Presupposition in Lexical Analysis and Discourse

by

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Abstract

Recent research in linguistic analysis of presuppositions has provided numerous indications of the role of presupposition in lexical analysis. Still others have argued there is no distinction between the meaning and the presupposition of a word. In this paper I discuss both issues of what presuppositions are related to lexical analysis and what happens to these presuppositions in discourse. Finally, I comment on how this knowledge could be made available to a natural language understanding program.

Working papers are informal papers intended for internal use.

In this paper, I want to consider the presuppositions of a sentence uttered in discourse. I believe and will try to show that finding the presuppositions of a sentence means one must consider the conditions associated with a speech act of a sentence. Those conditions, usually referred to as normal conditions, must be defined for each verb or noun. I will show what happens when the conditions do not hold or are modified in some way by the discourse. In defining the conditions for a speech act, I will be relying on the work of many others who will be mentioned in the next several pages.

Stalnaker (1970) has defined a certain class of presuppositions which he calls pragmatic presupposition in the following way:

> A proposition P is a pragmatic presupposition of a speaker in a given context just in case:
> 1.) The speaker assumes or believes that P.
> 2.) The speaker assumes or believes his audience assumes or believes that P.
> 3.) The speaker assumes or believes that his audience recognizes that he has assumed these things.

I think this is a very general description for the specific assumptions which Searle (1969) has listed as conditions for the use of the verb *promise*. Searle's analysis is significant because it describes a fair number of the facts native speakers rely on when using the verb *promise*. For a computer-based natural language program such facts will be necessary if it is to adequately understand and generate natural language. If Searle's conditions for a speech act verb are pragmatic presuppositions, an analysis of the use of presuppositions is needed for natural language programs.

In this paper, I will be assuming the presuppositions I mention

are pragmatic presuppositions. I am more concerned about the role of pragmatic presupposition because I believe logical presupposition can be subsumed by it. Thus the test for a presupposition being a sentence entailing both the given sentence and its negation is one means of discovering the presupposition, but I will show it does not always reveal the presupposition and in some cases leads us to believe there is none. Furthermore, those linguists and philosophers defining presupposition as logical presupposition hold that the falseness of a presupposition of a sentence implies an incoherent usage of the sentence. I want to consider in this paper cases where the pragmatic presupposition of a sentence may be denied and still permit the sentence to have meaningful use. I will not offer a formal definition of what meaningful is, but instead I will presume that native speakers can judge intuitively about it. I also want to consider what causes a sentence to be considered incoherent in a given context when the presupposition is denied in a certain way.

In constructing the set of normal conditions for use of a word, I hope to provide an indication of how this knowledge could be available to a computer-based natural language understanding program. At various points in this paper, I will comment on computer implementation of this knowledge.

Various linguists and philosophers have indicated what presuppositions are associated with certain words of English and certain functions of those words. Searle's contribution has already been mentioned. Fillmore (1971a, b) provides for lexical entries on

nouns like *criticize* and *accuse*. Karttunen (1973) has described how certain classes of verbs and conjuctions function to filter the presuppositions of complement verbs and clauses of conjunctions. Others have pointed out the presuppositions associated with definite names (Keenan, 1971), adjectives like *only* (Keenan) and *other* (Nash-webber, 1972), factive verbs (Kiparsky and Kiparsky, 1971) and the conjunction *but* (R. Lakoff, 1971). Most of these writers associate such information with the semantics of the language and in some cases with lexical entries of the given words. I share this viewpoint especially because in use of a computer program, I can conceive of a lexical entry as a procedure and hence attain access to different parts of the sentence more easily than in a static dictionary look-up method.

On this view I differ strongly with Wilson (1975) who argues, based on a number of sentences, that there is no distinction between the presuppositional aspect of the semantic structure of a predicate on the one hand and the meaning proper of the predicate on the other. What I want to show is how the presuppositions triggered by lexical entries come into play in context.

In the next several pages, I will describe the various lexical entries for several classes of words. Much of this work is based on those mentioned earlier and in many cases, I will be describing exactly their ideas. The classes I will consider include:

1. nouns
2. verbs
3. definite articles and definite references
4. adjectives
5. conjunctions

There seem to be relatively few nouns which have associated presuppositions. The agrument for the presuppositions of adult, male and human to the word *bachelor* given by Langendoen (1971) states that sentence 1 would be an unusual device for communicating information concerning my neighbor's maturity, species or sex, but not his marital status. By similar agrument one could argue for a particular sex class presupposition to such nouns as *father, mother, aunt,* and *spinster.* Counter arguments to this use of presuppositions have been offered and I will discuss this further in the paper.

(1) My neighbor isn't a bachelor.

In determining the presupposition of nouns preceded by the definite article *the,* or the pronomial adjectives *this, that, these, those,* or proper nouns, one need only be convinced that any definite reference presupposes existence of the referent. Hence

(2) The man-in-the-moon looked down on the earth.
(3) This pen writes very well.
(4) Mortimer told Winnifred all the bad news.

all presuppose existence of their respective proper nouns and definite references. The reader may object to the presupposition which is sentence 5 by claiming that there is no man who is the man-in-the-moon. While I quite agree, it is still the case that a referent exists for "the man-in-the-moon." It is this sense that I am claiming is presupposed. Finally, definite reference of the genitive form as in "John's toy," "my octopus" and "brother of the king" presuppose respectively that John has a toy, I have an octopus and the king has a brother. This kind of presupposition has been pointed out by Keenan.

(5) The man-in-the-moon exists.

The presuppositions of certain adjectives and qualifiers demand attention here. *Other* when used as an adjective in a parallel construction such as *A and other B's* signals the presupposition that A is a B. The difficulty with *other* is the variety of forms the parallel construction can take. Nash-Webber cites these as examples among others:

> (6) Gorse and wormwood, in addition to other reputedly magic herbs, grow in profusion.
> (7) Residents, interns and other clinical specialists are available for consultation.
> (8) Since other sixth graders were allowed to stay up until 10 o'clock, Mary wanted to also.

A constrast which Nash-Webber points out is that inter-sentential use of *other* links the discourse but allows for a kind of exclusion. Thus, according to Nash-Webber, one may talk about "the cat in the hat who came back" and then about "other cats" presupposing all cats but specifically excluding "the cat in the hat" from the discussion of other cats. In such cases the presupposition, which is easy to formulate, that the cat in the hat is a cat is not terribly interesting. What is important to bear in mind is that the presupposition attached to the use of *other* says nothing about reference. Thus when referring to "other cats," presuppositional information says nothing about whether that refers to the cat in the hat or not. This observation means it is straightforward to note the presupposition for the cat in the hat case even though the problem of defining the reference is not. However, a precedure triggered on the lexical entry of *other* in order to associate the presupposition with

the correct set of nouns would rely strongly on knowledge of various grammatical constructions to find that A that is a B in such sentences as 6 or 8.

In contrast to *other* are uses of *all, some, most, few,* and *several.* If any of these is substituted for *other* in sentences 6, 7 or 8, the presuppositional information changes. For *all, several* and *most,* the presuppositions are:

(6a) Gorse and wormwood are not magic herbs.
(7a) Residents and interns are not clinical specialists.
(8a) Mary is not a sixth grader.

The use of *some* and *few* do not cause the presuppositions 6a, 7a 8a or their negations: they are neutral on presuppositions. Since the sentences 9, 10 and 11 do not have presuppositions associated with the qualifier words, it is clear that triggering presuppositional analysis on lexical entries must be a conditional action occurring only in the existence of certain grammatical constructions, such as *in addition to.* In computer-based language systems, this means tight interaction between semantic and syntax, the conclusion of Winograd (1971) for a more general use of natural language. I do not think analysis of presuppositions for *other* is as grim as Nash-Webber has indicated. While it is true that existing parsers and semantics systems cannot analyze these, little research has been done at present on the role of grammatical constructions in semantics. Such research, while non-trivial, is not impossible and could provide the needed additional step to handle presuppositions in constructions using *other.*

(9) Most boys eat their beans.
(10) All girls are afraid of spiders.

(11) Several children need better nuitritional care.

Another adjective causing a sentence to have a presupposition is *only*. Examples of this are sentences 12 and 13 which have presuppositions 12a and 13a respectively.

(12) Only Jane danced with Bill last night.
(12a) Jane danced with Bill last night.
(13) The teacher only gave an F to Frank.
(13a) The teacher gave an F to Frank.

The formation of the presupposition is straightforward for this adjective and I can find no use of *only* that is different (I am excluding the use of *only if* since that is a form of *if...then* inversion.).

There already has been a great deal written, often with conflicting views, about the presuppositions of sentences which have verbs taking a complement. The approach taken by Fillmore on verbs of judging is to analyze who the judge and defendent are and what the situation is and to determine what presuppositions there are about any of these. Thus in 14 the presupposition is only that the situation of writing an obscene letter is bad since *accuse* triggers that presupposition. On the other hand, in 15, Bill is presupposed responsible for the writing as well as presupposing that the situation of writing the letter is bad because *criticize* triggers both of these.

(14) John accused Bill of writing an obscene letter.
(15) John criticized Bill for writing an obscene letter.

The approach is useful for two reasons. For one, it extends the analysis of speech acts begun by Searle, and secondly it allows considerations of the presuppositions of verbs that were said to block

presuppositions of the complement sentences, called "plugs" by Karttunen. Fillmore's treatment maintains Karttunen's observations about plugs but shows that the plug verbs do have associated presuppositions of other types. Fillmore and Karttunen disagree on the presuppositions of *criticize* since Karttunen believes it is a plug and Fillmore's examples show that it doesn't block all presuppositions of the complement sentence, but for this particular verb I think Karttunen is just mistaken.

I also want to make some remarks about Karttunen's "hole" verbs which he believes include *know, reget, understand, surprise, be significant, begin, stop, continue, manage, avoid, be able, be possible, force, prevent, hesitate, seem, be probable* and the factives of Kiparsky and Kiparsky. A hole works such that all the presuppositions of the complement sentence are presuppositions of the main sentence. On careful analysis which I will reproduce below, I believe there are two kinds of holes: takers and let-thru holes, i.e., those that take the complement sentence as a presupposition and those that let-thru only the presuppositions of the complement sentence. For example, in sentence 16, since *realize* is a taker, one of the presuppositions is that John's wife was being unfaithful; while in 17, since *be possible* is a let-thru hole, this presupposition does not hold, but the presupposition that John has a wife does.

(16) John realized his wife was being unfaithful.
(17) It was possible that John's wife was being unfaithful.

The class of let-thru verbs includes: *manage, hesitate, be able, seem, doubt, suspect, fear, think, be possible,* and *be probable.* To

analyze these verbs, I will consider sentences that use these verbs. In each case I have found it useful to try to compose the kind of list of conditions which Searle provides for *promise*. I won't reproduce all of these, but hint at the important points in them.

MANAGE--Sentence 18 does not have the presupposition 18a, but only the presuppositions of 18a which include 18b. There is also a presupposition from *the* about existence, but these referent presuppositions will not be listed unless they are the only ones. My observation about 18b seems plausible because *manage* means "to bring about" hence the truth of 18 implies the truth of 18a but does not presuppose it. This analysis seems to agree with that of Joshi and Weischedel (1973).

> (18) We managed to finish the painting.
> (18a) We finished the painting.
> (18b) We worked on the painting.

HESITATE--Sentence 19 does not presuppose 19a, but it does presuppose what 19a does, namely 19b. Here I seem to categorically disagree with Karttunen, but that is due to the fact that *hesitate to do X* for me suggests:

> a. Doer of hesitation considers doing action X.
> b. Doer of hesitation is not currectly doing X.
> c. After consideration, doer may or may not do X.

With this description I find it hard to understand why "Fred hesitated to stop beating his wife" presupposes "Fred stopped beating his wife."

> (19) Harry hesitated beating his wife.
> (19a) Harry beat his wife.
> (19b) Harry has a wife.

BE ABLE--Sentence 20 does not presuppose 20a since *to be able*

means potential for action but no commitment to an action. I should point out there is a second use of *be able* which only in the past tense presupposes the complement sentence. Thus one reading of 20b presupposes 20a.

(20) Tom is able to stop Bill from moving the boxes.
(20a) Tom stopped Bill from moving the boxes.
(20b) Tom was able to stop Bill from moving the boxes.

SEEM--In sentence 21 there is no presupposition that "Henry stopped wanting to eat artichokes" although *seems* functions in such a manner that the hearer expects this to be the case with further evidence. Sentence 21 does presuppose 21a.

(21) Poor Henry seemed to stop wanting to eat artichokes.
(21a) Poor Henry wanted to eat artichokes.

DOUBT--In general *doubt* functions to clue the reader to expect the negation of the complement sentence to be true. Thus in 22, the only presuppositions are 22a and 22b, and an expectation that 22c is true is created, but is not presupposed.

(22) I doubt you have the frog in your pocket.
(22a) A frog exists.
(22b) You have a pocket.
(22c) You don't have the frog in your pocket.

SUSPECT, FEAR, BE POSSIBLE, BE PROBABLE--these four verbs function like *doubt*, but in contrast the expectation is the truth of the complement sentence. Thus in 23, the presuppositions are 23a and 23b, not 23c. Similarly in 24, 24a but not 24b.

(23) John (suspects, fears) that he understood his wife's mutterings.
(23a) John's wife muttered something.
(23b) John has a wife.
(23c) John understood his wife's mutterings.
(24) It is (possible, probable) that Hilda committed suicide.

(24a) Hilda is dead.
(24b) Hilda commited suicide.

Now let me consider briefly the takers which can be sub-divided into two groups, the positive and the negative takers. Positive takers include *realize, criticize, persuade, reget, surprise, be obvious, start, be significant, stop, continue* and perhaps *know* which I will say more about later. Negative takers include *suppose, assume, pretend, prevent, avoid*, and possibly *dream* which I also have further comments on. The negative takers presuppose the negation of the complement sentence and hence their name. Sentences like 54 and 55 which presuppose 54a and 55a respectively exemplify the negative takers.

> (54) Corrupt administration prevented the governor from running for president.
> (54a) The governor did not run for president.
> (55) The teacher assumed the students had done their homework.
> (55a) The students had not done their homework.

For most of these verbs, there are additional presuppositions associated with them. For example, *criticze* by Fillmore's (1971b) account has a presupposition that the situation being criticized is bad. *Start* has a presupposition that previous to starting whatever the action or event is, the starter was not doing that action or participating in the event. Similarly, *continue* has a presupposition about previous time and *stop* has a presupposition about the action taking place before the stopping.

Before natural language programs can use this information, the presuppositions which are conditions for the use of these verbs must be catalogued. For some verbs, like *dream*, this analysis will be difficult as is evidenced by the work of Shanon (1975) who has pointed

out a number of conditions about how one reports dreams linguistically.
He states:

> The state of affairs within the dream world is assumed not be
> different from the one in the real world unless otherwise
> specified. More specifically, whenever there is factual
> correspondence between the two worlds, one assumes that in the
> real world the speaker knows the facts which are reported as part
> of the dream. In order to indicate that this is not the case, the
> reporter of the dream should include the explicit statement of
> knowledge in the dream report.

Shanon's analysis not only tells us that there are presuppositions
associated with the use of *dream*, but also how these presuppositions
relate to the speaker's and the hearer's knowledge about the world.
This sort of detailed analysis can replace the straight categorical
explanation above.

The verb *know* requires attention because it is used in sentences
like 25 and 26. To my way of thinking, *know* cannot be used unless the
complement sentence is fact. Hence John doesn't know about Nixon's
honesty; he only believes Nixon is honest. Red Riding Hood only knows
she is going to grandmother's once she actually starts on the journey.
The problem with knowing, as many have stated, is we often use *know* for
what we believe are facts. Thus in the 1300's people knew the earth
was flat. We could argue that in such cases *know* has been used
wrongly, but this happens so often such analysis would fail to predict
the actual use of language by native speakers. Instead it can be said
that *know* must be used relative to a world model and can be used
correctly or not depending on that model. Thus my comments on John and
Red Riding Hood's knowing are based on my current world view. I will
discuss the case of *know* further in the third section after some

additional groundwork has been laid.

(25) John knows that Nixon is an honest man.
(26) Red Riding Hood knows she is going to her grandmother's house.

A last remark I want to make about verbs has to do with non-complement verbs which some linguists (Langendoen) have claimed have presuppositions. Such verbs include, for example, *clean*, *open* and *shut*. *Clean* presupposes that whatever is being cleaned is dirty, while *open* that it is not open, and *shut* that it is not shut. Now this seems reasonable, but the presupposition negation test fails. Thus in 27, the bathroom might not have been cleaned because it already was clean, or in 28 the door not opened because it may have been open. Further, 29 may be true because Sarah is eccentric and cleans even clean windows.

(27) Mary didn't clean the bathroom.
(28) Smith didn't open the door.
(29) Sarah cleaned the windows.

My answer to this argument is one I will make again in this paper. The presuppositions here do hold: they are the normality conditions under which the verb is used. What I believe about presuppositions is that they can become the topic of discourse. Thus 27 could be followed either by 30 which supports the presupposition of *clean* or by 31 which denies it.

(30) Mary was too lazy to do her work.
(31) It wasn't dirty.

In either of the cases above, sentence 27 provides the reader with a situation in the world and some statements about the world (Mary exists, the bathroom exists, the bathroom is dirty). The readers must

bring to bear their semantic knowledge about the meaning of *clean* and its presupposition, as well as what the actors and objects of *clean* refer to. Using these it is posssible to interpret 27 and obtain possible presupposition 27a. They must also rely on "pragmatic" or "general" knowledge for some additional relevant information like knowing Mary is too lazy to clean anything or the bathroom isn't dirty. These two kinds of knowledge result in an overall picture of the world in which presuppositions may or may not be true. The difficulty in the semantic-general knowledge distinction is that much general knowledge comes from sentences and from using semantic knowledge to interpret them. Thus general knowledge like Mary's laziness may come via a set of sentences, such as 30, which are interpreted by the reader and become part of the reader's general knowledge. I think the confusion surrounding using semantic knowledge and getting information that may become pragmatic knowledge has caused some linguists to believe that semantic analysis can produce no presuppositions.

The last class of words I want to discuss is conjunctions. Karttunen (1973) has sketched out several criteria on the logical conjunctions *if...then, or,* and *and.* I have nothing new to add about the role of *if..then* or *and,* but due to some examples of Wilson, I think there is an additional role which *or* can play, which is to allow the second clause to deny the presuppositions of the first. Thus 32, 33, and 34, all of which are taken from Wilson's article "Presupposition, Assertion and Lexical Items," act in this manner. It was Wilson's intention to use these sentences to show that Karttunen's

approach on logical connectives is wrong. I think my observation offers an alternative that is just as reasonable. Note that in the use of *or*, the whole clause or the presupposition of the clause can do the denying.

(32) Your teacher will be a bachelor or a spinster.
(33) Either the victim was a bachelor or no one got killed at all.
(34) Either John regrets that Bill left or Bill didn't leave.

In a similar manner, one of the uses of the conjunction *but* can be to deny the presupposition of the previous clause as Robin Lakoff has pointed out. Thus 35 (also from Wilson), which has presupposition 35a for the first clause and 35b for the second clause, uses *but* to show second clause is denying the presupposition 35a. Interestingly, another use of *but* is to emphasize the presupposition as in 36.

(35) If Bill stopped smoking at midnight I'll be surprised, but if he started smoking at midnight, I'll be amazed.
(35a) Bill was smoking before midnight.
(35b) Bill was smoking after midnight.
(36) I regret your leaving town, but you are leaving town.

The relative conjunction *while* also evokes presuppositions. One use of *while*, according to Robin Lakoff, is in semantic opposition for which *but* is also used. Thus *while* can be used to deny presuppositions just as *but* can do. The sentences below demonstrate uses of *while*.

(37) John is rich (while, but) Bill is poor.
(38) John regretted that Mary was dead (while, but) Bill regetted that Mary was alive.

The purpose of this section has been twofold. One purpose is to make clear what we currently know about presuppositional analysis based on lexical entries. The second purpose is to show how lexical entries can be used in determining the presupposition of a single sentence. I

would like to turn my attention now to discourse and consider what happens to the presuppositions which are set up by lexical analysis.

The following paragraph I is intended to point out one of the ways in which presupposition can be used in discourse.

> I. Fred, a notorious liar, wasn't married. He decided to go see a psychiatrist, Sally, for counselling about his habit of lying. But Fred couldn't help telling even bigger lies, so he told Sally he had been beating his wife and needed counselling to stop. Sally counselled Fred for many months on his wife beating, knowing that Fred would eventually triumph over his problem. Finally the day arrived when Fred came beaming into Sally's office. Just from Fred's expression, Sally knew Fred had stopped beating his wife.

An observation to make about the last sentence of I is that it has the presuppositions 39 and 40. These presuppositions are triggered by the complement sentence of the predicate *know*. Now the reader is aware from the first part of I that 39 and 40 are false. On most philosophical and linguistic views, this means that the last sentence is incoherent, but I think the reader will agree it is perfectly coherent in I. The state of the world is complex in discourse, so truth and falsity are relative in it. Fred, who doesn't beat wives and has no wife, has caused Sally to perceive the world such that Fred beats his wife and wishes to stop. To the reader, who knows the world in which both Fred and Sally are acting, the important information of the last sentence is what Sally knows from Fred's beaming face; the background information are presuppositions 39 and 40. The fact that 39 and 40 are false from the reader's view do not hinder the communication about Sally at all, but instead the use of *know* makes clear that Sally takes 39 and 40 as fact. We can begin to understand from I that

presuppositions exist relative to a point of view of the world. While researchers in Artificial Intelligence have been aware of the complexity of states of the world and points of view being relative to it (McDermott, 1974, is one such example), the impact of this idea is yet to be felt in analysis of presupposition.

(39) Fred has a wife.
(40) Fred has beaten his wife.

Let us consider the idea that presuppositions exist relative to a point of view further with another example, case II below.

II. Suppose that there are two unicorns A and B in some room and that unicorn A is standing in a corner of the room while unicorn B lies in the middle of it. How do we get unicorn A to sit next to his fellow unicorn? That's easy. I need only ask a virgin to sit in the middle of the room and coax the unicorn to put its head in her lap for as everyone knows unicorns follow only the commands of virgins.

Does the last sentence of II presuppose the existence of a unicorn since the "the" reference in II presupposes the existence of a unicorn? Or do we say unicorns can't have a referent since they don't exist and hence we are using definite reference in a special way here? It seems clear that the existence of unicorns is assumed in the *suppose* of the first sentence of II. The use of *suppose* sets up a view in which unicorns do exist. Once this is done, the unicorn's existence can be presupposed by other sentences which make definite references to unicorns. We need no special use of definite reference but what we do need is the background assumption that unicorns exist. One purpose of dialogue, I believe, is to make these assumptions, and then proceed using them as backgound conditions for other events. This is the role of presupposition in both I and II.

The situation in II is even more complicated actually. *Suppose* has a presupposition which is the negation of the complement sentence. Thus the first sentence of II presupposes that there really aren't any unicorns in the room. It begins to sound as if we believe and don't believe there are unicorns, which would be hard to assert. What we have here are two contexts, one in which unicorns don't exist and one in which they do. The former, which is the normal state of my world, is set aside by the assumption of *suppose*, but the reader is made aware of my normal view of the world because of the presuppositions evoked by *suppose*.

Sometimes a discourse may be used to doubt the presuppositions of sentences of the dialogue. Consider case III below.

III. Frieda and Alf had been married for 20 years. During all that time Frieda did the cooking. That Frieda liked to cook wasn't obvious to her husband, for all the meals she had ever cooked were either undercooked or burned or prepared only with a great deal of muttering and disgust.

The presupposition of the last sentence of III is 41. However, the discourse is serving the purpose of doubting this presupposition by evidence of someone not liking to cook. Presupposition 41 is never stated as being false, but indications are given that lead us to believe that this is so.

(41) Frieda liked to cook.

It may be worthwhile to point out that grammatical construction plays a part in producing doubt about the presupposition. By using the negative form of the predicate of the last sentence and using a relative clause like *because* that signals reason for the truth of the

main clause, we get the attempt to deny the presupposition of the complement sentence. I point this out because the same sentence with *wasn't* replace by *was* performs very differently in this discourse.

In case III, a second type of presupposition is being relied on as well. In III, we have a set of facts about the way someone has been cooking. While it is not stated, most people in U.S. culture presume that these fact indicate not liking to cook, which can by summed up by 42. The presupposition, however, is not evoked by any of the lexical entries of the various words in the discourse. Such presuppositions are often called pragmatic presuppositions to distinguish them from presuppositions signalled by semantics. I think this usage is unfortunate, for both presuppositions signalled by semantics and presuppositions like 42 generated from a reader's general knowledge are described by Stalnaker's definition of pragmatic presupposition. Hence I will refer to presuppositions triggered by semantics as semantically based presuppositions and presuppositions based on general knowledge of the world as general knowledge presuppositions.

> (42) People who undercook food or overcook it and grumble while cooking probably don't like to cook.

Presuppositions cannot only be doubted but asserted. Consider IV, a variation of III.

> IV. Frieda and Alf had been married for 20 years. During all that time Frieda did the cooking. That Frieda liked to cook wasn't obvious to her husband, but he had never been in the kitchen to see how she smiled when she cooked potatoes, tasted sauces and decorated desserts. In fact Alf was a very unobservent fellow.

Again in IV, we start off with presupposition 41 and a construction

which doubts it via the negation of *be obvious*. The use of *but*, as I have pointed out, can emphasize a presupposition as happens here. Another general knowledge presupposition about indications of liking to cook supports presupposition 41.

An additional comment can be made about presuppositions here. In neither III or IV can the reader be assumed to have known anything about Frieda's cooking likes before reading the paragraphs. Presupposition 41 is triggered by the use of certain predicates and it has a pre-determined true value. As we have seen, this value can be denied or asserted in discourse. That presupposition 41 was not known before the discourse is one important difference between semantically triggered and general knowledge presuppositions.

I want to consider one other case of the use of presupposition in discourse. The idea for this paragraph comes from Wilson who believes the presuppositions of sentence 43 will make wrong predictions about the speech act content of that command since in the situation where all teachers are known to be bachelors or spinsters, 36 would be used tell Jemima that Bill's teacher is a male.

(43) Point out to Jemima that Bill's teacher is a bachelor.

In case V, I have written a discourse which describes this situation. I have avoided using exactly sentence 43 because *point out* like *tell* and *explain* are plugs. Instead I have used a sentence with a taker predicate and I hope the sentence performs that same communication purposes.

> V. All of the teachers in Bill's school are either bachelors or spinsters. Jemima knew that Bill's mother would object if

Bill's teacher weren't a bachelor. Since Bill's mother hadn't objected, Jemima realized that Bill's teacher was a male.

As I have already pointed out, the use of *or* in the first sentence denies the presupposition of adult and male for *bachelor*. In this manner, the presupposition about the sex and maturity of Bill's teacher is questioned. It isn't until the last sentence that the question is resolved with another sentence presupposing that Bill's teacher is adult and male. This presupposition re-asserts one of the presuppositions triggered earlier in the discourse.

I have tried to show that a presupposition can be asserted, doubted or re-asserted in discourse, but now I want to point out one way in which a presupposition cannot be used. Since a presupposition has a pre-determined value of true, no sentence A can presuppose another sentence B which denies a fact stated in the discourse unless sentence B is denied in the discourse. Sentences which defy this rule are incoherent in context as case VI shows.

VI. Mary went into the house and left the door open for Bill who was blind. Bill got the front steps and wanted Mary to open the door. Mary came and opened it.

As I have indicated, *open* presupposes that whatever is to be opened is not open. In VI, we are told the door is open and then the last sentence presupposes that the door is shut. The constraint on presuppositions is violated and hence the last sentence is incoherent in the discourse.

When I began this paper, I hoped to be able to describe not only exactly what role certain words played in causing a sentence to have presuppositions, but also to be able to describe by a set of rules

exactly how to find what was happening to the semantically based presuppositions in a discourse. While I think I have succeeded in the former task, I haven't at the latter one. Determining how a person's viewpoint is constructed, which played a part in the presuppositions in I and II, is not an easy task, and more research is necessary before this is adequately described. In cases III, IV and V, I have shown how specific constructions can cause a presupposition to be doubted and in IV and V to be re-asserted. However, there are most likely many more constructions that can be used to do this.

I want to mention two more ways this paper is not a complete discussion of presupposition in natural language. First I have said little about the role of tense and mood in presupposition. This has significance since the tenses of the presuppositions 44a and 45a vary in sentences 44 and 45. As I have noted earlier, verbs like *be able* can have certain presuppositions only in past tense. We have seen many sentences in indicative mood with presupppositions also indicative mood. Sentence 46 which is in the subjunctive presupposes sentence 46a, also in subjunctive. This suggests that mood is the same in the sentence and its presupposition. Whether this is indeed the case, needs to be studied further. Note for sentence 46 that *chase* has the presupposition that the thing being chased is running.

(44) Roger opened the door.
(44a) The door was closed.
(45) Roger will open the door.
(45a) The door is closed.
(46) John may chase Henry down the street.
(46a) Henry may run down the street.

Another example of tense based presuppositions are sentences 47

and 48. McCawley (1971) has pointed out that 47 presupposes the exhibit

still going on while 48 presupposes that the exhibit has closed.

Another case of presupposition, shown in 49, is specialized to the past

progressive form *used to X* where X is a verb. The presupposition is

that the doer of X no longer does these things.

    (47) Have you seen the Monet exhibit?
    (48) Did you see the Monet exhibit?
    (49) I used to go shopping on Wednesday.

Secondly I have not considered the presuppositional content of

sentences with special stress patterns like 50-53. It appears that

stress can change all the presuppositions and add new ones too.

    (50) JOHN called MARY a virgin and then SHE insulted HIM.
        (Lakoff, 1971)
    (51) Bill likes Harry, but HE can tolerate virtually ANYONE.
    (52) Bill likes Harry, but he can TOLERATE virtually anyone.
    (53) I didn't clean the BATHROOM: I cleaned the KITCHEN.
        (Wilson, 1975)

In conclusion, in this paper I have discussed a number of

different issues about the presuppositions of a sentence. First I have

argued for associating one type of presupposition with the lexical

entry of a word in language. In some cases like *clean, criticize,*

blame, bachelor, only and *the,* I have pointed out words which function

in special ways in relation to presuppositions. In other cases,

complement verbs, I have pointed out how a particular class of these

performs. Many of these verbs have specific presuppositions associate

with them in the way that *blame* and *stop* do, but I have not described

them in detail. I have also indicated some of the ways conjunctions

function in relation to presupposition. Lastly I have presented a

number of cases of discourse being used to state, deny or emphasize

presuppositions and I've indicated an upper limit on the manner in which this can be done. Clearly a natural language understanding program will need to catalogue the ways in which presupposition can be used in discourse or be able to construct this knowledge from more general knowledge about grammatical constructions used in discourse.

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