would be considered anomalous according to these theories, and it is unclear how an interpreter would proceed from there.[1] Of course, most hearers are able to comprehend *George managed to porch the newspaper yesterday,* and to do so necessitates that one consult the speaker's intentions, plus other nonlinguistic information, at the outset. Parsers that *start* with a literal analysis of every sentence are not easily able to handle expressions like these.

Thus far, I have criticized the idea that illocutionary force can be determined by a sentence's literal meaning, and have shown that not all sentences have clearly-defined literal meanings. These observations suggest that determining the literal meaning of a sentence is an inadequate place to start figuring out a speaker's utterance meaning.

Are Background Assumptions Different from Context?

A psychological theory of language understanding must account for the moment-by-moment processes in a listener's comprehension of a speaker's meaning. Consequently, a psychological model is concerned with language use, but it is not simply a theory that takes into account things normally associated with performance theories such as memory limitations, distractions, shifts of attention, interest, error, etc. Rather, it is an attempt to specify exactly what knowledge is used in processing language and to describe how that knowledge is mentally represented. A complete theory of language processing must, then, include an explicit description of memory and its role in the comprehension process. The main difference between Katz and Searle's respective views of literal meaning rests on the role memory plays in determining a sentence's literal meaning.

Searle's (1979a) revised theory of literal meaning makes the distinction between background assumptions and contextual information. Let's assume, for the moment, that determining the literal meaning of a sentence is primary to figuring out its conveyed interpretation. Does the background-

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[1]Two mechanisms that have been proposed to handle these kinds of expressions are lexical rules (Green, 1974; Levi, 1978; Miller, 1978), and the semi-sentence (Katz, 1964). However, Clark (1983) has convincingly shown that neither of these will work, since both require that the meanings of a sentence to be both denumerable and to be definite in number. Neither of these is possible with contextual expressions and other denominal verbs.

context distinction mean that different information is used in determining the literal meaning of a sentence from that used in determining the speaker's meaning? If this is so, how are psychologists to specify which information is used where and how is this different information represented mentally?

Consider how background assumptions and context work in interpreting indirect speech acts. If Searle is correct, people use their background knowledge first to determine a sentence's literal meaning before contextual information is consulted to derive what the speaker means by his use of the utterance. Just how Searle intends to draw the distinction between background and our understanding of context is unclear. The only suggestion he makes is that background assumptions are those that are somehow absurd to miss. When a speaker says, *Give me a hamburger, medium rare, with ketchup and mustard, but hold the relish,* he or she expects the hamburger to be of normal size and not contained in a solid lucite cube. This illustration is not very helpful. Contextual assumptions that contribute to determining the speaker's utterance meaning are often just as absurd to miss. Katz (1981a), for example, shows that it is simply absurd to miss the contextual assumptions that produce the ironic meaning of *That's a fine way to treat your devoted parents, letting them go without food and shelter and laughing at their plight.* Throughout Searle's (1979a) paper, the notions of "context of utterance" and "background assumptions" function interchangebly. As Katz puts it, these "represent a distinction without a difference" (p. 229).[4]

A related problem is that Searle suggests that one kind of knowledge (background) is evaluated before another (context) in understanding a speaker's utterance meaning. Another way of looking at this is to suppose that understanding language is a process of manipulating memory structures. Memory can consist of two parts, a background, such as a long-term memory, and a model of the current context, similar to information stored in working memory. In this kind of system, the information about the context will be highly activated (more so than information in the background which also would be activated above some threshold). What Searle is suggesting is that literal meaning is first determined by *ignoring* the highly activated information, and by consulting only information contained in the background. Once this has been done to construct a literal representation for a sentence, then the context or information in working memory will be used to derive the utterance's nonliteral interpretation, as in the case of metaphor, indirect speect acts, irony, etc.

[4]In his latest book, Searle (1983) describes background as a set of preintentional capacities, practices, and stances which are nonrepresentational. The background provides a set of enabling conditions that make it possible for various forms of representation to take place, such as Intentional states. Searle does not discuss "context" here, nor does he attempt to distinguish between "context" and "background assumptions." He does make a distinction between background and Network, which is the entire set of Intentional states. But, this does not apparently include aspects of "context of utterance."

    This kind of model seems quite unlikely. Given that there is shared
knowledge between speaker and hearer, it seems much more reasonable that
contextual information will guide the activation of background information
for figuring out a speaker's intended meaning. This kind of interactive
model posits that knowledge from various sources is used simultaneously in
comprehension. More specifically, it suggests that understanding can be
accomplished without the construction of a literal meaning, regardless of
whether it is context-free or not.

    My criticism of Searle's distinction between background and context
does not mean that there is no need for seeing how context and knowledge
are used in understanding language. The issue of what constitutes the con-
text for comprehension has indeed been a confusing one, particularly is
psychology, where context is interpreted in different ways by different in-
vestigators. Clark and Carlson (1981) have attempted to remedy this by con-
sidering how different kinds of context are used in language comprehension.
They propose that for a listener to understand a speaker's meaning, he or
she can confine him or herself to a certain limited domain of information,
namely the speaker and his or her listener's common ground, i.e., that part
of the speaker's and his or her listener's knowledge, beliefs, and assump-
tions that are shared. Clark and Carlson point out that this shared informa-
tion can be divided into three parts. The first source is linguistic copresence.
Here the listener takes as common ground all of their conversation up to
and including the utterance currently being interpreted. A second source for
common ground is physical copresence. Here the listener takes as common
ground what he or she and the speaker are currently experiencing and have
already experienced. The final source of evidence is community member-
ship. This includes information that is universally known in a community
and can be represented by structures such as frames (Minsky, 1975), scripts
(Schank & Abelson, 1977), schemata (Rumelhart & Ortony, 1977), etc.
Moreover, it also covers mutually known conventions governing the pho-
nology, syntax, and semantics of the sentence uttered. Each conversation
then can be viewed as an accumulation of common ground shared between
speaker and listener.

    This view of comprehension provides some necessary constraints on
the understanding process.[5] When a speaker says something to a listener, he
or she only intends the listener to interpret what is meant within the limits of
their common ground. Clark and Carlson (1981) called this the *intrinsic*
context of his utterance, and all other aspects of knowledge and the situa-
tion are *incidental* context. By focusing on those parts of the *intrinsic* con-
text, a listener should be able to interpret what a speaker says without having

to first evaluate one kind of information (background) before another (context). The notion of common ground between speaker and listener suggests one way of restricting the possible meanings a speaker may intend without the necessity of a literal analysis of what a speaker says. Given the presence of common ground, people may understand directly what speaker's mean without any analysis of a sentence's literal interpretation. The following section considers this hypothesis.

Do People Always Compute a Sentence's Literal Meaning?

My concern as a psychologist is to discover what people *actually* do in understanding language. Although many of the models proposed in linguistics and philosophy are analytically plausible, it is important to gather further empirical evidence to test these ideas if they are to be considered candidates for psychological theories. My criticisms of these models focus on the idea that understanding the literal meaning of a sentence is an obligatory process in determining a speaker's conveyed meaning. As outlined above, most models propose that understanding many kinds of nonliteral discourse, such as indirect requests, irony, metaphor, etc., includes finding their literal meanings defective in some context. From here, the listener can derive the speaker's intended meaning either via conversational postulates (Gordon & Lakoff, 1971), conversational maxims (Grice, 1975), or the rules of speech acts (Searle, 1975, 1979b).

In Gibbs (1979) I questioned whether people must first process the literal meaning of an indirect request before deriving its nonliteral, conveyed interpretation. I argued that, with appropriate social and linguistic context, people can comprehend a speaker's intended meaning by use of a sentence like *Can you pass the salt?* without first analyzing its literal interpretation. Two experiments were conducted to test this hypothesis. Subjects read stories, one line at a time, on a CRT, ending in either indirect requests, such as *Must you open the window?* (meaning *Please leave the window closed*), literal uses of the same sentences that were considered to be literal questions in their contexts, and direct requests, such as *Do not open the window.* After each story, subjects made a paraphrase judgment for that story's last line.

If people actually compute the literal meaning of an indirect request before deriving its nonliteral interpretation, then indirect requests should take longer to process than either literal uses of the same sentences or direct requests. The results of these studies, however, showed that indirect requests took *no* longer to read than either literal sentences or direct requests, when these sentences were read in appropriate context. Without any preceding context, subjects took *much* longer to read and make paraphrase

judgments than they did for literal sentences. These results suggest that people do not analyze the literal meanings of many indirect requests *before* deriving their indirect interpretations, when these expressions are seen in appropriate situational contexts.

More recently, I have shown that people do not process the literal interpretation of an indirect request *at the same time as* comprehending its conveyed meaning (Gibbs, 1983a). In these studies, when subjects read conventional, nonliteral uses of expressions such as *Can't you be friendly?* (meaning *Please be friendly to others*) they were not subsequently faster in making sentence/nonsentence judgments for paraphrases of the literal meanings of these utterances than they were to make the same judgments for unrelated paraphrases. If subjects computed the literal interpretations of indirect requests, then there should be some facilitation for subjects' responses to literal paraphrase sentences. Since there was no facilitation here, it is doubtful that people computed the literal meanings of these expressions during understanding.

It appears, then, that people can understand that sentences such as *Can you pass the salt?* are polite requests without any analysis of their compositional or literal meanings. Given an appropriate context, a literal analysis of indirect requests is *not* an obligatory process. This may be particularly so for conventional kinds of indirect requests. The results of these experiments cast doubt on Searle's assertion that the literal meanings of indirect speech acts are *always* processed first and that the literal meanings of these expressions are intended seriously as part of the speakers' meanings (see Clark, 1979, and Munro, 1979, for further discussion of this latter issue).

These criticisms of Searle's model can be extended to other kinds of nonliteral language. A number of investigators have shown that people do not first process the literal meanings of idiomatic expressions, such as *kick the bucket,* before determining their conveyed, figurative interpretations (Gibbs, 1980; Ortony, Schallert, Reynolds, & Antos, 1978; Swinney & Cutler, 1979). For example, in Gibbs (1980) I found that people take much less time to read and make paraphrase judgments for conventional, idiomatic uses of expressions, such as *He's singing a different tune* (meaning *He has now changed his mind*), than to process literal uses of the same expressions. If people first analyzed the literal interpretations of idioms before deriving their conveyed meanings (see Bobrow & Bell, 1973; Weinreich, 1967), then idiomatic expressions should have taken significantly longer to process than literal sentences. This, however, was not the case.

In other research (Gibbs, 1984) I have demonstrated that people do not simultaneously process both the literal and nonliteral meanings of idioms (Gibbs, 1982, 1984). I found that, when subjects read conventional, nonliteral uses of idioms, they were not subsequently faster in making sentence/

nonsentence judgments for paraphrases of the literal meanings of these utterances than they were to make the same judgments for unrelated paraphrases. If subjects computed the literal interpretation of idioms, then there should be some facilitation for subjects' responses to literal target sentences. The fact that there was no facilitation suggests that people do not compute the literal meanings of idioms at any point during understanding. Once again we see that literal analyses of many nonliteral utterances is not an obligatory process during comprehension.

The case of ironical utterances poses an even greater challenge to Searle's account. Consider a situation where you have just committed a grievous deed toward a good friend. Your friend discovers this and says to you *A fine friend you are*. Searle states that here, as in metaphor, the speaker's meaning and the sentence or literal meaning are different. The hearer's task is to derive the conveyed meaning (*You are not a good friend*) from the sentence's literal interpretation. Taken literally, the utterance is grossly inappropriate, and so the hearer is forced to render it appropriate. The most natural way of doing this, according to Searle, is to interpret the utterance as meaning the opposite of its literal form (also see Grice, 1975, 1978).

There are a number of problems with this formulation. First, there is some doubt as to whether this general process of conversational inference is *ever* able to determine the nonliteral meanings of many ironic utterances (cf. Sperber & Wilson, 1981a; Wilson & Sperber, 1981). The Searle model states that people infer the nonliteral meanings of ironic expressions by computing the opposite of these sentence's literal interpretations. However, in many cases the opposite of an ironic statement's literal meaning is not clear. Imagine a context where Al kicks Bob in the shin and Bob sarcastically says *Thanks*. The Searle model would generate an ironic opposition something like *No thanks* or *It is not the case that I'm thanking you*. This does not, however, capture the true sarcastic intention in using this utterance, namely *You have done something that I do not appreciate*. The sarcastic meaning of the expression *Thanks* denies one of its felicity, not truth, conditions: it is infelicitous to thank someone when the latter deserves ingratitude. However, felicity conditions are pragmatically and not logically related to the use of a sarcastic utterance (cf. Kaufer, 1981). Finding the opposite of an expression's literal interpretation will not always provide a speaker's sarcastic or ironic meaning.

Finding the opposite of a sentence's literal interpretation to arrive at its sarcastic meaning rests on the idea that people always compute the literal meaning of a sentence before the nonliteral meaning is determined. I have already reviewed a number of empirical studies that cast doubt on the necessity of processing the literal meanings of many nonliteral utterances. Recently,

I have found that people do not appear to compute the literal meanings of sarcastic utterances before deriving their nonliteral interpretations (Gibbs, 1983b).

In this study, I examined the processes by which people understand sarcastic indirect requests, such as *Why don't you take your time getting the ball?* (meaning *Hurry up and get the ball*). Sarcastic indirect requests like these are interesting because they are nonliteral in two ways: (1) they are requests and not literal questions, and (2) they are meant sarcastically. Searle's model would predict that sarcastic indirect requests should take quite a bit longer to process than literal uses of the same expressions or nonsarcastic indirect requests (like *Will you hurry up and get the ball?*), since hearers must derive both the request and sarcastic meanings from an analysis of these sentences' literal interpretations. My hypothesis, however, was that hearers should be able to understand these expressions more or less directly if they are stated in appropriate situational contexts. The results of a reading-time study supported this idea. Sarcastic indirect requests took *much* less time to process than either literal uses of the same sentences or nonsarcastic indirect requests. These results demonstrate that people need *not* process the literal meaning of a sarcastic expression before figuring out its intended, nonliteral meaning. Furthermore, these data are not consistent with any proposal suggesting that sarcasm is comprehended by always taking the opposite of a sentence's literal meaning.

Another problem with Searle's account is that there are many expressions where the speaker actually does mean what she says but is still speaking ironically. For example, a driver can say to a passenger *I love people who signal,* when another car has just cut in front without signalling, and mean this ironically even though the statement is literally true—the speaker does appreciate people who signal before turning. The irony in this utterance comes from the other driver not being included in that set of people who do signal. These kind of utterances, which are both literally true and ironic, should be comprehended by the same mechanism by which other ironic expressions, such as *A fine friend you are,* are handled. However, listeners would never comprehend the speaker's intentions if they only computed the opposite of these sentences' literal meanings.

A similar difficulty is found with instances of irony based on understatement (or meiosis). Consider the remark *It seems to be raining,* spoken in the context of a downpour. The intended meaning of this expression is not the opposite of its literal interpretation. The speaker is being ironic because he or she is saying much *less* than is the case given that it is raining very hard. Again, Searle's model has no way of specifying how hearers arrive at speakers' intentions.

Sperber and Wilson (1981a, 1981b; Wilson & Sperber, 1981) have proposed an alternative theory that attempts to account for many of the prob-

lems with the standard-pragmatic model of sarcasm and irony. Their idea is that irony involves the distinction between use and mention, rather than the distinction between literal and nonliteral meaning. The sentence *Please do not smoke,* for example, can be *used* to tell people not to smoke, but it is only *mentioned* in *The sign says "Please do not smoke."* This distinction is useful because the truth value of the mentioned expression is irrelevant to the truth of the proposition that mentions it. According to their theory, there is no nonliteral proposition that hearers must substitute for the literal proposition. Rather, the listener is *reminded* echoically of some familiar proposition (whose truth value is irrelevant), and the speaker's attitude toward it. By mention of some proposition, sarcastic expressions serve many purposes: to reinforce solidarity or camaraderie among group members, or to elevate the speaker's own position at the expense of the addressee. Hearers must recognize that a statement, such as *A fine friend you are,* does not violate the maxim that people always speak truthfully, but that it is an instance of mention (in this case that the hearer believes she is a good friend of the speaker).

Jorgensen, Miller, and Sperber (1984) have recently presented the results of an experiment that provide some empirical support for the mention theory of irony. In their study, subjects read short descriptions of episodes ending with a sentence that was intended as ironic or sarcastic. Some of the stories' final utterance echoed an earlier statement in the story, while others did not. Subjects were asked to read the stories and answer questions designed to test whether they perceived the intended, sarcastic meanings of the final utterances. The results showed that subjects generally viewed final utterances that contained explicit echoes earlier in the stories as being ironic more often than they did final utterances with no such antecedents. Jorgensen et al. suggest these data support the claim that people do not perceive utterances as ironical unless they echo previously mentioned beliefs, attitudes, or opinions.

In Gibbs (1983c) I present the results of a series of experiments suggesting that people remember sarcastic utterances better than nonsarcastic ones because sarcasm involves a speaker's echoic mention of some proposition. The superiority of memory for sarcastic utterances cannot be explained by any special intonation properties of these expressions, since similar results were obtained when people read these utterances without any auditory information.

To summarize, there is a growing body of experimental evidence against the idea that an analysis of a sentence's literal meaning is an *obligatory* process in sentence comprehension. Given appropriate pragmatic context, people are usually able to comprehend the intended meanings of many nonliteral utterances directly. All of this does not necessarily mean that people never construct or analyze the compositional structure of sentences. In

many instances this is a sensible strategy to use in determining what speakers mean, particularly for novel and innovative kinds of language use (Gibbs, 1982). It is also possible that people examine the conventional, literal meanings of many lexical items in sentences even if these are not combined to form a literal representation for a sentence. Swinney (1979; Onifer & Swinney, 1981) demonstrated that people momentarily activate both meanings of *bug* (*insect* and *spy device*) even in the presence of strong context supporting only one of its interpretations. This effect is only momentary, which suggests that people only maintain the meaning appropriate to the discourse context. The context-dependent interpretation of a sentence, however, may have little to do with its putative literal meaning.

III

The idea that nonliteral language is understood via some analysis of the literal meaning of a sentence implies a principled distinction between the literal and nonliteral meanings of an utterance (Glucksberg, Gildea, & Bookin, 1982). Literal meanings are thought to be determined automatically, while nonliteral, metaphoric meanings are determined only optionally. Making a distinction between literal and metaphoric meaning has been a primary concern for many psychologists, linguists, philosophers, and literary theorists (see Ortony, 1979a, for a variety of views on this matter). Loewenberg (1975) argues, for instance, that any satisfactory theory of metaphor requires some mechanism for identifying metaphors, since they can't be understood unless recognized as such. For the most part, metaphor is seen as something that evolves out from literal language, perhaps from the systematic violation of semantic rules.

In this section, I briefly consider another premise of the *literal meaning hypothesis,* namely that there is some principled distinction between literal and metaphoric meaning. I argue that, from a psychological perspective, such a view is problematic. Part of my discussion focuses on attempts to view literal meaning as something other than the compositional meaning of a sentence. Many of these proposals explicitly attempt to distinguish literal and metaphoric meaning. Following this, I consider one final premise of the *literal meaning hypothesis,* concerning the distinction between semantics and pragmatics.

Problems with the Literal-Metaphoric Meaning Distinction

Problems with distinguishing utterances with literal meaning from those with metaphoric meanings immediately are seen in cases where literal falsehood is not a necessary condition for a sentence to have metaphorical con-

tent. For example, *No man is an island* is literally true, but it is metaphorically true as well (Glucksberg et al., 1982). And as I mentioned earlier, there are instances of irony, such as *I love drivers who signal before turning,* that are literally true, but still can have a nonliteral meaning. Positing a distinct difference between literal and metaphoric meanings cannot account for expressions like these. Of course, this does not suggest that meanings can be randomly assigned to sentences. Most sentences have meanings conventionally associated with them given some context (cf. Clark, in press; Gibbs, 1981, 1982; Morgan, 1978), and in many instances these conventional meanings are *not* their literal ones (as with *Can you pass the salt?*). One could consider these sentences' conventional interpretations as their literal meanings. I see nothing wrong in this, as long as it is recognized that these putative literal meanings are not their compositional interpretations and that these are generally related to specific contexts of use.

There is experimental evidence to suggest that people are automatically biased toward the nonliteral meanings of many indirect requests and idioms, ever when these expressions are used in literal contexts (Gibbs, 1980, 1983, 1984). In Gibbs (1980), subjects heard stories containing conventional and literal uses of idiomatic expressions. Later on, subjects were presented with recall prompts and asked to remember the target expressions. The results showed, among other things, that subjects' recall of literal uses of idioms was facilitated when they heard idiomatic prompts. Thus cues like *reveal secret* facilitated subjects recall of literal uses of expressions, such as *You can let the cat out of the bag.* This suggests that subjects analyzed the conventional, nonliteral interpretations of these expressions before deciding that their literal meanings were appropriate. Because people strongly associate these expressions with their nonliteral interpretations, they immediately interpret them as having idiomatic meanings. This would be so even though these sentences' nonliteral interpretations had nothing to do with these utterances' intended literal meanings.

People also appear to be biased toward the nonliteral meanings of expressions such as *Can you pass the salt?* even when these are meant literally. In Gibbs (1983a), I found that subjects' sentence/nonsentence judgments to targets that paraphrase the indirect, nonliteral meanings of sentences like *Can you pass the salt?* were facilitated when they read literal uses of these sentences (in this case something like *Are you capable of passing the salt?*). Subjects most likely *first* analyzed the conventional, indirect meanings of these sentences before deciding that their literal meanings were appropriate. Analysis of the sentence's conventional, indirect interpretation facilitated subjects' responses to the indirect targets. It seems, then, that people are automatially biased toward the nonliteral interpretations of many expressions in the language, even when these are meant literally. One could argue that the nonliteral meanings of many utterances are, in fact, their literal ones.

Another instance of people being automatically biased toward the nonliteral meanings of sentences was shown by Glucksberg et al. (1982). They were interested in how people comprehended expressions such as *Some jobs are jails*. They asked subjects to make rapid decisions about the literal truth of such sentences, and found that subjects correctly judged that sentences like *Some jobs are jails* are literally false. However, the availability of a true, metaphoric interpretation (like some people are trapped in their occupations) interfered in making the literal judgments. When metaphoric interpretations of literally false sentences were available, subjects took significantly longer to decide that such sentences are false. Any theory which asserts that metaphoric meaning is computed on the basis of a failed attempt to compute a literal meaning cannot explain why metaphoric meaning should interfere with processing when only a literal interpretation is required.

The difficulty of distinguishing literal meaning from metaphoric meaning has resulted in new attempts to define literal meaning as being something other than compositional meaning. There are a number of ways to characterize literal meaning as being noncompositional and context-independent. Allwood (1981) describes three types of solutions, each of which tries to show how literal meaning can be distinguished from metaphoric meaning. First, there is the greatest common denominator approach that the literal meaning of a sentence is that which is common to all contexts of use. In other words, literal meaning is situation independent by definition. This has the advantage that it accounts for all types of meaning commonly considered in descriptive linguistics, such as referential, cognitive, emotive, etc.. The problem with this approach is that for many linguistic items there is no intersection of meaning. Moreover, if some greatest common denominator can be found, it will have the property of being very general and abstract. This is a consequence of its being common to many different contexts of use, many of which are considered metaphorical. Literal meaning will be so general that it would be quite difficult to distinguish it from metaphoric meaning.

A second solution suggests that literal meaning is not the intersection but the union of all uses. This would connect any information that has been conveyed by an expression with its literal meaning. It would also have the undesirable effect of making literal meaning extremely vague and polysemous. Again, it would be difficult to clearly distinguish literal meaning from metaphorical uses of language.

A third solution is that literal meaning should be thought of as an ideal representation type, similar to prototype theory (Rosch, 1978). A prototypical meaning would be the most representative meaning of a sentence across all contexts of use. This can even be thought of as the basic-level meaning of a sentence. A main problem for this proposal, according to Allwood, is that

not all types of meaning are equally amenable to a prototype analysis. He argues that words such as *ouch, though,* and even *prototype* do not have clearly defined prototypical meanings. But a number of empirical studies have shown that abstract concepts such as a work of art or a science (Hampton, 1981), and speech acts such as *lying* (Coleman & Kay, 1981), can also have prototypical meanings. A semantic prototype associates a word or phrase with a prelinguistic, cognitive schema, or image. Speakers are able to judge the degree to which an object (or use of a word) matches this prototype. One way of looking at the traditional view of literal meaning is as the combination of the prototypical meanings of all the words in a sentence (combined via syntactic rules). Another possibility is that a sentence itself has a prototypical meaning apart from the sum of the individual word meanings. Some linguists have even suggested that these two meanings are *both* literal ones (cf. Green, 1975; Sadock, 1970). Thus *Can you pass the salt?* would have two literal meanings, one a question and the other a request. But this approach to literal meaning dilutes the value of such a notion. How many literal meanings can one sentence have? Expressions like *How about the salt?* can easily be seen as having at least three literal meanings—a question, a request, and an offer—each of which seems equally plausible.

Still, the idea that sentences have prototypical meaning has some appeal (see Lakoff, 1982, and Rumelhart, 1980, for further discussions of prototypes and meaning). In the case of *Can you pass the salt?*, the request meeaning would be most prototypical and easiest to understand, while the question interpretation would be further away from the prototype and would be more difficult to comprehend. The results of Gibbs (1980, 1983) on understanding idioms and indirect speech acts are consistent with this idea. Nonetheless, the implications of viewing the literal meaning of a sentence as its most prototypical meaning remain to be seen. Needless to say, such an account would not be encouraging to those wishing to equate literal meaning with the compositional meaning of a sentence.

These difficulties in distinguishing literal from metaphoric language have been noted by many philosophers and linguists. Black (1979) remarks that any attempt to provide infallible criteria for identifying metaphor as something different from literal language is doomed to failure. In a similar vein, Sadock (1979) criticizes Grice's (1975) proposal that certain tests can be performed that will distinguish literal sentences from metaphoric ones, and concludes that there is no rational basis for distinguishing literal and metaphoric language. One of the consequences of Sadock's conclusion, which he explicitly states, is that the study of metaphor does not constitute a proper part of linguistics, since metaphors are features of language use rather than features of language per se.

A proposal by Morgan (1978) takes this idea into account by distinguishing between conventions of usage and conventions of language. An

ordinary meaning convention (e.g., that the word *dog* in English designates members of the set of dogs) is a convention of language. Conventions of usage concern appropriate linguistic means for accomplishing specified purposes on particular occasions. In Morgan's view, the use of certain expressions like *Can you pass the salt?* involves linguistic convention, but the convention is one *about* language rather than a convention *of* language. This argument for separate conventions of language use better serves the needs of a psychological theory. While it may be useful to make a distinction between literal and metaphoric meanings in terms of conventions *of* language, it may not be necessary or even possible to do so with conventions *about* language. Conventions *about* language inherently involve issues of language use and as such the differences between literal and metaphoric language may be more apparent than real.

My claim that there is no principled distinction between literal and metaphoric meaning leaves one important question unanswered: how can we explain why people can often judge a sentence to be literal or metaphoric? This intuition certainly should be explored, but does it indicate that listeners process so called literal and metaphoric utterances differently? Rumelhart (1979) argues "that the classification of an utterance as to whether it involves literal or metaphoric meanings is analogous to our judgment as to whether a bit of language is formal or informal. It is a judgment that can be reliably made, but not one which signals fundamentally different comprehension processes" (p. 79). Part of the reason why some sentences seem so literal is that listeners are influenced by the interpretive context in which such judgments are made. People will judge a sentence as having literal meaning because it is isomorphic with the situation in which the sentence is interpreted (Fish, 1980). It is not the case then that the literal meaning of a sentence can be *uniquely* determined, since our understanding of situations will always influence our understanding of sentences. To speak of a sentence's literal meaning is to already have read it in light of some purpose, to have engaged in an interpretation. What often appears to be the literal meaning of a sentence is just an occasion-specific meaning where the context is so widely shared that there doesn't seem to be a context at all.

Some psychologists have tried to capture the intuition that some sentences are literal and others are not, while not requiring different comprehension processes (cf. Ortony, 1979b, 1979c; Rumelhart, 1979). Ortony (1979b, 1979c), for example, compared the two statements (1) *Encyclopedias are like dictionaries,* and (2) *Encyclopedias are like gold mines.* Whereas (1) is a literal comparison statement (encyclopedias are really like dictionaries), (2) is a nonliteral comparison (encyclopedias are not really like gold mines). Ortony proposed that people arrive at a coherent interpretation of a nonliteral comparison in much the same way as for a literal comparison statement. These statements are both made interpretable by a "predicate appli-

cation'' process whereby salient predicates of the vehicle (second term) are applied to the topic (first term).⁶ This process examines the degree to which high-salient predicates of the second term (*dictionaries* or *gold mines*) are high or low-salient predicates of the first (*encyclopedias*). For (1) there are very high-salient predicates of *dictionaries* that are also high-salient predicates of *encyclopedias,* but in (2) the high-salient predicates of *gold mines* are lower-salient predicates of *encyclopedias.* Generally, a statement of the form "A is like B" will be seen as a literal comparison if high-salient properties of B are also high-salient properties of A. If high-salient predicates of B are lower-salient predicates of A, while there are high-salient predicates of B that cannot be applied to A at all, then the statement will be seen as a nonliteral comparison. The key feature, then, of a nonliteral statement is the radical asymmetry of the comparison between the topic and vehicle.

Ortony's position denies any fundamental difference in the processing of literal and nonliteral comparisons. He also suggests that the process of predicate application works in many cases of metaphor that are not explicit similes. The intuitive judgments, then, that some statements are literal and others metaphoric, does not signal that different understanding processes are involved. Differences between literal and metaphoric meanings in language are more a matter of degree than of kind. Certainly, there are important differences between the two in regards to their communicative functions in language, but this does not imply that there are differences in the underlying psychological mechanisms used in comprehending them.

Problems with the Semantics-Pragmatics Distinction

The argument against a strict literal-metaphoric meaning distinction and in favor of direct processing of many nonliteral utterances also has implications for the commonly held distinction between semantics and pragmatics. Much of the work in pragmatics assumes the existence of a specialized pragmatic device with its own formal properties and rules (see Cole, 1978, 1981; Stalmaker, 1972). The difference between semantics and pragmatics focuses on the former having to do with what linguistic expressions mean, and the latter with what speakers mean by using these expressions.⁷

Surely, there can be important descriptive utility in distinguishing between linguistic levels. This may be particularly so for linguists interested in

⁶Ortony uses the term "predicate" to refer to "subschemata," which represents knowledge of the constituent structure of the entities being compared.

⁷Morris (1946), who introduced the tripartite division of the theory of language as syntax, semantics, and pragmatics, stated that semantics is concerned with the relations of signs and the objects to which they refer, while pragmatics concerns the interaction between signs and their users.

form-meaning pairs and philosophers interested in truth conditions on ex-
pressions. But even here there is debate. Recent arguments in favor of an
autonomous semantics (e.g., Katz, 1980) have emphasized that the meaning
of a sentence and its logical form are identical, each represents the literal
meaning exclusive of pragmatic or encyclopedic knowledge. The level of
semantic representation is supposed to be the level over which semantic
properties and relations such as inference, synonymy, and anomaly can be
formally stated. This idea contrasts with Chomsky's (1975, 1977) recent
view that there is a level of logical form, which is part of sentence grammer,
and an independent level of meaning, apart from sentence grammar, which
incorporates information about speakers' beliefs. It is over this extra-lin-
guistic level of meaning that Chomsky believes semantic properties and rela-
tions are defined. Thus, according to Chomsky, there is no clear separation
between semantic inferences and pragmatic or knowledge-based inferences.
As Jackendoff (1981) summarizes, "there is no single level of representa-
tion which is exclusively devoted to expressing 'literal meaning' and which is
also the domain over which semantic properties and relations are formally
defined" (p. 425).[8]

Whether or not different forms of linguistic knowledge are internally
represented as discrete components of a mental competence grammar, the
distinction between them need not be maintained during processing (Tyler,
1981). The evidence I have presented against the *literal meaning hypothesis*
strongly suggests that listeners are not always constructing a level of repre-
sentation solely in terms of the literal meaning of a sentence. People are
often able to use pragmatic information at the earliest stages of sentence
processing without having to first construct a complete semantic representa-
tion for a sentence. Given that the representation of the meanings of words
and utterances involves structures that are inherently connected with the
rest of our knowledge, it may not even be possible to isolate part of those
structures and identify them as the semantic (or literal) content of sentences
(cf. Schank, Birnbaum, & Mey, 1982).

There appears, then, to be little motivation in a psychological theory
for making a separation between semantics and pragmatics. This conclusion
seriously undermines one critical assumption behind many psycholinguistic
models of sentence comprehension (cf. Fodor, Bever, & Garrett, 1974;
Forster, 1979; Frazier & Fodor, 1978), namely that the processing system is
sequentially organized with a flow of communication from the lowest level
in the system (the phonetic component) to the highest (the pragmatic com-

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[8] I hasten to point out that Jackendoff suggests there is nothing inconsistent in Chom-
sky's claim that semantics is autonomous from syntax but not from pragmatics. Moreover,
Chomsky's argument against the autonomy of semantics from pragmatics does not confound
semantic competence with semantic performance. He only claims that theories of semantic and
pragmatic competence are governed by the same set of principles (cf. Jackendoff, 1981).

ponent). Other psycholinguistic studies on sentence processing have even shown that listeners do not compute a distinct level of syntactic description before semantic information is considered (Marslen-Wilson, 1975; Marslen-Wilson & Tyler, 1975, 1980; Tyler & Marslen-Wilson, 1977). For example, Marslen-Wilson (1975) used errors in the shadowing of sentences to show that high-level processing must be occurring throughout the reading of a sentence. Moreover, many AI systems have shown that it is indeed computationally possible to build language processing systems that do not maintain a separation between semantics and pragmatics (see Schank, Lebowitz, & Birnbaum, 1980). The development and empirical confirmation of many interactive-parallel theories of language processing illustrates the plausibility of *not* separating knowledge of the world from our knowledge of language per se.

IV

I have argued that the *literal meaning hypothesis* is on shaky ground in psychology. Not only is it difficult to show that all sentences have well-defined literal meanings, but even in cases where we supposedly can, one finds that these are not always used in understanding language. It is important to reiterate here that some instances of language may indeed require an analysis of their compositional meanings. All I am suggesting is that computation of an utterance's literal meaning is not an obligatory process, nor should it be a fundamental starting point for a theory of natural language processing. At the same time, I do not mean to suggest that there is nothing special about innovation utterances, metaphors, idioms, indirect speech acts, etc. Whatever the eventual explanation for these kinds of language, it is doubtful that it rests simply on the idea that these expressions are nonliteral and therefore always require specialized processing. Defenders of some notion of literal meaning may reply that my arguments conflate a theory of linguistic meaning with a theory of language use. As a psychologist, I see nothing inappropriate in collapsing such a distinction. This does not invalidate the need for such distinctions in other disciplines, but, for psycholinguistic concerns, use is the prime object of inquiry.

It is also necessary to note, once again, that my criticisms of the *literal meaning hypothesis* do not necessarily invalidate linguistic and philosophical concerns with literal meaning. However, I want to suggest that discussions of literal meaning in linguistics and philosophy are not directly applicable to the concerns of a psychological theory of meaning. Traditional theories of literal meaning as context-free meaning, and revised notions of literal meaning as sentence meaning relative to a set of background assumptions, do little to explain what people do in understanding language. From a psycho-

logical perspective, the semantic-competence of speakers and hearers can not be seen as knowledge apart from its actual use in speaking, listening, and acquiring language. There must instead be an examination of how knowledge is represented and used in normal discourse situations, and this has been a very significant trend in many areas of cognitive science concerned with linguistic behavior.

My argument against the notion of literal meaning does not tell us exactly what a psychological theory of language comprehension should be. At the very least, however, we should reject the idea that the putative literal meanings of sentences always places obvious constraints on what really goes on during understanding. There is enough information in the pragmatics of a speaker-listener interaction to preclude an automatic analysis of the literal meaning of a sentence. Specifying what that pragmatic information is and exactly how it influences understanding processes is a monumental task. My suspicion here is that speech act theorists have been on the right track in appealing to the role of intention in formulating comprehension models. That is, a listener determines what a speaker intends for him or her to discover by means of his or her recognition of the speaker's intentions (Allen & Perrault, 1980; Clark & Carlson, 1981, 1982a, 1982b; Cohen & Perrault, 1979; Grice, 1957, 1968; Schiffer, 1972; Searle, 1969). This includes a listener's understanding of the social context and his or her knowledge of the speaker's beliefs and the speaker's goals in speaking. Obviously, the actual language used is also examined, which may involve some analysis of the lexical items, themselves context-sensitive, and aspects of the grammatical structure of the sentence. But this does not mean that an analysis of the literal, compositional meaning of a sentence is either necessary or even useful.

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