

THE PRAGMATICS OF PRESUPPOSITION

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This paper compares the two main proposals for describing presupposition, the logical notion which takes presupposition to be a (logical) relation between two sentences, and the pragmatic notion which incorporates the beliefs of the speaker and aspects of the context of the speech act into the set of things presupposed by a sentence. The phenomena which might be included in pragmatic presupposition and not in logical presupposition are grouped into several categories. Various definitions of pragmatic presupposition are discussed in relation to these categories. The philosophical viewpoints underlying the logical and pragmatic definitions are identified, and their implications for semantics are analyzed.

Of the two main proposals for describing presupposition, the traditional one of philosophers and linguists, which is referred to as the logical notion, holds that presupposition is a relation between two sentences. Keenan's formulation (1972, p. 45) is representative:

- (1) A sentence S logically presupposes a sentence S' just in case S logically implies S' and the negation of S, $\sim S$, also logically implies S'.¹

The term "logically implies" in (1) comes from Keenan's special definition of logical consequence (1972, p. 45):

A sentence S is said to be a logical consequence of a set of sentences S* just in case S is true in every world (that is, under all conditions) in which all the sentences of S* are true. In such a case...S* logically implies S.

Keenan lists several grammatical categories and constructions which involve presuppositions. These are listed below along with a sample sentence S and the sentence S' it logically presupposes.

...the truth of S' is a necessary condition of the truth or falsity of S. Thus, if S' is not true, then S can be neither true nor false (and must in the formal logic be assigned a third or "nonsense value"). (p. 45-6)

Determiners

(2) S The King of France is bald.

S' The King of France exists.

Factive predicates

(3) S Mary resented that Fred left.

S' Fred left.

Cleft sentences

(4) S It was John who caught the thief.

S' Someone caught the thief.

Selectional restrictions

(5) S That arithmetic is incomplete surprised Magrid.

S' Magrid is animate, intelligent.

Temporal subordinate clauses

(6) S John left when Mary called.

S' Mary called.

Nonrestrictive relatives

(7) S The Tiv, who respected Bohannon, are a generous people.

S' The Tiv respected Bohannon.

Certain aspectuals

(8) S Fred quit speaking.

S' Fred was speaking.

Iteratives

(9) S Fred called again.

S' Fred called at least once.

Presuppositional quantifiers

(10) S Only Fred shot himself.

S' Fred shot himself.

Notice that definition (1) works only if \neg S is the internal negation of S. Clearly, "It is not the case that the King of France is bald" does not imply "There is a King of France", while "The King of France is not bald" does imply it. Keenan (1972) omitted mention of this fact.

Keenan defines presupposition as a logical requirement of a sentence S, a requirement created solely by the meaning of the words in the S and stated in terms of another sentence S'. For example, the word "resent" preceding a complement sentence S' as in (3) always creates the presuppositional requirement for S that S' be true. "Resent" has this factive meaning built into it. Logical presupposition, then, is a relation between a sentence containing a certain presuppositional word or construction, and another sentence S', a relation which is independent of the context of the utterance of S, or even whether S was or will be uttered at all.

I: S presupposes S'

In Keenan's description, the effect of a failed presupposition is to rob a sentence of its truth value. Later I will discuss the problems this approach poses for standard logic (p. 13). Here I simply point out that Keenan's description does not clearly state the way the meaning of a sentence is affected when a sentence it presupposes is false. His informal statement of this effect is that "the presuppositions (both logical and pragmatic) of a sentence are those conditions that the world must meet in order for the sentence to make literal sense. Thus, if some such condition is not met, for some sentence S, then either S makes no sense at all or else it is understood in some non-literal way; for example, as a joke or metaphor". The locution "in order for the sentence to make literal sense" equivocates on whether the effect of a failed presupposition is to render the sentence meaningless or to render it inappropriate. "This sentence makes no sense" can mean either "This sentence is nonsense" (i.e., meaningless) or "This sentence sounds odd." In his definition of logical presupposition Keenan says "if S' is not true then S can be neither true nor false (and must be assigned a third or 'nonsense' value)". (1972, p. 45-6). Here again, to give S a third or "nonsense" value when S' is false makes no statement about the effect of the failure of S' on the meaningfulness of S.

Logical presupposition is restricted in that it does not attempt

to account for everything that is antecedent to the utterance of a sentence, only those things necessitated by the meaning of the words, or construction. It doesn't account for presuppositions which vary with the circumstances of the use of the sentence, nor for what the speaker must believe in order to say it. Pragmatic presupposition as defined in this paper differs from the logical definition on the fundamental question of what categories are involved in the presupposition relation. Pragmatic presupposition as defined here is a relation between a sentence and the beliefs a speaker must ostensibly have in order to use the sentence appropriately. These beliefs refer not only to other sentences (propositions) which are the logical presuppositional requirements of S, but to the hearer's beliefs, the social and physical contexts and the discourse context.

Ordinarily a speaker must ostensibly believe that the presuppositions of a sentence are true in order to use the sentence. The only exceptions involve special situations, such as the suspension of belief by actors on the stage, or the explicit assumption of a presupposition believed to be false for the sake of argument, as in reductio ad absurdum. Each special situation includes an explicit or implicit denial of the ordinary relation between the speaker's beliefs and the sentences he utters. The modifier "ostensibly" covers the case where a speaker is deliberately using sentences with presuppositions he believes to be false in order to misinform the hearer. Lying cannot be counted as a special situation similar to the others mentioned but rather as using the hearer's expectation that the ordinary interpretation of presuppositions is in effect, namely, that they are believed by the speaker. Part of what defines presuppositions is the fact that they can be used to lie, just as assertions can. Lakoff points out that native speakers of English differ substantially in the judgments of the grammaticality of the following sentences, all of which presuppose that the subject has a mind.

- (11) (a. My uncle)
 (b. My cat)
 (c. My goldfish) (realizes that I'm a lousy cook.)
 (d. My pet amoeba) (believes that I'm a fool.)
 (e. My sincerity) (enjoys tormenting me.)
 (f. My birth)

In these cases, says Lakoff, "one's judgment of the well-formedness of sentences seems to vary with one's beliefs or assumptions." He goes on to argue for making presuppositions part of syntax. "A grammar can be viewed as generating pairs, (PR,S), consisting of a sentence, S, which is grammatical only relative to the presuppositions of PR." (1971, p. 336).

Lakoff correctly sees that selectional restrictions create pre-

suppositional requirements for sentences, but by assuming that selectional restrictions must be viewed solely in syntactic terms, and that the issue here is grammaticality, he wrongly concludes that the corresponding presuppositions must be generated in the syntactic component. For example, along with the sentence (11) would be generated the PR "Cats have minds." His assumption is based, I think, on the prior assumption that linguists can only talk about things they can justify including in the tree structures of sentences.

Keenan, on the other hand, frankly places presupposition in semantics where it affects semantic properties such as truth value and meaning. The sentences in (11) and their presuppositions satisfy Keenan's definition of logical presupposition. Each verb imposes the presupposition requirement on the S that its subject be "animate, intelligent," as in (5) above. Keenan's view is consistent with the persuasive argument by McCawley (1968) that all selection is semantic.

Keenan's view, that presupposition is a logical relation, has the defect, however, that it predicts a sentence won't "make literal sense" if its presupposition fails to be true in the world, and that this will be the case for all users of the sentence. If we incorporate into the definition of presupposition reference to the belief of the speaker,² we can account for the meaningfulness of sentences whose presuppositions fail and for the variability in acceptability of the sentences in (11). My version of such a definition, (12), claims that the S's in (11) presuppose the speaker's ostensible belief that each of the subjects on the left has a mind. If this presupposition fails, because a speaker doesn't believe the subject has a mind, then he won't use the S in its normal declarative sense. The semantics of the sentences of (11), the conditions which would have to be true for each of them to be true, don't vary for speakers, but the appropriateness for each speaker of using one of the S's in (11) does vary from speaker to speaker. This is a behavioral hypothesis. In this view, the meaning of a sentence doesn't depend on the truth of the presupposed proposition, but its appropriateness depends on whether the speaker believes the presupposition to be true.

- (12) A sentence S presupposes the speaker ostensibly believes P' in a certain discourse context, if the speaker must act as if he takes the truth of P' for granted and as if he assumes his audience recognizes he is doing so, when he uses S.

Logical presupposition is a subtype of (12) defined by the following:

- (12.1) A ostensibly believes P' whenever he uses S if S and the internal negation of S both imply P'.

where "imply" is defined as in standard logic. (12.1) makes explicit that it is internal negation which does not alter presuppositional requirements. Notice the redundancy, that any S which satisfies the logical definition (1), satisfies (12). The presupposed S' in (1) must be believed by the speaker.

Definition (12) relates a sentence and a belief, the belief by the speaker of the proposition which figures as S' in (1), the logical definition. Thus a sentence S presupposes that the relation in diagram III holds where ϕ is a set of propositions.³

II:	S	presupposes	III
III:	speaker A	ostensibly believes	ϕ

The relationship of the presupposed proposition to truth value is oblique in diagrams II and III, because a speaker can believe a false proposition to be true, and thus appropriately say (11b) for example, even if cats in fact don't have minds. In the logical definition, if it's false that cats have minds, then (11b) makes no literal sense. Here (11b) is completely meaningful, but the hearer may judge it to be false while the speaker judges it to be true. The speaker is intermediary between the sentence and the world.

Diagrams II and III show the value of the pragmatic definition of presupposition. It reveals a more complex relationship between the state of the world, the speaker and the sentence. Definition (12) states that what a sentence S presupposes is a relation between a speaker and a set of propositions. If one of the propositions is false when S is uttered, then the speaker is speaking inappropriately (or is lying), but S stands with the same semantic interpretation. Thus (12) accounts for the fact that both A and B understand (11b) perfectly well, even though A believes the presupposition that cats have minds and B doesn't. By saying S, A is acting as if P' were true, and this is part of the meaning of S.

Thus the issue with presuppositions is not grammaticality. A hearer may not agree with a presupposition of a speaker, and find his sentence false, but he won't find it ungrammatical. (11b) is quite sound grammatically, as is (2), though uttered in 1973 it is inappropriate. Lakoff's analysis flounders by stating the issue in terms of grammatical well-formedness rather than as one of appropriateness.

Definition (12) owes much to Stalnaker's formulation, (197?, p. 3):

- (13) A speaker presupposes P at a given moment in a conversation just in case he is disposed to act, in his linguistic behavior, as if he takes the truth of P for granted, and as if he assumes that his audience recognizes he is doing so.

The difference between (12) and (13) is that Stalnaker sees presupposition as a speaker-P relation, where "act as if" rather than "believe" expresses the speaker's mental attitude toward the presupposed proposition. My definition, (12), formulates presupposition as an S-belief relation, in which a sentence (in a discourse context) presupposes a belief. In order to use the S in a context, the speaker must have a certain belief. This definition accounts for the fact that certain words and constructions invariably create a presuppositional requirement for the sentences in which they occur. As we will see below, only discourse contexts can vary the set of presuppositions of a given sentence.

We have shown above that the pragmatic notion of presupposition gives a richer account of the same data the logical notion describes. Another factor antecedent to the use of sentences which a logical definition doesn't account for is the hearer's beliefs. For example, speaker A assumes when he says (14) that hearer B can identify the one and only one object named by "Fred".

- (14) Fred is walking.

To take a more complex example, suppose the World Championship Bridge Tournament is coming up soon in Washington. One avid bridge enthusiast, A, asks of another, B,

- (15) When's Washington?

We might say (15) is ungrammatical, but in fact, again, grammaticality is not the issue. It's the presupposition of semantic features (as in (6) above) which determines the appropriateness or lack of it for this sentence. In a wider sense (15) may be viewed as an example of discourse context altering the features of a noun phrase which ordinarily violates the presuppositional requirements of an S so that it is appropriate in that context.

In the above examples A assumes B has a certain belief or knowledge. Thus, the hearer's assumed beliefs can be viewed as part of the speaker's beliefs which are antecedent to his use of the sentence. A must believe propositions like:

- (16) B can identify Fred.

- (17) B identifies Washington as the name of an event, the World Championship Bridge Tournament.

Accordingly, we will expand diagram III, adding the hearer's beliefs to the set of P's the speaker must believe to say S appropriately (designated here by ψ in order not to imply the hearer must be believed to believe the same propositions as the speaker).

III': speaker A ostensibly ϕ
 believes hearer B believes ψ

Many of the facts of presupposition which the logical notion describes for declaratives only, apply just as well to questions and commands. For example,

- (18) S Is the King of France bald?

has the same presupposition as (2), the corresponding declarative. The speaker believes there is a King of France when he says (18).

- (19) S Does Mary resent it that Fred left?

presupposes "Fred left" just as (3) does. Similarly, the imperative

- (20) S Tell the King of France I'm here!

presupposes the speaker believes the King of France exists.

Note that these presuppositions are constant under negation.

- (21) S Isn't the King of France bald?

- (22) S Don't tell the King of France I'm here.

Definition (21) presupposes the same things as (18) and (22) the same things as (20).

Logical presupposition can't handle non-declaratives because definition (1) depends on the logical implication of a sentence, which in turn depends on the S having a truth value. But questions and commands have no truth value. Yet they seem, as we have seen, to have many of the same antecedent conditions for their use as the corresponding declaratives. The pragmatic definitions of presupposition given here, (12) and (13) easily take into account non-declaratives because they are not directly based on truth value.

The logical notion doesn't take into account the effect of the

social context on the appropriateness of an S. In order for speaker A to use the Spanish sentence (23) appropriately, he must believe a proposition like (24).

(23) S Vienes tu mañana? (Are you (familiar) coming tomorrow?)

(24) P I am on familiar terms with B. (the hearer)

Accordingly, diagram III' must be revised to include a set of propositions about the social context, a set designated by SC.

III':	speaker A	ostensibly believes	ϕ hearer B believes ψ SC is in effect
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Another solution to this problem has been suggested by Searle (1969). Sentences are seen to "raise the question" of the truth of a predicate with reference to its subject. A question asks whether the predicate is true of the subject. "Is Socrates wise?" asks if "wise" is true of Socrates. An imperative requests that the predicate become true of the subject. "Socrates be wise!" requests that "wise" become true of Socrates. The illocutionary force (declarative, interrogative, imperative) determines the form of raising the question of the truth of the predicate with reference to the subject. (1969, p. 122) The view of presupposition presented in this paper is not incompatible with such an analysis, while the logical notion, based on truth values of declaratives, is.

Another category of antecedent conditions which sentences presuppose has to do with the physical context. For example, (25) requires that the speaker believe a proposition like (26).

(25) S That over there is a pin.

(26) P There is an object viewable by B. (the hearer)

In addition to such deictic factors, other aspects of the physical context might be viewed as presupposed by an S; for example, the relative physical locations of the speaker and subject in the following:

(27) S John brought the car.

(28) S John took the car.

The use of the verb "bring" presupposes that "here" or some other location is established in the discourse towards which John moved the object NP. The use of the verb "take" likewise presupposes that a

location is established away from which John moved the object NP.

This category necessitates a change in diagram III'. Let PC be a set of propositions have to do with the physical context of the speech act. Then speaker A must ostensibly believe every P in PC in order to use S appropriately.

III''':	speaker A	ostensibly	ϕ
		believes	hearer B believes ψ
			$\left\{ \begin{array}{l} \text{SC} \\ \text{PC} \end{array} \right\}$ is in effect

The presuppositions of social and physical context present a difficulty for the logical definition because the presupposed propositions cannot be derived or stated by simple rules referring to construction types, selectional restrictions or word categories. Yet these presuppositions are inherent in the semantics of sentence and are constant for all users.

The final antecedent condition for an S which the logical notion doesn't take into account is the discourse context, which can affect the meaning of an S. The discourse context can create a presuppositional requirement for a sentence which it does not invariably have. For example, imagine the situation where A₁ says (29) and A₂ answers (30).

(29) S The hamburger patties are burning.

(30) S The spatula is in the drawer.

In this context, (30) presupposes A₂'s belief that the solution to the problem posed by (29) is turning over the patties. Every time A₂, or any other speaker, says (30) it doesn't presuppose that. Thus the discourse context can create a presupposition for an S which is not inherent in the meaning of S alone. Accordingly, diagram II must be changed to the following, where DC stands for discourse context stated in terms of a set of propositions:

II':	(S, DC)	presupposes	III'''
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One of the implications of diagram II' is that any non-sequitur violates a presuppositional requirement of the discourse context.

The discourse context can change the presuppositions of a sentence. All the other types of presupposition discussed involve a requirement a sentence always has that a speaker believe some proposition for the sentence to be uttered appropriately. What varies for the sentences of (11) is the appropriateness for various speakers using them, not their presuppositional requirements (for example,

that cats have minds). If the presuppositions of a sentence were not ordinarily fixed, language would be incomprehensible. It is only when some proposition of the immediate discourse context directly adds (or deletes, as in reductio) a presupposition, as in (29) and (30), that the set of propositions which must be believed by a speaker changes for an S.

Reductio ad absurdum provides an example of the way discourse context can nullify a presupposition requirement. Keenan gives the following example:

- (31) You say that someone in this room loves Mary.
- (32) Well, maybe so.
- (33) But it certainly isn't Fred. (i.e., It certainly isn't Fred who loves Mary.)
- (34) And clearly it isn't John.
- .
- .
- .

Continue in this way until all the people in the room have been enumerated.

- (35) Therefore, no one in this room loves Mary.

Keenan used this example to conclude that "it is reasonable to say that It is John who loves Mary presupposes that Someone loves Mary even though a speaker of the above discourse would not believe the presupposition." (1971, p. 52)

According to the analysis of II' and III''', which has been justified above on other grounds, this example shows not that speakers don't need to believe presupposed propositions but that a discourse context can nullify one of the set of beliefs a sentence presupposes the speaker has. By assuming as true a proposition he believes to be false, the speaker nullifies the requirement that he believe that proposition when he utters a sentence which ordinarily presupposes it. (33) has the presuppositional requirement Someone loves Mary, but the discourse context (31), (32) suspends this requirement.

Another problem pragmatic presupposition clears up is that of the presuppositions of the subject of a sentence.

(36) S Harry hopes John will come.

In this example, Harry, the subject of the sentence, must presuppose

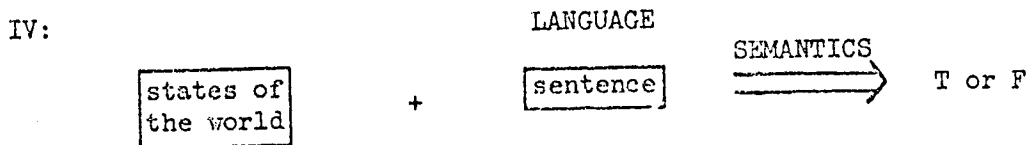
(37) P' John might come. (It is possible that John comes)

Looking at it with the pure semantic definition, the sentence (36) doesn't have that presupposition. That is, the truth of (36) doesn't depend on the truth of (37). However, with the pragmatic definition, we can say that the speaker ostensibly believes of Harry that Harry believes (37).

The pragmatic notion in II' creates the possibility that every fact, every belief of the speaker, every aspect of the context would be incorporated into the set of presuppositions of the use of an S. Is etiquette presupposed? Is the meaning of every word in S presupposed? The question of limiting pragmatic presupposition requires a whole study in itself.

The theoretical bases of the two notions

Pure semantics tries to determine the truth value of a sentence. This focus arises from the philosopher's concern with language as a logical system, a symbolic system which can be employed to discover the truths, especially the logical truths, about the world. Thus, semantics consists of a mapping from sentences to truth values. To know the meaning of a sentence S, says this model, is to know the conditions in the world which would have to hold in order for the sentence to be true.



Note that the speaker and his knowledge and beliefs are completely absent from IV. Language is here represented as an abstract system separate from its users.

Frege (1892) reasoned roughly as follows that we ought to be primarily interested in truth values. A sentence contains a thought (objective content). This thought is the sense of the sentence and its referent is its truth value. In fiction we are concerned only with the sense of sentences. The fact that there is no referent (truth value) for a sentence containing the name "Odysseus" does not impair our ability to understand and appreciate the epic poem. However, ordinarily "a thought loses value for us as soon as we recognize that the referent of one of its parts is missing. We are, therefore,

justified in not being satisfied with the sense of a sentence, and in inquiring also as to its referent. But now why do we want every proper name to have not only a sense, but also a referent? Why is the thought not enough for us? Because, and to the extent that, we are concerned with its truth value..... It is the striving for truth that drives us always to advance from the sense to the referent." (p. 215-216)

In particular, philosophers have been interested in logical truth defined by such relations as entailment. They want to know what has to be true given a sentence seen as a logical formula. Presupposition may be viewed as a relation between two formulas. According to definition (1), given the meaning of the sentence S itself, S and its negation imply S'. States of the world don't alter this relation, as diagram I shows, and thus logical presupposition is seen as affecting a logical truth, namely, the existence of a truth value for S.

Presupposition presents a problem for pure semantics. If meaning depends on truth value, and a failed presupposition causes a sentence not to have a truth value, how does semantics account for the meaningfulness (interpretability) of an S such as (2), whose presupposition fails? Frege accomplishes this by distinguishing the thought from the referent. A thought can have a sense when the sentence embodying it has no truth value. Strawson (1952) defines presupposition as a relation between statements (the statement S presupposes the statement S' when S' is a necessary condition of the truth or falsity of S). A sentence is used to make a statement, and the sentence has meaning, even when S' is false (the presupposition fails). Only the statement S, which the sentence is used to make, has truth value, and when S' is false, only S fails to have a truth value. In Strawson's conception, then, meaning exists over and above truth values, i.e., over and above the relationship either to the world or logical entailment. Keenan, as we have seen, gives such an S a "nonsense value", an account which I argue above does not solve this problem.

Further, Keenan's view raises serious problems because his definition does not accord with traditional logic. Some reference to the negation test is important, but I would like to point out that the negation symbol in (1) cannot be the same as the one in traditional logic. What I will call "linguistic negation" is carried out by a syntactically constant rule which does not have the same effects as logical negation. In logic, $\neg S$ is translated into "It is not the case that S." "It is not the case that the King of France is bald" is consistent with two states of the world.

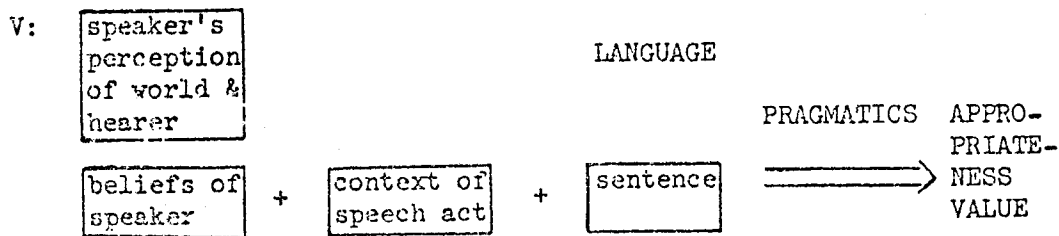
- (i) The King of France exists and he is not bald.
- (ii) There is no King of France.

In Keenan's definition $\neg S$ is translated into "The King of France is not bald" which is interpreted as consistent with only one state of the world, (i) above. If (ii) is true, then $\neg S$ has the nonsense truth value.

In traditional logic S and $\neg S$ exhaust all the possibilities. Thus, (S or $\neg S$) is a necessary truth. But in Keenan's definition, S implies S' and $\neg S$ implies S'. By logical rule, (S or $\neg S$) implies S'. Now (S or $\neg S$) is a necessary truth, thus S' must be a necessary truth and can't be false. But in Keenan's definition S' isn't a necessary truth; if S' is false, S and $\neg S$ have no truth value. Now in traditional logic, every declarative S is either true or false. In order to solve this Keenan has had to create a new logic, the "logic of natural language."

But even with a logic of natural language, Keenan has the serious problem that his definition does not actually give a relation between a sentence and the world, but between two sentences, S and S' (see diagram I above). By limiting his definition to truth "in all possible worlds", he doesn't account for the relation between a sentence and the actual world. But it is only this relation which yields a truth value relevant to semantics, as explained by Frege.

Now pragmatics aims to account for the appropriateness of a particular speech act. It relates the beliefs of a speaker, the context of the speech act and an S to yield an appropriateness value.



Thus, pragmatics tells us when a sentence would and would not be used, a description of ordinary linguistic behavior. Pragmatics is a term which includes semantics; the exact relationship needs further explanation.

Gilbert Harman (1971) suggests that there are three levels of meaning, the most fundamental of which is based on logic. A pragmatic description, which seeks to account for speech acts, presupposes an adequate logical semantics, which describes "what various thoughts are." I interpret Harman to mean that the propositional content of sentences can only be stated in a logically based semantics, while the use of sentences can only be described in a theory of pragmatics.

The claim of this paper is that the phenomenon of presupposition is most generally and adequately described on the pragmatic level. By defining presupposition as a relation between a sentence and a speaker's belief (in the actual world), the true effect of a presupposition on meaning: it is assumed the speaker believes the presupposed proposition P' when he utters S.

NOTES

¹Keenan also uses a term "pragmatic presupposition" which should not be confused with the one in this paper. This one is seen as incorporating logical presupposition rather than being complementary to it.

The following symbols will be used in this paper:

S	sentence
S'	presupposed sentence
P	proposition
P'	presupposed proposition
A	speaker
B	hearer
\neg S	not S

²I am indebted to Enrique Delacruz for suggesting this to me.

³Diagram III includes a set of presupposed propositions because one S can have several presuppositional requirements. For example, "The man regrets that the balloon burst" has an existential, a selectional and a factive presupposition.

REFERENCES

- Chomsky, Noam. 1970. Remarks on nominalization. In Jacobs and Rosenbaum, eds., Readings in English Transformational Grammar, Waltham, Mass., pp. 184-221.
- Delacruz, Enrique. 1972. Doctoral dissertation on presupposition. UCLA, forthcoming.

- Fillmore, Charles J. 1971. Verbs of judging: an exercise in semantic description. In Fillmore and Langendoen, eds., *Studies in Linguistic Semantics*, New York, pp. 272-289.
- Frege, Gottlob. 1892. On sense and reference, transl. Max Black. *Philosophical Review* LVII.3, pp. 207-230.
- Grice, H. P. 19 . . The causal theory of perception. *Proceedings of the Aristotelian Society*, Supplementary 35.
- Harman, Gilbert H. 1971. Three levels of meaning. In Steinberg and Jakobovits, pp. 66-75.
- Horn, Laurence R. 1972. On the semantic properties of logical operators in English. Unpublished doctoral dissertation, UCLA.
- Karttunen, Lauri. 1970. On the semantics of complement sentences. *Papers from the Sixth Regional Meeting of the Chicago Linguistic Society*, pp. 328-339.
- Keenan, Edward L. 1971. Two kinds of presupposition in natural language. In Fillmore and Langendoen, pp. 45-54.
- _____. 1972. On semantically based grammar. *Linguistic Inquiry* III.4, pp. 413-461.
- Kiparsky, Paul and Carol. 1968. Fact. In Steinberg and Jakobovits, pp. 345-369.
- Lakoff, George. 1971. Presupposition and relative well-formedness. In Steinberg and Jakobovits, eds., *Semantics: An Interdisciplinary Reader in Philosophy, Linguistics and Psychology*, Cambridge, England, pp. 329-340.
- McCawley, James D. 1968. The role of semantics in grammar. In Bach and Harms, eds., *Universals in Linguistic Theory*, New York, pp. 125-169.
- Morgan, Jerry L. 1969. On the treatment of presupposition in a transformation grammar. In *Papers from the Fifth Regional Meeting Chicago Linguistic Society*, pp. 167-177.
- Schachter, Jacquelyn C. 1971. Presupposition and counter-factual conditional sentences. Unpublished doctoral dissertation, UCLA.
- Searle, John R. 1969. *Speech Acts*. Cambridge.
- Stalnaker, Robert. 197?. *Presuppositions*. Unpublished ms.
- Strawson, P. F. 1952. *Introduction to Logical Theory*. London, pp. 173-179.