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SCHACHTER, Jacquelyn Charman, 1936-
PRESUPPOSITION AND COUNTERFACTUAL CONDITIONAL
SENTENCES.

University of California, Los Angeles, Ph.D.,
1971
Language and Literature, linguistics

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Presupposition and Counterfactual Conditional Sentences

A dissertation submitted in partial satisfaction of the requirements for the degree of Doctor of Philosophy in Linguistics

by

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1971
TO

LESLIE AND JANA

WITH LOVE
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Acknowledgements

I wish to make known my debt to Barbara Hall Partee, Chairman of my doctoral committee. I am particularly grateful for her interest in bridging the gap between linguistics and philosophy and her encouragement and guidance to me in my attempt to do the same. If this work contains any clarity with regard to the philosophers, much of it is due to her probing questions to me. She has patiently pulled me out of many logical muddles.

I would also like to make known my gratitude to Sandra Thompson whose valuable criticisms have contributed a good deal to the worth of this dissertation.

In addition, I owe a general debt to Robert Stockwell for stimulating lectures on syntactic theory and Keith Gunderson and Charles Chastain for making available to me their insights into language. Thanks are due also to Vicki Fromkin whose enthusiasm and encouragement were always available to me.

I owe most to my husband, Paul Schachter. During the writing of this dissertation, he not only gave me wholeheartedly his criticisms, comments, suggestions from which my dissertation benefited, but also dinners from which I benefited. His patience and encouragement were
a great stimulus.

I want to give special thanks to my Mother, Mrs. Louis Foutz, who typed this dissertation for me. It was a job far above the normal bounds of maternal duty.
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ABSTRACT OF THE DISSERTATION

Presupposition and
Counterfactual Conditional Sentences

by

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Doctor of Philosophy in Linguistics

University of California, Los Angeles, 1971

Professor Barbara H. Partee, Chairman

Two semantic phenomena are investigated: the relation called presupposition and the kind of conditional sentence called counterfactual. Earlier discussions of these phenomena by both philosophers and linguists are reviewed. It is found that a perceptive view of presupposition is difficult without a prior knowledge of entailment. The advantages and disadvantages of various definitions of presupposition and entailment are discussed. The uses which some linguists make of the terms presupposition and entailment are studied and the ways in which these uses diverge from the definitions proposed by the philosophers are pointed out.
The question is asked: Do counterfactuals presuppose? The conclusion is that no judgement can be made about whether counterfactuals presuppose the negation of their antecedents; but it is pointed out that in some counterfactuals the consequent presupposes the antecedent. Whether or not the consequent presupposes the antecedent affects the truth value of the consequent.

It is shown that the grammatical and the semantic characterizations of counterfactuals are not coextensive. Semantically, counterfactuals and a group of conditionals called hypotheticals comprise the class of imaginative conditionals. The imaginative conditionals and the future simple conditional group comprise the class of unreality conditionals. Grammatically, the counterfactuals cut across two classes, the past subjunctive and the present subjunctive. A syntactic analysis of the unreality conditionals is proposed which accounts in a simple way for the surface structure peculiarities of all unreality conditionals. Several syntactic constructions indicating unreality are pointed out and suggestions are made as to how their analyses might be related to the one proposed for unreality conditionals.
Chapter 1
Presupposition

Introduction

The term presupposition is currently being used by linguists in many ways, some of which bear little relation to one another. In this chapter, we shall explore and evaluate various definitions and uses of presupposition: first as certain philosophers have viewed it, and second as it has been viewed by some linguists. It is found that in trying to clarify the term, it is impossible to avoid the study of other concepts, variously called entailment, implication, logical consequence, etc. No attempt was made to produce a comprehensive study of the writings in these areas. The philosophers and linguists discussed in this chapter are chosen as representatives of particular points of view. Finally, a new basis for defining presupposition is proposed.

1. Some Philosophers on Presupposition

The term presupposition as it usually is thought of today probably derives from the works of Gottlob Frege, who used it in a discussion of proper names and definite descriptions. He was concerned with the conditions
under which one could say that sentences in which proper names and definite descriptions are used can be said to assert. 2 He said that if a sentence asserts anything, then the proper name or definite description in the sentence must have reference, i.e., that there must exist the thing denoted by the name or description. In his words, "If anything is asserted, there is always an obvious presupposition that the simple or compound proper names used have reference." (1952, p.69). So in the sentence

1.1. Kepler died in misery

a presupposition is that there was someone named "Kepler."

And in

2. He who discovered the elliptical form of the planetary orbits died in misery.

the presupposition is that there was somebody who discovered the elliptical form of the planetary orbits.

According to Frege, a sentence must have reference in order to be wholly meaningful, since he counts reference as part of meaning. Without reference, a sentence could not be an assertion, and therefore could be neither true nor false. Therefore he claims that when the presuppositions of (1) and (2) do not hold, then no assertions can be made because (1) and (2) have no reference.
This view stands in opposition to that of Bertrand Russell who, in his Theory of Descriptions, makes the claim that an assertion about "the so-and-so" implies the assertion that "the so-and-so" exists. He says that a sentence like

3. The King of France is wise

is not to be interpreted as a simple subject-predicate sentence, but is really to be interpreted as the existential statement:

4. There is a person of whom it is true that he is the King of France, and he is wise.

With this interpretation, if there is no King of France, then the sentence is merely false.

In order to clarify the difference in views between Frege and Russell, Max Black (1962) has labeled assertions made by using sentences like (1), (2), (3) primary assertions. They are sentences using proper names or definite descriptions as subject. Secondary assertions are the corresponding existential assertions:

1a. Someone named "Kepler" existed

2a. There was someone that discovered the elliptical form of the planetary orbits

3a. There is a person of whom it is true that he is the King of France.

Russell claims that these secondary assertions are implied with corresponding primary assertions. Frege
claims they are not implied by, nor are they part of, the meaning of the corresponding primary assertions. For Frege, a presupposition is something that either is the case or is not the case. It is not an assertion, although of course there will always be a corresponding assertion to the effect that the presupposition is satisfied. He says that if the secondary assertion were part of the meaning of the primary assertion, then the negation of the primary assertion would have to be (using sentence (1) as an example)

5. Either Kepler did not die in misery or the name "Kepler" has no reference.

Russell sees the question of negation of primary assertions a little differently. He claims that the negation is ambiguous, depending on whether the negation holds over the whole sentence or just within the predicate. We can exemplify the ambiguity as follows:

6a. (X is not wise)
   where X = the King of France

6b. not (X is wise)
   where X = the King of France

The differences in analysis here lead, as we have seen, to differences with regard to the assignment of truth values to primary assertions. Frege and Russell agree that when the secondary assertion is true (in Frege's terms when the presuppositions hold) then the primary assertion has truth value. When the secondary
assertion is false (when the presuppositions don't hold), then Russell says the primary assertion is false. Frege says there is no primary assertion because one condition for an assertion, that it have reference, fails. He would have to conclude that the sentence is meaningless.

Russell's analysis is more cumbersome and less intuitively satisfying. But it does provide a way of accounting for sentences which don't refer. They are just false. Frege's analysis, though more intuitively satisfying, commits one to the claim that sentences which don't refer are meaningless. This is a conclusion that many are unwilling to draw, including Frege himself. 3

P. F. Strawson was apparently the first to define and use the term presupposition in a technical sense. He was in disagreement with Russell's Theory of Descriptions and attempted to replace that model with one that comes closer to reflecting ordinary language use. His definition of presupposition was part of that attempt. He first distinguished between sentences and statements, not by defining them, but by illustrating the uses he makes of the terms. He says, "we cannot identify that which is true or false (the statement) with the sentence used in making it; for the same sentence may be used to make quite different statements...a particular
statement is identified not only by reference to the words used, but also by reference to the circumstances in which they are used, and sometimes to the identity of the person using them."⁴ (Strawson, 1967, pg.4). (It seems fairly safe to equate Strawson's statement with Frege and Russell's assertion. Nothing that Strawson says contradicts this.) Strawson says that statements with proper names and definite descriptions in them presuppose the truth of certain other statements. He defines presupposition in the following manner: "S presupposes S' is defined as follows: 'The truth of S' is a necessary condition for the truth of S'"(1952, pg.175). If the presupposition does not hold, the statement has no truth value but is still meaningful. So the sentence

7. The King of France is bald

can be used to make a true statement if there is a King of France and if he is bald. It can be used to make a false statement if there is a King of France and he is not bald. And it can be used to make a meaningful statement with no truth value, a "spurious statement," if there is no King of France.

Although Strawson doesn't explicitly disagree with Frege (as he does with Russell), he certainly comes to different conclusions. They are alike in claiming assertions with definite descriptions and proper
names as subjects presuppose. But in the case where the presuppositions fail, Frege concludes that no statement (assertion) can be made, while Strawson argues that the sentences can still be used to make a statement (assertion), although one without truth value. He says that there are meaningful statements (assertions) which have no truth value.

Another difference between them is that for Frege a presupposition is a state of affairs that holds while Strawson claims that what is presupposed is the true sentence describing the state of affairs that holds. So for him, presupposition is a relation between sentences, and for Frege it is a relation between a sentence and the world. J. L. Austin's definition of presupposition indicates that he also considers it to be a relation between a sentence and the world, and not a relation between sentences. (1955)

It is not clear to me why Strawson wants to consider presupposition to be a relation between sentences, but I think it is a mistake to assume that this is the case without any justification. Strawson has substituted a description of a state of affairs, viz., the sentence, for the state of affairs itself. To say that presupposition is a relation between sentences is, in my view, to remove it from the sphere of reference and to place it in the sphere of meaning, unless his definitions of
these are not the ones I'm familiar with. This, as we shall see, creates some problems. One problem is that of discovering just what assertion any particular assertion presupposes. I can imagine that there might well be several corresponding assertions to the effect that a particular presupposition is satisfied, and the problem of which assertion should be called the presupposition of another assertion is not obvious. Take the sentence:

8. Kepler died in misery.

There are several sentences which describe the presupposition of that sentence in more or less satisfactory terms.

8a. There was someone whose name was Kepler.
8b. There was someone who was called Kepler.
8c. Kepler is the name of a person who existed at one time.

Perhaps he would say that (8a), (8b), (8c) are all presupposed when one asserts (8). But as far as Strawson is concerned, this question remains to be answered.

So far we have seen three different approaches to the problem of how best to account for sentences with definite descriptions and proper names, when they fail to refer. We take three approaches to be fairly representative of the philosophic thinking in this area. Other analyses seem to be variations of these themes.
2. Some Philosophers on Entailment

Philosophic discussions of presupposition almost invariably involve the discussion of the concept of entailment. Presupposition is either based on entailment or contrasted with it. Failure to become sufficiently aware of the differences between presupposition and entailment has led to a good deal of confusion among linguists. An added complication is the fact that the term implication is often, though not always, used synonymously with entailment. In addition, the terms logical inference and logical consequence are used by some (eg. Reichenbach with logical inference and Keenan with logical consequence) to discuss the same concepts.

A good discussion of entailment can be found in Hughes and Creswell's book on modal logic. (1968) They define entailment (p → q) as \( \neg M(\alpha \land \neg \beta) \), "It is not possible that alpha and not beta," calling this interpretation strict implication. They go on to make an interesting argument as to why for modal logic, this should be the interpretation of entailment. They claim that no one denies that "p and \( \neg q \)" being impossible is a necessary condition of q's deduceability from p, but that some have claimed that in order to deduce q from p there must be some connection of meaning between p and q. To Hughes and Creswell, this meaning requirement is an unnecessary
one which complicates an otherwise clear and workable logical system. One result is that they are willing to accept the so-called paradoxes of strict implication, (which they claim are found even in the weakest modal systems), in order to maintain other principles they consider more important. They can do this because they make no claim to be accounting for natural language. Some of the theorems which lead to paradoxes are (given \( M \) as the sign for "possibility"and \( L \) as the sign for "necessity"):

(i) \((\neg Mp)\rightarrow (p \rightarrow q)\) Any proposition can be deduced from any logically impossible proposition. For example:

9. 'Black cats are not black' entails 'I lost my hanky'.

(ii) \((Lp)\rightarrow (q \rightarrow p)\) Every necessary proposition can be deduced from any proposition. So:

10. 'Nixon is the President' entails 'Black cats are black'.

Another result is that they are willing to accept the following as perfectly normal instances of strict implication, because of their unwillingness to accept this "meaning connection" mentioned earlier.

11. '2 times 2 is 5' entails 'Nixon will be reelected'.

12. 'My cats like cottage cheese' entails 'Butter melts at \(150^\circ F\)'.

Sentences like these, while acceptable to many logicians as examples of entailment, would not be acceptable to
those semanticists who insist that entailment be based at least in part on the aforementioned meaning connection. The difficulty, of course, is that of formalizing this meaning.

I would like to find clear evidence that Strawson and Austin are among those philosophers who, unlike Hughes and Creswell, hold that there must be a meaning connection between two propositions in order for one to be said to entail another. I think it is an assumption most of us have when talking about entailment, which we rarely make explicit. The example sentences of both Strawson and Austin all have this "meaning" connection between the entailing and the entailed sentence. None of their sentences are like the ones above. And yet Strawson claims at one point that "S₁ logically implies S₂" is a variant of "S₁ entails S₂", indicating that he makes no distinction between logical implication and entailment. Also, his definitions of entailment make no mention of 'meaning connections' as in "S-1 entails S-2 may be defined as S-1 and not S-2 is inconsistent," or equivalently, "when one statement entails another, the truth of the first is a sufficient condition of the truth of the second, and the truth of the second is a necessary condition of the truth of the first." (1967, pg. 20). Austin's definition is similar to the
first one above. So neither includes this concept of 'meaning connection' in his definitions, but both make use of it in their examples. The next two sentences are from Austin:

13. 'All of the guests are French' entails 'Some of the guests are French'.

14. 'The cat is on the mat' entails 'the mat is under the cat'.

For many logicians, only (13) is a true case of entailment because it involves the quantifier rules and for them only logical connections, such as rules about truth tables, quantification, etc., count for entailment. In (14), the connection partially dependent on the meaning of the lexical items on and under. It was to account for sentences with meaning relations like this one that Carnap developed the concept of meaning postulates (see Carnap, 1947).

Katz and W. Quine (and others) define entailment as analyticity of the conditional, i.e., the meaning of the consequent (then-clause) is contained in the meaning of of the antecedent (if-clause). For example:

15. If that person is a spinster, then that woman is a spinster.

Austin, among others, has claimed that a characteristic of entailment is that if p entails q then \( \neg q \) entails \( \neg p \).
16. 'John is a younger son' entails 'John is a brother'.

16a. 'John is not a brother' entails 'John is not a younger son'.

This characteristic seems to be true of (15) and (14), and although logicians would find no difficulty in claiming it true of (13), linguists would, because of the problem of negation. \( \sim q \text{ entails } \sim p \) cannot be negation in the auxiliary:

13a. 'Some of the guest are not French' entails 'All of the guests are not French'.

It must be negation of each clause.

13b. 'It is not the case that some of the guests are French' entails 'It is not the case that all of the guests are French'.

This question of different negations will be discussed further in section 4.

The philosophers summarized above have for the most part concerned themselves with stating the truth conditions for entailment. In general, they hold that for \( S_1 \) to be entailed by \( S_2 \) it must be true whenever \( S_2 \) is true. Their systems are such that logically impossible sentences can entail any sentence and analytic sentences can be entailed by any sentence. Only Carnap has made an attempt to base his definitions on meaning connections. Entailment (in its various guises) always has to do with relations between sentences.

Presupposition is connected with assertions.
(statements) and deals directly (Austin) or indirectly (Strawson) with the relation between the sentence and the world. Presupposition has to do with what conditions must hold in the world in order for a sentence to be asserted. The philosophers have in general limited themselves to the consideration of presuppositions of the surface grammatical subjects of sentences, and specifically to what they call proper names and definite descriptions.

We should now consider a more recent formulation of presupposition and entailment, and further claims made using these formulations.

3. A Recent Formulation of Presupposition and Logical Implication

In an interesting recent work, E. Keenan (1969a) makes the claim that there are two kinds of presupposition: pragmatic presupposition and logical presupposition. His notion of pragmatic presupposition has to do with the relation between utterance of the sentence and the context in which it is uttered. For him this context includes those individuals involved in the speech act as well as the physical and cultural setting. His examples have to do for example, with the attitudes that the speaker has toward the hearer and the syntactic reflexes of those attitudes. They also include the physical environment in which the utterance takes place, to enable one to
account for what philosophers call 'indexical' terms (eg. this and that, here and there, now and then). We will not be further concerned with pragmatic presupposition.

He has constructed a three-valued logic in order to be able to incorporate, within the logic, our intuitions that there is a difference between sentences whose presuppositions fail and sentences which are false. His definition of logical presupposition (which we shall just call presupposition) is the most precise definition I have found. Keenan agrees with the Strawson claim that presupposition is a relation between sentences. But he draws a different conclusion about the case where the presuppositions of a sentence fail.

This new definition is based on two crucial concepts; that of strong vs. weak negation, and that of logical implication. He defines the latter as follows: "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 in which all the sentences $S^*$ are true. In such a case we also say that $S$ follows (logically) from $S^*$, and that $S^*$ implies (logically) $S$." (1969b, pg. 1). In other words, the truth of $S^*$ is a sufficient condition for the truth of $S$. This can be seen to be a direct descendant of Strawson's definition of entailment, generalized to include truth in all possible worlds.
The difference between strong and weak negation can be seen in the following examples from Keenan:

17a. That Fred laughed bothered John.
17b. That Fred laughed didn't bother John.
17c. Fred Laughed.
17d. It's not true that it bothered John that Fred laughed.

Keenan points out that both (17a) and (17b) logically imply (17c), so that if (17a) is true, (17c) holds, and if (17b) is true, (17c) still holds. But if (17c) is false, then according to his logic, (17a) and (17b) are neither true nor false, but are assigned the third or nonsense value (zero). This is an advantage over two-valued logics, at least for those who want to claim that (17a) and (17b) are meaningless when (17c) is false. For them, a two-valued logic would not be able to interpret (17a) and (17b) at all when (17c) is false. It is questionable whether Russell would find this a more satisfying solution than his, since his claim would be that (17a) and (17b) are merely false anyway when (17c) is false.

The problem of negation is exhibited by (17d). Is it also a negation of (17a)? Keenan claims that (17d) denies (17a) without being specific as to the way in which it denies (17a). It leaves open at least two possibilities: a) that (17a) is denied while (17c) is held true, and b) that both (17a) and (17c) are denied.
He calls this kind of negation (in 17d) weak negation, and the negation in (17b) strong negation.

Syntactically, strong negation appears from his examples to be negation in the auxiliary of the matrix sentence, whereas weak negation is always of the type "It's not the case that X". So for the sentence

18a. Our dog loves the mailman she bit.

the strong negation is

18b. Our dog doesn't love the mailman she bit.

and the weak negation is

18c. It's not true that our dog loves the mailman she bit.

Two possible continuations of this sentence are:

18d. She loves the mailman she didn't bite.

18e. She growls every time he gets near her.

With these definitions of logical implication and strong negation, Keenan can go on to define logical presupposition as follows: A sentence S logically presupposes a sentence S' just in case S logically implies S' and the negation of S, ~S, also logically implies S'.

(1969b, pg. 2) The result of Keenan's using "logical implication" as the base for his definition of "presupposition" is that the logical presuppositions of a sentence are always a subset of the set of logical consequences of that sentence. The line that differentiates between presupposition and logical...
consequence is that of strong negation. If a sentence and its strong negation both imply viz., have as a logical consequence, the same sentence, then they also presuppose it. In his view, presupposition is logical consequence of a special kind. Consider these three true sentences:

19a. Paul's children are girls.
19b. Paul has children.
19c. Paul's children are female.

According to Keenan, 19a implies both 19b and 19c, but presupposes only 19b.

In his model, if S' is not true, then S is neither true nor false, and in his logic is assigned the third or "nonsense" value. It should be pointed out here, that Keenan equates meaningfulness in declarative sentences with being true or false. He says, "Intuitively then, the presuppositions of a declarative sentence are those conditions the world must meet in order for the sentence to be meaningful." If these presuppositions fail, then the sentence is meaningless. He differs from both Strawson and Frege, as neither of them would go so far as to claim that the sentence is without meaning. Frege would only say that the sentence is not totally meaningful, because of the lack of reference, and Strawson would say it has meaning but can't be assigned a truth value.
Although Keenan makes use of the same trichotomy—true, false, meaningless—that earlier logicians used, he has been able to account for more cases than they by including this third value (zero) in his logic, and by generalizing his definition to "all possible worlds." But he still does not question their assumption that a sentence whose presuppositions fail is meaningless.

Keenan claims that a number of different kinds of grammatical structures involve logical presupposition: (In the examples below, the (a) sentences are said to presuppose the (b) and (c) sentences.) The 'factual' predicates pointed out by the Kiparskys (1968; see Section 5 for further discussion):

20a. It annoyed Nixon that Tyler quit.
20b. Tyler quit.

A number of grammatical constructions which he labels "definite names":

21a. George hit my brother.
21b. I have a brother.
21c. George exists.

22a. Leslie loves the puppy she found.
22b. Leslie found a puppy.

23a. Watts is where the riot started.
23b. The riot started.
Cleft sentences:

24a. It was John who caught the thief.
24b. Someone caught the thief.

Selectional restrictions are said to presuppose so that a sentence containing the verb *surprise* like:


presupposes that its object is animate and intelligent.

Nonrestrictive relatives:

26a. Jane, who is beautiful, thinks she is ugly.
26b. Jane is beautiful.

"Or" sentences like the following:

27a. Should you swim with your eyes open or closed?
27b. You should swim with your eyes open or closed.

Keenan makes presuppositional claims about several other minor grammatical constructions which we will not mention here. These examples should be sufficient to give the reader a general idea of the kinds of phenomena he wants to call presupposition.12

The one characteristic that all these different types of syntactic constructions have in common is that the "presupposed" sentences are also true when the sentence is negated. This makes me question whether this is an adequate definition of presupposition. There are some questionable types, (see (25), (26), (27)) which presuppose according to his definition, but seem to me to be different phenomena. Selection restrictions are
a case in point. Keenan acknowledges the fact that they differ from other types in that the presuppositions use predicates which do not occur in the sentence which presupposes them (1969a, pg.145). So in effect we have to 'invent' the presupposed sentence. Another thing to notice about selection restrictions is that failure of presupposition must be interpreted differently from the other types. So far failure of presupposition has meant the case where a sentence doesn't refer (either to an object or an event or a state of affairs). With selection restrictions failure of presupposition would have to mean the case where the object following the verb does not have a particular quality. In the example above we would have to say failure of presupposition has occurred if 'Clea' is not animate. Now some might find this a perfectly reasonable conclusion. I find it a little suspect.

If one maintains that selection restrictions do presuppose, then according to Keenan's definition, I think he is also committed to saying that strict subcategorization features\textsuperscript{13} presuppose. For example, \textit{enjoy}, being a transitive verb, requires a following noun phrase. The negation test works here too since a sentence in which \textit{enjoy} is negated also requires a following noun phrase.

28. Miriam enjoyed the job.
28a. Miriam didn't enjoy the job.

The most questionable claim is that sentences which contain nonrestrictive relative clauses presuppose them (see (26)). Keenan is aware that there is a problem with nonrestrictive relatives which have no truth value such as the following:

29. This broken lamp base, which I promise to fix, needs to be put out of the way for now. It is true that the nonrestrictive relative (when it has any truth value at all) must be true in order for the whole sentence to be true. But this again indicates that truth is an inadequate criterion. Notice that a sentence containing two conjoined clauses cannot be true unless both of the conjoined clauses are true. But no one would want to claim that this was a case of presupposition of either clause. (What prevents this from being a case of presupposition in Keenan's logic is the fact that there is no main verb to be negated).

An interesting case is the "or" question exemplified by (27). I think that it does not presuppose "you should swim with your eyes open or closed." It does presuppose something like "you swim" or "one swims", but it seems to me that the modal should applies not to swimming, but to what you do with your eyes. Take the sentences

30. Should you pay by check or with cash?
31. Should you broil steaks slowly or fast? In neither case does the should apply to the verb, but rather to the adverb in some mysterious way. We can almost paraphrase them with the following:

30a. When you pay, should you do it by check or with cash?

31a. When you broil steaks, should you do it slowly or fast?


Let us look just at the consequences of using 'truth' as the basis for the definition of logical implication. We find that a definition such as Keenan's does not avoid the paradoxes of strict implication mentioned earlier. So for him 'S₁ implies S₂' is equivalent to saying 'if S₁ is true, S₂ is true'. But what if S₂ is an analytic sentence? Then since it is always true, it will always be true when S₁ is true. All sentences which are not given a zero truth value in his model can imply all analytic sentences. For example:

32. My husband likes steak.

implies

33. A bachelor is a bachelor.

when spoken by the author, because in that instance (32) is true. This consequence applies to presupposition also (since in Keenan's model the sentences that presuppose are a subset of the sentences that imply).
Accordingly, every sentence and its strong negation presuppose all analytic sentences. Consider:

34a. I'm wild about pickled eggplants.
34b. I'm not wild about pickled eggplants.
34c. A spinster is a spinster.

Now (34c) is true in every world in which (34a) is true; and (34c) is also true in every world in which (34b) is true. So (34a) and (34b) each implies (34c). But (34b) is the strong negation of (34a). And since (34a) and (34b) both imply (34c), they also both presuppose (34c). Keenan is aware that in his model all sentences with the value true or false imply analytic sentences and is not disturbed by this. Presumably he is willing to accept the paradoxes of strict implication, as are most logicians, since, as we have seen, the same conclusions can be drawn for presupposition (based on implication). We assume that he accepts this also.

This consequence would be devastating for a linguist who accepted the Keenan definition of presupposition and wanted, in addition, to claim that all the presuppositions of a sentence must be represented in the deep structure of that sentence. A number of linguists have made just such a claim (Morgan, 1969). But no linguist that I know of has been explicit enough in his definition of presupposition so that it is possible to tell whether that definition also allows such a consequence. At any rate,
this is a fact that linguists who continue to use the term 'presupposition' must eventually cope with.

A number of people base their definitions of logical implication and presupposition on truth conditions. An argument against doing this is that there are meaningful sentences which have no truth conditions. In their systems the following sentences cannot be said to imply:

35. Quit hollering, will you?
36. Where is the bomb?

An extension of this argument is that there are also meaningful sentences which presuppose, which also don't have any truth conditions. Commands, questions, performatives, all exhibit properties which I would want to call presupposition. (In other words, they can contain the same grammatical constructions which Keenan claims make the assertion containing them presuppose).

37. Shut the window in the living room, which presupposes there is a window in the living room.
38. I assure you that what he said didn't affect me at all, which presupposes that he said something.
39. When did you hear about the massacre, which presupposes that there was a massacre. All of these non-assertion sentences have the obvious presuppositions. Keenan does claim that the presupposition
of questions can be defined.\textsuperscript{14} He makes no mention of these other types, i.e., commands, performatives.

With regard to logical implication (or entailment), an interesting split has developed among those who have attempted a definition. They all agree that if A logically implies (entails) B, then 'A and not B' is inconsistent. Some, (as we have pointed out), make the further claim that one characteristic of logical implication (entailment) is that if A logically implies (entails) B then \( \neg B \) logically implies (entails) \( \neg A \) (see (16), (16a)). Others, such as Keenan with implication and Strawson with entailment make no mention of this supposed equivalence. Now I have no clue as to why Strawson has not mentioned this, but Keenan's not mentioning this so-called equivalence becomes clear when you explain his examples. '\( \neg B \) implies \( \neg A \)' does not hold for all his examples. Keenan claims that (40a) implies (40b).

40a. That Goldberg resigned annoys Fred.

40b. Goldberg resigned.

But if we apply the '\( \neg B \) implies \( \neg A \)' test we do not get implication.

40c. Goldberg didn't resign.

40d. That Goldberg resigned doesn't annoy Fred.

(40c) does not imply (40d). They do not have the same
truth conditions. But now look at the following group of sentences:

41a. John forced Harry to leave.
41b. Harry left.
41c. Harry didn't leave.
41d. John didn't force Harry to leave.

Now one might want to claim that just as (41a) implies (41b), (41c) implies (41d). (41c) and (41d) do seem to have the same truth conditions. I feel a little uncomfortable about (41a - 41d). I'm not sure what conclusion to draw.

The one thing that seems clear here is that the philosophers concerned with logical implication (entailment) did not intend for their definitions to be extended to examples of this kind. Whether this is a legitimate extension on the part of linguists or not is something that should be considered further. Since my concern is peripheral, I shall not pursue the matter here.

With all these various problems, it is not surprising that I have not been able to find 'the' definition of presupposition. Keenan has at least given us a fairly clear idea of what he considers it to be. Whether his definition is restrictive enough, I am not prepared to say. Two big questions remain: Is presupposition a relation between a sentence and
the world or is a relation between sentences? And how inclusive do we want this concept to be? We've ranged from 'what conditions are necessary for a sentence to have truth value' to 'what conditions are necessary for a sentence to be uttered appropriately on a particular occasion.' This is a big leap, and I'm not sure we want to apply the term presupposition to that wide a set of conditions.

At any rate, for the rest of this paper, I will use the Keenan definition. Its' explicitness will allow the reader to test my claims about conditional sentences, at least with regard to presupposition.

5. Some Linguists on Presupposition and Entailment.

The linguists to be discussed in this section have used the terms entailment, presupposition, or implication to help explicate various syntactic and semantic phenomena. We will be concerned with whether their uses of the terms are compatible with the various definitions which were presented earlier, and with whether the phenomena they are used to explicate are, in fact, examples of the type claimed.

In 1965 Charles Fillmore wrote an article, "Entailment Rules in a Semantic Theory", which argued that there were several semantic phenomena that the ordinary rules of a Katz-type interpretive semantic component could not account for. The addition of a new
kind of rule, which he called an 'entailment' rule, was needed. Entailment rules, he said, would operate as follows: "There is a sentence X which cannot by itself be interpreted by the ordinary semantic rules. Based on the grammatical structure of X, the entailment rules will convert X into a set of sentences Y such that each of these sentences Y can be interpreted by the ordinary semantic rules. The semantic interpretation of the set of sentences Y, then, is provided as the semantic interpretation of the sentence X." (pg. 65-66)

The phenomena which he claimed demand the addition of entailment rules are, for the most part, of the type that linguists, though not philosophers, are currently calling instances of presupposition. These include verb like know, realize, be aware. He says that in order to give a proper semantic interpretation to sentences containing one of these verbs, one must apply to the sentences an entailment rule which states that the sentence embedded after the verb is entailed. So the sentence 'I know that Sammy did it' is to be interpreted as entailing 'Sammy did it'. (These verbs will be discussed more thoroughly when we look at the Kiparsky and Kiparsky paper "Fact").

Other phenomena that he claims are arguments for entailment rules are:
(i) uses of even in simple, comparative, and conditional
sentences.

42. Leslie even does the dishes. entails One would not expect Leslie to do the dishes.

43. The Agean is even bluer than the Adriatic, entails The Adriatic is bluer than average.

(ii) uses of for prepositional phrases like

44. He's smart for a boy. entails Boys are not smart.

(iii) words like come and go, bring and take (as related to place and time deixis)

45. I'll come as soon as I can. entails Speaker is not presently at the place the listener is.

46. She brought the case here. entails The place mentioned is where the speaker is.

(iv) various conditional sentences:

47. If only Susan comes, I won't go.

48. If Les hadn't been there, I would have sunk. (His analysis of conditionals will be discussed in detail in a later section (Chapter 2, section 2)). He claims that there are some inter-sentence relations which should not be accounted for by entailment rules. One of these is a relation he calls class inclusion between lexical items. It is exemplified by the following sentences:

49a. Dawn's parents are dead.

49b. Dawn's father is dead.
This, he says, can be handled adequately by a Katz-type semantic component. It should be kept in mind that, as we have seen, Austin and Strawson use the term entailment for just such relations as these. (1965, pg. 68).

In this paper, Fillmore does not use the term entailment in any rigorous sense. He doesn't define it other than to say that it's a kind of rule which adds information. Because of this, his claims that certain sentences entail are difficult to evaluate. He has stated in a more recent publication (1969), that an utterance of a counterfactual conditional presupposes the falsity of the proposition contained in the if-clause. This would suggest that he has changed his mind about what kind of phenomenon he's dealing with, at least in this case. And it's fairly reasonable to assume that all (or most) of these phenomena are examples of presupposition, and not entailment. Given this assumption, we can then represent Fillmore as making the first linguistic attempt to account for presupposition in any formal way.16

His assumption at that time was that an interpretive semantic component based entirely on deep structure and lexical information was appropriate. We can view his development of entailment rules as an attempt to make the interpretive theory work more effectively, that is, account for more semantic data. He not only had to
invent a new kind of semantic rule, the entailment rule, but he also populated the base with a number of 'markers' (such as 'conditional', 'expectation', 'counterfactual', 'neutral'), which were supposed to trigger various semantic (and transformational) rules. His paper, while pointing out several semantic phenomena which will have to be accounted for in some way, becomes in effect a good argument for the inadequacy of a Katz-type interpretive semantic component.

The Kiparsky's paper "Fact" deals exclusively with presupposition of events, situations, states of affairs. They point out that a certain group of predicates require that their complements be interpreted as 'facts' while other predicates do not impose this requirement:

50. He regrets (the fact) that John came. **factive**
51. He asserts (*the fact) that John came. **nonfactive**

What they actually claim is that these predicates presuppose the truth of their complements. It is with this claim that I take exception. Sentences don't presuppose the truth of other sentences. If we maintain that presupposition is a relation between sentences, then we can say that a sentence presupposes another sentence (not its truth value). And if we maintain presupposition is a relation between a sentence and the world then we can say that the sentence presupposes the
existence of certain individuals or events, or states of affairs.

We can see the difficulty with their claim if we take a look at some sentences with factive verbs and the modals will or would or may. The complements are often ambiguous as to whether or not the events represented in them have occurred, and therefore as to whether or not the complements are true;

52. I will regret the fact that I agreed to the proposals.

One interpretation if the complement in this sentence is factive; that I have already agreed to the proposals and that I will regret this at some time in the future. The other interpretation can be paraphrased as follows:

52a. When I agree to the proposals, I will regret it.

For a sentence with would such as

53. I would resent Mary's having done it.

both the factive and the nonfactive senses seem to imply an underlying if-clause. If we make these if-clauses explicit, the two interpretations might be

53a. If I were you, I would resent Mary's having done it.

53b. If Mary did it, I would resent (Mary's having done) it.

These sentences demonstrate the fact that it is not the 'truth' of the complements which is presupposed by
these factive predicates since in some interpretations the complements are seen as neither true nor false.

Another argument against the Kiparsky 'truth' claim is that some simple nouns that can follow factive verbs are also interpreted as events, or states of affairs.

54a. I regret that experience.
54b. I regret that.
54c.* I regret Sarah.
Clearly, we don't interpret these nouns as true, but as expressing existing events or states of affairs, and a description which shows these to be like the sentential complements is simpler than a description which doesn't.

Another semantic grouping which bears on phenomena in this area was brought to light by Karttunen (1970a). He calls this class "implicative" verbs. These are distinguished from factive verbs because while a factive complement holds regardless of whether the matrix factive verb is negated, just the opposite is true when a matrix implicative verb is negated. Consider

55a. It's hard to ignore Agnew's being obnoxious.
55b. It's hard not to ignore Agnew's being obnoxious.
The complement holds in both sentences. But while

56a. Terry managed to get an A.
implies that Terry got an A,
56b. Terry didn't manage to get an A. does not imply that Terry got an A. In fact, it implies that Terry didn't get an A.

Karttunen says that complements like these, which follow implicative verbs, really are presuppositions "in the logical sense of the term, since it seems to depend on the truth of the supposition whether or not the sentence has a truth value." (pg.25) But this is not so. We have already seen that there are several "logical" senses of the term presupposition, but not one of them would allow this as an example. Let's assume we're talking about the use made of a sentence on a particular occasion. If we assume that "John managed to kiss Mary" presupposes that John kissed Mary, then failure of presupposition, that is the case where John didn't kiss Mary, should mean that the sentence "John managed to kiss Mary" is without truth value. But in fact, the sentence paired with the fact that John didn't kiss Mary, only means that the sentence is false. This makes it appear that what is happening here is some kind of entailment. And the test for entailment holds--"John didn't kiss Mary and John managed to kiss Mary" is inconsistent. This again seems to be a case of entailment of an event, like the one mentioned earlier.

The negative implicative verbs Karttunen mentions also show relations, which if they are not entailment,
are certainly related to it.

57a. John forgot to lock the door.
57b. John didn't lock the door.

Karttunen also points out a group which are ambiguous as to entailment in the positive sentence, and which unambiguously entail a negative complement in the strong negation. So

58a. It was not possible for Henry to come.
entails: 58b. Henry did not come.

58b. Henry did not come.

but

58c. It was possible for Henry to come.
may be interpreted as noncommittal as far as whether or not the complement is entailed; it can also be interpreted as entailing the complement, as in

58d. Fortunately, it was possible for Henry to come.

One other semantic difference between sentences with factive and implicative verbs in them is that between the implicative verb and its complement there is simultaneity of events (or possible only one event), while between the factive verb and its complement there is a sequence of events. So while we can say

59. Harold locked the door and then he regretted it.
we cannot say:

60.* John ate three bowls of cheerios and then
he managed it.

(where it refers to eating three bowls of Cheerios.)

In an even more recent paper (1970b) Karttunen presents a reclassification and an addition to this grouping of implicatives. He now talks of full implicatives (as in (56), (57)) and two classes of one-way implicatives. We have seen one kind of one-way implicative (as in (58)) which he calls the "only-if" type. The other type of one-way implicative, the 'if' type, is subdivided again into two groups:

(i) this type implies the complement if the verb is affirmative, and implies nothing if the verb is negative.

61. John{forced \[\text{didn't force}\]} Mary to stay home.

(ii) this type implies the negation of the complement if the verb is affirmative and implies nothing if the verb is negated.

62. John{prevented \[\text{didn't prevent}\]} Mary from leaving.

What is new about this paper is the way in which Karttunen proposes to account for these relations. He does not want to claim that these entailed sentences are part of the underlying semantic structures of the sentences which contain the implicative verbs as main verbs. Rather, he proposes that there be a set of meaning postulates which, along with the general rules of inference, will derive these entailed sentences. The notion of meaning postulates, he says, is due to Carnap.
It will be interesting to see if Kartunen's notion of meaning postulates withstands the attack any better than Carnap's did (see Quine, 1960).

Larry Horn has been working recently (1970) on sentences with *only*, *even* and the quantifiers trying to figure out what these sentences entail and what they presuppose.

When *only* has as its scope a noun phrase which is the subject of a sentence, he claims that what is presupposed is the same sentence without *only*:

63. Only Muriel voted for Hubert.

presupposes 63a. Muriel voted for Hubert.

What is asserted, he claims, is the uniqueness of Muriel doing that act. With a predicate as scope, he claims also that the sentence is presupposed and what is asserted is the uniqueness of the event indicated by the predicate:

64. Muriel only voted for Hubert.

presupposes 64a. Muriel voted for Hubert.

What is asserted, he claims, is that Muriel didn't do anything else with regard to Hubert (if just the verb is the scope), or that Muriel limited her actions to the one stated (if the whole predicate is scope). One might view Horn's claims as stating that *only* is a modal operator and that what is asserted by sentences with *only* is their modality, not their content.
This may well be true in some cases, but there are some things that bother me. If we look at the following question and answer, then Horn's analysis of only seems reasonable.

Question: Who voted for Hubert?
Answer: Only Muriel voted for Hubert.
The answer presupposes that someone voted for Hubert and asserts that Muriel is the only one. But look at the next set:

Question: Did anyone vote for Hubert?
Answer: Only Muriel voted for Hubert.
I take this answer as 'asserting' not 'presupposing' that someone voted for Hubert.

Horn's discussion of entailment is with regard to sentences with quantifiers. His assumption at the beginning of the paper is that entailment is as Austin has characterized it (e.g. if $S \rightarrow S'$, then $\neg S' \rightarrow \neg S$). This is the equivalence relation mentioned earlier. As he points out, entailment of the usually discussed sort is exemplified by the quantifiers all, every, each, viz., the natural language equivalents of the universal quantifier in symbolic logic:

65. All boys are both clever and seductive $\rightarrow$ All boys are clever and all boys are seductive.
But he claims there are two other types of entailment which are exemplified by the quantifiers many, some,
most, for (→), and few, none, not many for (←). He says these kinds of entailment are exemplified by the following sentences:

66. Many boys are both clever and seductive
    Many boys are clever and many boys are seductive.

67. Few boys are both clever and seductive
    Few boys are clever and few boys are seductive.

Now the first problem with these claims is that none of these sentences fit the test for entailment that Horn states at the beginning of his paper. They don't do this because of the problems involved with negation of quantifiers. What are the negations of the sentences in (65)? It seems that the only possible negation is "it's not the case that ... ." But it is just this kind of negation that Keenan, at least, claims does not exemplify entailment.

The second problem is that for me, (67) is not an instance of any kind of entailment. For me, (68) below, is quite acceptable:

68. Few boys are clever and few boys are seductive and no boys are both.

Now I do not want to claim that these phenomena are not examples of entailment. But they are certainly not examples of any definitions of entailment we have seen so far. If Horn wants to call these examples of
entailment, he still owes us a definition of entailment of which these are examples.

We have seen some linguistic attempts to account for several semantic phenomena in terms of entailment and presupposition. Linguists, who deal with a much wider range of linguistic constructions, are in a good position to test for various concepts developed by the philosophers. We may in this way find many more instances where we can say entailment and presupposition apply. We can envision linguists shedding light on philosophic problems by means of this testing.

But we also see a danger in linguists not having a full enough understanding of these concepts and spreading confusion by means of unsupportable claims. We have seen some evidence of this in the linguists reviewed here. If we as linguists want to make use of philosophic concepts in our approach to semantic analysis, it behooves us to make ourselves sufficiently knowledgeable to be able to do this to some good effect.
NOTES TO CHAPTER 1

1. Quine (1961, pg. 5) says "The names to which Russell's theory directly applies are complex descriptive names such as 'the author of Waverly', 'the present King of France', 'the round square cupola on Berkeley College'."

2. Assertions are generally thought by the philosophers who use the term to be the only sentences which are true or false. If a sentence asserts then it is either a true assertion or a false assertion.

3. See Carnap (1947, pg. 36) for some proposals on how to get around this difficulty.

4. In Word and Object (1960), Quine claims there are some sentences which are totally identified by their words. An 'eternal' sentence is one whose truth value is fixed through time and from speaker to speaker. We can add enough information such as dates, clock readings, names, social security numbers, etc., to make some sentences eternally true or eternally false.

5. I suspect this is why he uses the term statement since the term assertion is so commonly defined as being a sentence with a truth value.

6. A standard illustration of the difference
between reference and meaning is given by Quine (1961, pg. 130) "The main concepts in the theory of meaning, apart from meaning itself, are synonymy, (or sameness of meaning), significance (or possession of meaning) and analyticity (or truth by virtue of meaning). Another is entailment, or analycity of the conditional. The main concepts of the theory of reference are naming, truth, denotation (or truth-of) and extension. Another is the notion of values of variables."

7. Their definition is derived from C. I. Lewis (1952).

8. The principles Hughes and Creswell consider too important to abandon are the following: a) any conjunction entails each of its conjuncts; b) any proposition p entails (p or q) no matter what q may be; c) (p or q) and p together entail q no matter what q may be; d) whenever p entails q and q entails r, then p entails r.

9. Sentence (11) is given the value 'true' because the antecedent is false, and any conclusion can be drawn from a false premise. Sentence (12) is given the value 'true' because the consequent is true.

10. The examples he gives of pragmatic presupposition are exactly like the examples that Jerrold Sadock gives as arguments for underlying performative sentences in "Hyper-Sentences". (1969)
11. Notice that Keenan does not use the term "strong negation" in this definition. He indicates strong negation by the symbol (∼), which is part of the definition, and weak negation by the symbol ( * ), which is not.

12. For the complete list see Keenan (1969a, pg.12).

13. See Chomsky (1965) for a definition of strict subcategorization features.

14. By doing what he calls "relativizing them to the presuppositions of their answers." He has not yet done this and it is not clear to me what he has in mind.

15. Perhaps he has just assumed it to be the case and did not mention it.

16. As a matter of fact Fillmore acknowledges in a later article (1968) that he had misnamed the phenomena in this paper.
Chapter 2

Previous Analyses of Conditionals

I. Philosophers on Counterfactual Conditionals

In the late 1940's and the 1950's a number of articles on counterfactual conditional sentences appeared in the various philosophic journals. The proper analysis of these sentences was argued at length. In all of these articles, I find little interest in the questions with which this paper is concerned. But a review of some of these works is in order because several interesting distinctions among conditionals were unearthed.

Two recurrent questions appear in the philosophic literature of this period. The first is the question of whether or not a counterfactual is verifiable. What does it mean to say that a particular conditional is true? The second question grew out of attempts to answer the first, and can be stated as follows: Do all subjunctive conditionals assert causal (natural) laws?¹

Let us first take up the arguments of those who claim that subjunctive conditionals assert laws. In fact, what they're concerned with is whether or not
subjunctive counterfactuals assert. Philosophers became involved with the analysis of counterfactuals because it was hoped that they could provide an answer to problems in the philosophy of science which were bothering them, and thus the emphasis on counterfactuals which deal with natural laws. Nelson Goodman (1954) makes the strong claim that if philosophers can't interpret counterfactuals, they can't claim to have an adequate philosophy of science either. Scientific laws are often expressed in counterfactual terms because of what Goodman calls "the apparent ease of expressing in counterfactual form what we want to say about dispositions and possible entities". He claims, for example, that replacing the statement

'k was flexible at time t'

by

'if K had been under suitable pressure at time t, k would have bent'

has promise as a step towards clarification because of the elimination of the dispositional term "flexible". These dispositional terms and possible entities are to be avoided by those interested in language of science. Since our interest is a linguistic one, we will not delve into the reasons put forth for these claims, but will confine ourselves to Goodman's arguments about subjunctive conditionals with regard to natural laws.\(^2\)
He first assumes the case where the antecedent and consequent are clearly false, say, in a situation where a particular piece of butter, referred to in a sentence (1) below, had been eaten prior to the utterance of (1) and no longer exists.

1. If that piece of butter had been heated to 150°F., it would have melted.

He points out that counterfactual conditionals cannot be considered as truth functional compounds because if they were, all counterfactual conditionals would be true, since their antecedents are false. Under a truth-functional analysis, both (1) above, and its negation (2) below would be true.

2. If that piece of butter had been heated to 150°F., it would not have melted.

"Obviously something different is intended" he claims, and the problem is to define the circumstances under which a given counterfactual holds while the opposing conditional with the contradictory consequent fails to hold. And this criterion of truth must be set up in face of the fact that a counterfactual by its nature can never be subjected to any direct empirical test by realizing its antecedent." (pg.14) How then, if we can't derive the truth value of a counterfactual from the truth value of its components, can we find the truth value? He says we must find it by discovering the necessary and
sufficient conditions under which a counterfactual coupling of antecedent and consequent is allowed. According to him, "a counterfactual conditional is true, if and only if the antecedent, joined with relevant true statements about the attendant circumstances, leads by way of a general principle to the consequent." (pg.41) The problem of the verification of counterfactuals then, becomes that of discovering the relevant circumstances and the definition of the general principles. (For example, the general principle associated with (1) above, would be 'Butter melts at 150°F').

Roderick Chisholm, (1955), also accepts the claim that counterfactual conditionals are law statements, and analyses them in the following way. He claims that a counterfactual is a metalinguistic statement telling something about what can be inferred in a given system of statements. He says the counterfactual presupposes this system of statements. He disagrees with the claim that counterfactuals entail the denial of their antecedents, and he specifically states that this system of statements presupposed by counterfactual does not include the denial of the antecedent. This antecedent is a supposition, which together with the presuppositions logically imply the consequent. I bring up these claims, not because of the argument, but because of the example he used in making the argument. The sentence
upon which he bases his claim is the following:

3. If that were gold, it would be malleable. The presupposition (in his sense) of this sentence is *All gold is malleable.* The antecedent is interpreted as *Suppose that is gold.* Then, given the presupposition and the supposition, the logical conclusion is that it is malleable. There are a number of speakers who do not find this interpretation of the antecedent a possible one. For them, (3) could only be interpreted as meaning that the antecedent is negated. In order to get the interpretation that Chisholm proposes, the 'possibility', they would have to use a different syntactic form such as (4):

4. If that's gold, it's malleable.

In my dialect, (3) is ambiguous as to whether or not the antecedent is interpreted negatively, or as a possibility. This is ambiguity apparently not noticed by the philosophers in general, and Chisholm in particular, who call both interpretations counterfactual. I think that Chisholm is mistaken in claiming that, in general, counterfactuals don't entail (or mean) the negation of their antecedents. But he does succeed in pointing the reader toward the conclusion that not all the conditionals traditionally called counterfactual entail (or mean) the negation of their antecedents. (For more discussion of this point, see Chapter 5, section 4).
Stuart Hampshire (1948) claims that there is a distinction among counterfactuals between sentences concerned with general laws and conditions on the one hand, and sentences concerned with particular persons and situations on the other. You might label the two groups statements and judgements. His example of a typical statement is:

5. If you had had no faculty of sight, you would have no concept of distance.

Judgements are sentences like the following:

6. If Hitler had invaded England in 1940, he would have captured London.

7. If he had not acted as he did, the disaster would not have occurred.

He claims in addition that only the judgement type ((6) and (7)), can be interpreted as 'if p then q, but not p'; that for general laws you don't automatically assume the negation of the antecedent.

I think he has an interesting point, and that he is right about (5)—that is, that you can interpret the antecedent hypothetically rather than negatively. (I will deal further with the point in Chapter 3, section 6). The associated law statement would then be 'People who have had no faculty of sight have no concept of distance'.

The English philosopher John Watling, (1957), has totally rejected the idea that all subjunctive
conditionals assert causal laws. He says that this theory was adopted only because of the difficulties of verification of counterfactual conditionals which otherwise arise. He apparently believes that no division should be made on the basis of causal laws. He divides conditionals into three groups each of which he claims can be counterfactual. These three groups he calls: the 'truth-functional' group; the 'conditional assertion' group, and the 'subjunctive conditional' group. The 'truth-functional sentences he says, are true when the consequent is true, and their counterfactual counterparts are true when the antecedent is false. An example is:

8. If Susie is listening at the door, then she is breathing very quietly.

This is analyzed as being (\(\neg A \text{ or } B\)), and seems to be one of the few 'if...then' sentences in natural language which it seems reasonable to analyze as 'material implication'.

The 'conditional assertion' group he attributes to Quine who says "Anyone who makes a statement of the form 'if p then q' is in this usage, not stating that if p then q. It is rather that if p then he is stating that q." (1959, Part 1, section 3) If the antecedent is true, then he asserts the consequent; if the antecedent is false, then he asserts nothing at all. This second possibility, when the antecedent is false, is the one
Watling calls the counterfactual counterpart. The sentence (9) below is a conditional assertion.

9. If it rains tomorrow, we shall cancel the race.

The 'subjunctive conditional' group describes possible but not actual events and the counterfactual counterparts are about what would happen if something else happened. It is only this group that has traditionally been called counterfactual.

10. If you were to go, then you would enjoy yourself. (non-counterfactual).

11. What would you have done if I had not moved my knight? (counterfactual).

It seems to me that of the three groups he has proposed, it is only in the subjunctive conditional group that we can appropriately speak of counterfactual counterparts. But this grouping does point out that fact that there are interesting differences among non-counterfactual conditions - the conditional assertions and the truth-functional conditionals.

Two worthwhile points come out of these arguments. First, not all conditionals traditionally called 'counterfactual' entail (or mean) the negation of their antecedents. Second, not all counterfactuals are law statements. I consider natural law counterfactuals to be just a subset of a larger group of counterfactual conditionals. I have no doubt that there is something
special about counterfactuals that assert causal (natural) laws, that a law statement is somehow implicit in each one. But what I propose is to work toward an adequate analysis of the whole class of counterfactuals, not giving any special consideration to natural law ones. Once we discover what all counterfactuals have in common, the job of discussing the peculiarities of natural law counterfactuals will become easier.

2. **Linguists on Counterfactual Conditionals**

   The most recent proposal for a syntactic analysis of conditionals (within a transformational framework) is that of Barbara Hall (1964), who attempted to give a syntactic basis to the semantic distinction between simple and imaginative conditionals. This analysis assumed that if-clauses are adverbs-of-condition and proceeds from there. Some of her observations about conditionals are as follows:

   It is the auxiliary of the then-clause which provides a basis for this distinction. The imaginative conditionals require past tense plus one of the modals **will, shall, can, may**; while the neutral conditional allows the present tense (with any modal optionally) or the past tense (with no modal):

   Imaginative: If John came, I \{would\} could bake a cake.  
   \{should\} might
Simple: If John comes, I \{\text{will}\} bake a cake. \{\text{may}\} \{\text{can}\} \{\text{etc.}\}

If John came, I baked a cake.

(We claim several modals do in fact occur in past tense simple then-clauses. (See Chapter 3, section 2)

Future \textbf{will} does not occur in the \textbf{if}-clauses of any conditionals. She proposes a \textbf{will}-deletion transformation to account for this fact. So whenever a \textbf{will} occurs in the underlying structure of a simple or an imaginative conditional, it is deleted. She justifies this transformational by comparing \textbf{if}-clauses with simple sentences which have future \textbf{will}:

12a. Someone will invent a talking robot soon.
12b. *Someone invents a talking robot soon.
12c. If someone invents a talking robot soon, we can all test our grammar.

These sentences show that adverbs which can't occur without \textbf{will} in simple sentences can occur without it in \textbf{if}-clauses. This is accounted for by positing that an underlying \textbf{will} is possible in some \textbf{if}-clauses.

She then derives the \textbf{if}-clauses in the imaginative conditionals from the underlying simple sentences which allow the same adverbial phrases as the imaginatives. This is done by means of an auxiliary-shift rule. The following sentences demonstrate this:

13a. If I knew all the answers right now, I would
publish them.

13b. *I knew all the answers right now.
13c. I know all the answers right now.

14a. If I had finished this in an hour yesterday, I would have called.
14b. *I have had finished this in an hour yesterday.
14c. I finished this in an hour yesterday.

(13a) is derived from (13c), and (14a) is derived from (14c). The auxiliary-shift rule adds have and en if the if-clause has past tense (as in (14c)), and otherwise changes present tense (as in (13c)) to past tense. (This is a meaning-changing rule, having been done before the Katz Postal proposal that no transformation should change meaning. We shall have more to say about this transformation in Chapter 3, section 3).

The Fillmore analysis of conditionals (1965), was focused on the question of how best to account for their semantic interpretation, especially those aspects which a Katz-type interpretive semantic component could not account for. It was not meant to be in-depth analysis of conditionals but rather an indication that entailment rules were needed in this area.

He made some claims about conditionals in general that we should get out of the way first. One claim is that both semantically and syntactically tenses are associated with the conditional sentence as a whole,
not with each clause separately. He says "it is assumed that the deep structures of conditional sentences will specify for the entire sentence, only the tense and whether it is counterfactual or neutral". (pg. 94) He claims that conditional sentences are timeless, and that the tenses represented by the auxiliaries have to do with the time during which the conditional relation is said to hold, and not to the temporal aspects of the antecedent and the consequent. The correct auxiliaries will be supplied by transformations which are triggered by the tense, counterfactual, and neutral markers in the deep structure.

This claim is clearly wrong. It is true that there are restrictions on the forms of auxiliaries in conditional sentences (especially the imaginative conditionals). But that there is some independence between the antecedent and the consequent is shown by the fact that given the tense in one clause, as in the sentences below, there is some choice as to tense in the other. And this variation in tense is accompanied by a variation in meaning, however slight:

15a. If John passed his exams, he didn't tell me.
15b. If John passed his exams, he won't tell me.
16a. If he comes I should know about it.
16b. If he came I should know about it.
(For a more detailed analysis of tense in conditionals, see Chapter 3, section 2 and 3).

His claims about the meanings of conditional sentences are the ones he used as arguments for the inclusion of entailment rules in a semantic component. With counterfactuals, he says that part of the meaning is that the antecedent is false. This part of the meaning can't be arrived at by the amalgamation of the meanings of the individual constituents of the sentence. His example is:

17. If John were there, I would go.
which means that John is not there.

With regard to 'if only' conditionals, he says that 'only' entails that there is an optative comment in the antecedent:

18. If only John comes, I'll go.
which means that I hope that John comes.

Finally, he claims that concessive conditionals, with 'even if...' entail that the conditional relation does not hold and the consequent is true:

19. Even if John comes, I'll go.
which means that I'll go regardless.

These claims seem to be correct, as far as they go. They are certainly not adequate accounts of the meaning of conditional sentences, even assuming a Katz-type set of semantic rules. I will show presently, that Fillmore
has in fact just pointed out the tip of the conditional iceberg.

There have been quite recently a number of linguistic articles which contain proposals for the semantic analysis of counterfactuals. They have in common the claim that counterfactuals presuppose. Lakoff (1970) asserts that counterfactuals presuppose the negation of both the antecedent and the consequent, and Karttunen (1970) attempts to refute the second half of this claim. Lakoff says it is a fact that in a sentence (20a), both (20a) and (20c) are presupposed.

20a. If Irv were a Martian, she'd be running away.
20b. Irv is not a Martian.
20c. She is not running away.

Karttunen claims that only the negations of antecedents are presupposed. He argues that there are some counterfactuals in which we can interpret the consequents as being true, and that there are no counterfactuals in which we can interpret the antecedents as being true.

21. If I had known that Harry survived, I'd have gone home, which I did anyway.

Karttunen claims that because you can continue this conditional with an assertion, (the which clause), this makes the consequent true. I agree that (21) is an (almost) acceptable sentence, but I still don't think the consequent is interpreted as true (regardless of the
which-clause). But in addition to my partial disagree-
ment here, I find that not all counterfactuals can be
continued by an assertion (which-clause) to the effect
that the situation described in the consequent is true.

22.*If they had gotten married I would have gone
to their wedding reception, which I did anyway.
(where their and they have the same referents).
(I will present another interpretation of negation in
consequents in Chapter 3, section 5).

Another recent article concerning counterfactuals is
that by Jerry Morgan (1969), whose main thesis is that
in a theory of grammar in which the semantic represen-
tation is the deepest representation, presupposition will
also have to be represented. In fact, he claims that
all the presuppositions of a sentence must be represented
in the deep structure. Since I have already argued
against this claim in Chapter 1, I will not attack it
here, but rather point out some claims about counter-
factuals that Morgan made in the course of his exposition.
He says that the negation of the antecedent (as well as
the consequent) is presupposed by a counterfactual con-
ditional, but that the presupposition is not connected
with if. It is, rather, connected with the subjunctive
form of the main verb of the if-clause, (he uses sub-
junctive here to mean 'non-present' syntactically).
Whether or not the negation of the antecedent is pre-
supposed is a difficult question which will be argued later (see Chapter 5, section 4). But the claim about the subjunctive form of the verb in the if-clause is not true. He would have been better off if he had made that claim about the subjunctive form of the auxiliary in the then-clause). Presumably the if-clause in (23) has a subjunctive main verb.

23. If Cinderella were a princess, none of this would have happened. But what then, do you call the form of the main verb in (24) which is not counterfactual and does not presuppose the negation of the antecedent?

24. If the first horse turned into a mouse at twelve, then all of them did.

He is unique in claiming that the modality and aspect of the consequent are determined by that of the antecedent. I think this claim is partially true, and will discuss this aspect later (in Chapter 3, section 3).
NOTES TO CHAPTER 2

1. For the most part, philosophers use the terms 'subjunctive' and 'counterfactual' interchangeably. The exceptions will be pointed out in the text. The grammatical criteria for calling conditionals 'subjunctive' or 'counterfactual' are apparently that the verb in the if-clause not be in the present form. Various examples include the subjunctive forms of be, have or has or had plus a verb, and the form were to in the if-clause. Law statements are descriptions of physical or natural laws.

2. Goodman also points out a number of if...then sentences which present special problems and which are generally avoided so that attention can be focused on the problems that concern all counterfactuals. These special conditionals are the following:

Semifactuals which deny what a simple counterfactual affirms, viz., that a conditional relation holds between the antecedent and consequent:

Even if Tom had been here, I wouldn't have come.

Counteridenticals

If I were John Kennedy I wouldn't be alive today.

Counterlegals with antecedents which are contradictory

If circles were squares...

Countercomparatives which should be contradictions and aren't

If I had more money than I have...
Chapter 3
Syntax and
Semantics of Conditionals

Introduction

In this chapter I propose a syntactic analysis of the structure of the clauses of conditional sentences and a semantic analysis of the imaginative conditionals, with special emphasis on questions concerning presuppositions. I do not have much to offer as far as the semantic analysis of simple conditionals is concerned, except insofar as they relate to imaginative conditionals.

I shall assume that if-clauses of conditional sentences are adverbial subordinate clauses of some sort. Geis (1961) and Hall (1964b) have some suggestions on how subordinate clauses are treated. Morgan (1969) has some interesting low level syntactic arguments as to why if-clauses should be considered subordinate clauses.

I make no attempt to deal with concessive (even) conditionals, if only conditionals or still conditionals as illustrated below. (see Fraser (1969), Horn (1969) and Fillmore (1965))
1. Even if Samantha hadn't been a witch she would have used a broom to get around.

2. If only Lassie had come home, we wouldn't have cried.

3. If Sam were to get down on his knees and beg, I still wouldn't go.

I conclude with a section in which I relate the unreality expressed by conditionals to the unreality expressed by certain other syntactic constructions.

There has been such a proliferation of terms with regard to conditionals I consider it appropriate to set down a preliminary statement of the terms I shall be using and what they mean. I use the term 'unreality conditionals' as a cover term for the entire group of conditional sentences that deal with unreality. For me, these include future simple conditional, as well as the more traditional counterfactuals.

**future simple conditional** 4. If Mother comes, I'll be able to collapse.

**traditional counterfactuals** 5. If I were you, I wouldn't touch that hot iron.

6. If 50 pages had been enough, I would have finished long ago.

Philosophers use the terms **antecedent** and **consequent** when talking about the two main components of conditionals. It is often unclear whether they use these...
terms to talk about the whole if-clause and the whole then-clause, or whether they use them to refer to the propositions expressed in these clauses. Several discuss the question of the negation of the antecedent, and it is clear in these cases that the term antecedent must mean the proposition expressed by the if-clause. At any rate, this is how I shall use the terms:

7a. If you had written an extra report, you would have gotten an A.
The antecedent is expressed by the sentence:

7b. You wrote an extra report.
I use the term consequent to mean the proposition expressed by the complement of then in then-clauses, even though the then may not occur. The consequent in (7a) is expressed by the sentence:

7c. You got an A.

I shall, in addition, use the term the negation of the antecedent; and by this I mean the strong negation of the proposition expressed by the complement of the if. (7d.) is the negation of the antecedent of (7a).

7d. You did not write an extra report.
(Since counterfactuals require peculiar auxiliaries, the form of the auxiliary in the sentence corresponding to the propositional content is always different from the form of the conditional itself).

I adopt the term imaginative conditional (from
Jespersen) and I use it, as he suggested, as a cover term for two kinds of non-factualness that we find in conditionals. In one kind, which I call counterfactual, I interpret the antecedent as being strongly negated:

8. If Hitler had won the war, we'd all be eating limburger cheese.

9. If I were you, I wouldn't talk like that.

In the other kind, which I call hypothetical, I interpret the antecedent as describing a hypothetical situation, but not as being strongly negated:

10. If the King of Siam were to come to dinner tonight, I wouldn't serve him Chinese noodles.

11. If I saw a winged horse, I'd faint.

All non-imaginative conditionals I call simple conditionals.

The terms discussed so far have been interpretive terms. We might call them semantic terms. It is also necessary to mention some syntactic terms. The terms if-clause and then-clause will be used to refer to the whole syntactic structure (either deep or surface) of the respective clauses.

I also need to distinguish between two imaginative conditionals on a grammatical basis. I use the term past subjunctive\(^1\) for those conditionals which most generally contain had + verb in the if-clause and would + have + verb in the then-clause.
12. If John had taken the drugs, the police would have found them on him.

I use the term present subjunctive for those conditionals which most generally contain a simple past verb form in the if-clause, and would + verb in the then-clause.

13. If Nixon collapsed, chaos would reign.

Below is a diagrammatic representation of the preceding material.

Semantic distinctions:

Unreality conditionals Reality conditionals

1. Future simple conditionals

2. Imaginative conditionals
   a. Hypothetical conditionals
   b. Counterfactual conditionals

All other simple conditionals

Grammatical distinctions:

Imaginative conditionals Simple conditionals

1. Past subjunctive Whole range of forms to be developed later

2. Present subjunctive
1. Simple Conditionals vs. Imaginative Conditionals

Several of the analyses of conditionals reviewed earlier have grouped together the future simple conditionals and the imaginative conditionals and have focused on differentiating between them. This focus has some justification, since it is just these conditionals that we use to express unreality. All other conditionals are lumped together in a group we might call the 'reality' conditionals. But this focus obscures some important facts. One is that there exists a wide range of simple conditionals which function like the future simple conditional and differently from the imaginative conditionals (the next section will offer some justification for this claim). Also, though it has often been pointed out that there are different kinds of unreality, not enough has been made of the fact that there is a real distinction to be made between the unreality expressed by the imaginative conditionals as a group, and that expressed by the simple future conditional. Let us restate the different kinds of unreality in view of this claim. The title of Nelson Goodman's book, *Fact, Fiction & Forecast*, points to these distinctions quite clearly. I can use 'unreality' conditionals to talk about what 'didn't' happen in this world (*Fact*). I can use them to talk about what 'might' happen in some other world (*Fiction*). And I can use them to predict what 'will' happen in this world
(Forecast). I limit the imaginatives to the expression of fact and fiction (actually non-fact would be a more appropriate word here). When I use the imaginatives I'm saying, in effect, that I've diverged from this world, I use the future simple conditional to indicate a forecast about this world. So although the future simple conditional is like the imaginatives in indicating unreality, it differs from them in that it is never used to indicate divergence from this world; it is used to make claims about what this world will be in the future. I suggest that the difference between a future simple conditional and other simple conditionals is the same as the difference between a future simple declarative sentence and other simple declarative sentences.

If there is a semantic interpretation that all simple conditionals have in common, I have not found it. But this is not surprising, given the range of different forms that can be called simple conditionals. Remember that Quine has offered an interpretation (see 1959) for one group of simple conditionals: he calls a sentence of this type a conditional assertion. According to him, a sentence like

14. If it rains, we'll cancel the race.

(which we call a future simple conditional) should not be analyzed as 'the speaker asserts that if X, then Y', but rather if 'X' then the speaker asserts 'Y'. This
interpretation seems appropriate for some other simple conditionals also:

15. If the Trojans lost, then the Bruins are in first place.

16. If the sun is out, then its time to get up.

But there are many simple conditionals for which this interpretation is not so appealing: 4

17. If John hunted, I fished.

18. If Goldwater wasn't having any influence, Fulbright wasn't either.

(17) and (18) would be more appropriately characterized as "the speaker asserts '(if X then Y) and X". There is one generalization about all of these sentences that can be made: there is no interpretation in which the antecedent is seen as strongly negated. 5

The past subjunctive is used to indicate an imaginary situation or state of affairs in the past and a consequence of it. An imaginary situation combined with past time will, in addition, be interpreted as 'counterfactual'. The present subjunctive is also used to indicate an imaginary situation, but in non-past situations. When we have additional information to indicate the imaginary situation does not coincide with present reality, we interpret the subjunctive as 'counterfactual' also. Example:

19. If you were here right now, I'd hit you.
When we don't have this additional information to indicate the imaginary situation does not coincide with the present, the interpretation of the subjunctive remains 'hypothetical'. Example:

20. If Nixon were to collapse \{right now,\} chaos would reign.

2. **Syntactic Properties of Simple Conditionals**

   The forms that the auxiliary can take in the surface structures of simple conditionals are only slightly more restricted than the forms of the auxiliary in simple declarative sentences.

   **simple present**

   21. If you step on the brake, the car slows down.

   22. If an American citizen is put into jail, he is entitled to a hearing within 24 hours.

   **simple past**

   23. If the North Vietnamese agreed, the South Vietnamese disagreed.

   24. If there was a happy man in the world that night, it was John Tunney.

   **progressive**

   25. If it's raining out there, my car is getting wet.

   26. If Mitchel is making the decisions for the State Department, then the Defense Department is being neglected.

   **perfect**

   27. If the radicals haven't made the government more responsive, they have wasted their
time.

28. If the killing had occurred before 3 P.M. 
Bill had found his alibi.

29. If smog can be licked in Los Angeles, it 
can be licked anywhere.

30. If Tim would go to Mexico, I would go 
to Canada.

31. If I should see him, I should tell you.

The above sentences have has the same auxiliary in both 
clauses, but this is certainly not a restriction on 
simple conditionals, as illustrated by the following 
sentences with modals:

32. If the night was dark enough, he could 
have done it.

33. If I can get away, I'll go to Europe.

34. If Britain joins the Common Market, she 
might dispose of her nuclear armory.

There are some restrictions on the occurrence of modals 
in simple conditionals. What is traditionally called 
the 'conditional' modal would cannot occur.

35. *If anyone leaves in the next ten minutes, 
he would miss the most important examples.

Nor do they accept the 'future' will in the if-clause 
(as Hall pointed out).

36. *If they will (future) die, we will have 
a great wake for them.
37. *If they will (future) have died, we will have had a great wake.

There are occurrences of will and would in simple conditionals, but they are interpreted differently from the examples above.

volitional 38. If they will come to the conference table, we can present our proposal.

politeness 39. If you would (be so kind as to) turn off the lights, I will proceed with the program.

? 40. If the market is rising, selling the stock would be a mistake.

habitual 41. If I had enough money, I would go to the movies; if not, I would stay home and play pinocle with Aunt Bessie.

There appears to be few restrictions on the auxiliaries although some combinations provide a challenge for the imagination. If the if-clause indicates past time, there is a wide range of possibilities in the then-clause.

42. If we've made the right calculations;

a. the rocket will not reach Mars for three days.
b. the rocket will not have reached Mars yet.
c. the rocket has not reached Mars yet.
d. the rocket didn't reach Mars.
e. the rocket hadn't reached Mars when the break in communication occurred.
It's when the *if*-clause indicates future time that we have to 'work' a little to find appropriate interpretations for past time consequents.

43. If he comes,
   a. the clerk will wait on him.
   b. the clerk waited on him.
   (if he doesn't come, then the clerk didn't wait on him)
   c. the clerk had waited on him.
   (that's a sign that the clerk had waited on him
   (when he was supposed to)).

Two forms that do not occur in simple conditionals (or in simple declarative sentences) are singular *were* and *were to* in the *if*-clause:

44. If Tom was early, he played checkers.
45. *If Tom were early, he played checkers.
46. *If Tom were to be early, he played checkers.
(We point this out only to contrast simple conditionals with imaginative conditionals which do allow these forms).

Simple conditionals allow questions, imperatives, and performatives in the consequent, though not in the antecedent. (Since performatives require present time and imperatives require present or future, we do not get a wide range of tenses with them.)

47. If I {hurt have hurt} your feelings, then I beg your forgiveness.
48. If Sharon comes, tell her I said 'Hi'.

49. If Jana is coming at two, you'd better get to
work.

50. If Goodell wasn't a radical-liberal, what was
he?

3. **Syntactic Properties of Imaginative Conditionals**

   The surface structure restrictions in imaginative
conditionals are much tighter than those in the simple
conditionals. The most obvious difference is that all
imaginative conditionals require a modal in the
consequent. The present subjunctive conditionals are
limited to the following choices in the auxiliary.

   **no modal in if-clause**

   71. If you got \{ got \} an A in the exams, you

   \{ would \}

   \{ could \}

   \{ should \}

   \{ might \}

   an A in the course.

   **modal in if-clause**

   72. If you could \{ could \} break the dish, I

   \{ would \}

   \{ could \}

   \{ should \}

   \{ might \}

   fix it.

Notice that the modal **might** can't occur in the if-clause,
and **were to** can't occur in the then-clause.

53. *If you **might** get an A in the exam, you'd get
an A in the course.

54. *If you got an A in the exam, you **were to** get
an A in the course.
The past subjunctive conditionals allow the following surface structure possibilities:

**no modal in if-clause**

55. If you {had been singing}, I {would have}
    {been enjoying} it.

**modal in if-clause**

56. If you {could have invested in that company},
    {should would} have made a million dollars.

Again, *might* cannot occur in the *if*-clause. There is a were-to that can occur in the *if*-clause of counterfactuals, but I think it is the past form of be to which expresses some idea of expectation rather than the hypothetical were-to that occurs only in the subjunctive.9

57. If you were to have performed, your name would
    have been on the program.

*Were to* is a subjunctive form in either meaning and no subjunctive form can occur in the consequent.

58. *If he had sung, he were to have been paid.

In both of the imaginative types, *would* cannot occur in the *if*-clause, and *will* can't occur in either clause (as the Hall analysis shows).

59. *If the Yankees {will} win the pennant, they {would vacation}
    {would have vacationed} in the Bahamas.
If you *had gotten* dirty in the mud, you will be spanked.

Several important facts emerge from these descriptions:

(i) The conditional modal *would* does not occur in the *if*-clauses of imaginative conditionals.

(ii) The conditional modal *would* does not occur in either clause of simple conditionals.

(iii) The future modal *will* does *not* occur in *if*-clauses of simple conditionals.

(iv) The future modal *will* does not occur in either clause of imaginative conditionals.

If we assume that *would* is *will* + *past* then we are dealing with the same modal in all four cases.

Hall has already provided arguments for the claim that *will* can occur in the underlying structure of the *if*-clauses of unreality conditionals. We propose that this claim be strengthened: that all unreality conditionals must have an underlying *will* in the *if*-clause. We can call this *will* the 'unreality' marker in conditional sentences. Every conditional that indicates unreality, both the future simple conditionals and the imaginative conditionals has an underlying *will* in the *if*-clause. The future simple conditional contains *will* + *present tense* (will); the imaginative conditionals contain *will* + *past tense* (would). The *will*-deletion transformation
proposed by Hall will be obligatory for all unreality conditionals.

61. If John + present + will (unreal) + come, I + present + will + go ⇒
If John comes, I'll go.

62. If John + past + will (unreal) + come, I + past + will + go ⇒
If John came, I would go.

63. If John + past + will + have + come, I + past + will + have + go ⇒
If John had come, I would have gone.

In a simple conditional like (61) above, if present tense verb occurs in the if-clause, it is derived from an underlying 'unreality' will in just those cases (as above) where the conditional has an 'unreal' interpretation. In other cases, such as the sentence below, the plain present tense represents the underlying form:

64. If Jana + present + have + the measles, Leslie + present + will + get them too. ⇒
If Jana has the measles, Leslie will get them too.

What are the advantages of this analysis? First, if we assume that the deep structure contains all meaning-bearing elements, then in this analysis we have will which indicates 'unreality' - as much a part of the meaning of a sentence as tense, for example. Just as this
unreality marker cannot be part of the underlying structure for present and past time declarative sentences, it also cannot be part of the underlying structure for present and past time simple conditionals.

This analysis provides an explanation for the fact that in some dialects would does occur in the if-clauses of counterfactuals:

65. If he would have come, I would have been happier.

We can claim that my dialect and the dialect which allows this would have the same underlying structure, but that this dialect either does not have a will-deletion transformation or that the conditions for its deletion are different.

If we adopt this analysis for all unreality conditionals, we find there is no need for an auxiliary shifting rule (as proposed by Hall) to add have + en to counterfactual if-clauses, and past tense to subjunctive if-clauses. For example, the auxiliary shift rule is applied to the (66a) and (67a) clauses below to get the correct surface structures as in (66b) and (67b).

66a. If I know all the answers right now...
66b. If I knew all the answers right now...

67a. If I finished this in an hour yesterday...
67b. If I had finished this in an hour yesterday...
But if we assume the underlying forms are as in (68a) and (69a), then once will-deletion has applied we are left with the appropriate surface structures, as in (68b) and (69b).

68a. If I + past + will + know all the answers right now...

68b. If I + past + knew all the answers right now...

69a. If I + past + will + have + en + finish this in an hour yesterday.

69b. If I + past + have + en + finish this in an hour yesterday.

Assuming then, that there is an underlying will in imaginative conditionals, we can characterize the structures underlying present subjunctives and past subjunctives as follows:

Present Subjunctive:

if[... past + M(be + ing) Verb ...],
then[... past + M(be + ing) Verb ...]

Past Subjunctive:

if[... past + M + have + en (be + ing)Verb...],
then[... past + M + have + en (be + ing)Verb...]

Where M may be can, will, shall in both if-clause and then-clause, be to in the if-clause, and may in the then-clause (with the exceptions noted).

Although we have been talking only about will/would
being the marker of unreality in conditionals, much the same can be said about shall/should, can/could. I suspect that will/would is somehow the basic modal, while shall/should and can/could are 'composed' of will/would plus some additional semantic element. Notice that the should in imaginatives is a variant of would in the same way that shallis a variant of will in future simple conditionals. Also, all of these modals appear to be 'epistemic' modals.

The syntactic distinction between present and past subjunctives is the absence or presence of have. When the modal is will and is deleted by the will-deletion transformation, the surface structure difference between present subjunctive and past subjunctive if-clauses is the following:

Present Subjunctive:

If + John + past + will + come \( \Rightarrow \) if John came.

Past Subjunctive:

If + John + past + will + have + come \( \Rightarrow \) if John had come.

The semantic distinction that the presence of have adds is 'past time'. This is not the only case where have is the maker of semantic 'past time'. One is the nominalization mentioned by Hall: 'his having stolen the goods.' Another is with deontic modals. The following sentences illustrate this:
70. He should have left yesterday.
71. He should leave today.

Essentially, the auxiliaries in the two clauses of present subjunctive and past subjunctive conditionals must be the same, except that the choice of be is optional:

72. If John should [be singing] Mary should [be dancing]
73. If John had [been singing] Mary would have [been dancing].

This points up another big difference between imaginative counterfactuals and simple conditionals. The sequences of auxiliaries in the imaginatives are much more limited.

Some imaginatives are a combination of an if-clause from a past subjunctive and a then-clause from a present subjunctive. Others reverse this order: an if-clause from a present subjunctive and a then-clause from a past subjunctive.

Past subjunctive/present subjunctive:
74. If you had gotten an A in the exam, you'd get an A in the course.
75. If Germany had won the war, we'd all be eating limburger cheese.

Present subjunctive/past subjunctive:
76. If Sam resented your going, we'd have heard about it.
77. If I were rich, I would have gone on a world tour.
These combinations are limited and it is not clear to me why this is so. The following sentences show their general inappropriateness:

78. *If North Vietnam entered the war, we'd have sent planes.
79. *If the train had come, we would miss it.
And certainly, no imaginative clause can occur with any simple clause.

80. *If the train has arrived, I would choose a seat on it.
81. *If Japan had started the war, the United States had finished it.

Finally, imaginatives do not allow performatives and imperatives in the consequent, although questions are acceptable.

82. What would you have done if I had spilled this gravy on your white dress?
83. If you knew the answer, don't tell a soul.
84. If you hadn't heard the story, I promise to tell you.

These restrictions occur because imperatives and performatives cannot have past tense forms whereas imaginatives must have past tense forms. Since questions are not so restricted, they can occur in imaginative sentences.

We have not mentioned volitional will/would above
because it is problematic. It seems to be peculiarly restricted to the if-clauses of present subjunctive conditionals and future simple conditionals. In a past subjunctive conditional, it is ungrammatical:

85. *If Sam would (volitional) have submitted to the operation, he wouldn't have died.

When the subject of both clauses is the same, the second will/would cannot be volitional.

86. *If she would (volitional) take her pills, she would (volitional) get well faster.

If two volitional woulds occur at all, it's only possible when the subjects of both clauses are different.

87. If they would sing, we would dance.

88. If General Motors would market an exhaust free car, we would buy one.

It's difficult to decide whether the would in the consequent is volitional or not. If not, then it is a lexical exception, like were-to, with a highly restricted distribution.

This analysis, in which an underlying will is posited for the if-clauses of all unreality conditionals is simpler and more general than the earlier proposal, and more intuitively satisfying. It is simpler in that a rule has been eliminated, the auxiliary shifting rule (We have seen there is no need for such a meaning bearing transformation in this instance. And this throws
doubt on other auxiliary shifting rules that have been proposed.) It is more general insofar as it shows the likeness of all the unreality conditionals. We see also that will-deletion applies to a much larger group of sentences. Finally, it provides us with a way of marking in the deep structure the intuitively felt unreality which all native speakers sense, and provides us with an explanation for the fact that we don't sense this unreality in present and past simple conditionals.

4. Semantic Interpretation of Imaginatives: the Negation of the Antecedent

We have earlier stated that counterfactuals are conditionals in which we interpret the antecedent as being strongly negated. There has been a good deal of discussion about what to call this interpretation. A recurring claim among philosophers is that counterfactuals entail the negation of their antecedents.12 A recurring claim among linguists is that counterfactuals presuppose the negation of their antecedents. Is either claim right? Are both claims right? I do not have the answer to these questions. But I shall try to point to the difficulties that I see connected with each claim.

The first question that arises is: What is it to say a counterfactual is either true or false? It doesn't seem to be the case that we can base the truth value of a counterfactual on the truth values of its clauses.
Let's assume that we can say all antecedents of counterfactuals are false. We shall see that there are presuppositional consequents which have zero (or no) truth value, and that there are neutral consequents which are false. (see section 5) Yet the following counterfactuals, a presuppositional one and a neutral one, both seem to be true in some sense.

89. If that piece of butter had been heated to 150°F., it would have melted.

90. If the Democrats had won the election, they would have a majority in Congress. (in the case where winning the election would in fact give them a majority).

Intuitively, we can say that a counterfactual is true when the connection between its antecedent and its consequent does hold. And it is false when the connection does not hold. The problem is to formalize this intuition, and no one has done that yet.\textsuperscript{13}

Returning to the entailment claim, we can assume that the terms entailment and logical implication are equivalent, and make use of Keenan's definition of the latter. In that definition, a sentence S implies a sentence S' just in case S' is true in every world in which S is true. We can call the following counterfactual S, and the negation of its antecedent S'.

91. If Bill had missed the kick, we would have
lost the game.

(Remember the claim is that its the negation of the antecedent which is entailed.) Then whenever the whole counterfactual is true the negation of the antecedent must be true too in order for entailment (logical implication) to hold. This leads us right back to the question: Under what conditions do you say a counterfactual is true?

Remember that there was a somewhat more restrictive claim for entailment used by Austin and Fillmore (and others). It was such that if S entails S', then \( \neg S' \) entails \( \neg S \). Applying this test to the above counterfactual we have the following:

\[
\neg S' \quad \neg S
\]

Bill missed the kick. entails It's not the case that if Bill had missed the kick we would have lost the game.

I can't think of anyone who would want to claim that this is an instance of entailment, so that if we ever do want to conclude that counterfactuals entail the negation of their antecedents, it will not be entailment as defined and used by Austin, etc. It will more likely be entailment as defined by Keenan (or some comparable definition).

Now we turn to the claim that counterfactuals presuppose the negation of their antecedents. Again, if we use the Keenan definition of presupposition, which is

\[86\]
based on the definition of entailment (his logical implication), we find ourselves back in the same bind. Sentence S presupposes sentence S' just in case S' is true in every world in which either S or its strong negation ~S, is true. There is a sense in which it seems appropriate to say that a counterfactual presupposes the negation of its antecedent, and that is to think of presupposition as a relation between the use of a sentence the conditions that have to be met in order to use the sentence appropriately on a certain occasion. For example, we only say the following counterfactual when we know that the situation described by the antecedent does, in fact, hold.

92. If McCarthy had won the presidency, we'd be out of Vietnam by now.

Presently, I feel that we should reserve the term presupposition for just those cases in which we can say there is a relation between two sentences, S and S', such that to say that S presupposes S' means that S' is true whenever S or its strong negation is true as Keenan claims. If we don't restrict the term in some way similar to this, it becomes less meaningful.

As far as the claims with which we started out this section are concerned, much more work has to be done before I think I have enough evidence to decide on them. We might work in two directions for a solution. Perhaps
we can define truth for a counterfactual. And if not, perhaps we can base the definitions of presupposition and entailment on something other than truth conditions.

5. **Semantic Interpretation of Past Subjunctive**

Consider the following:

93. If Humphrey had won in California, he would have won the election.

94. If my brother hadn't arrived, I wouldn't have gone to the party.

95. If they had had twins, they'd have named them Tom and Jerry.

96. If Samuel had been a girl, he wouldn't have been a beautiful girl.

For all of these sentences, a part of the meaning is that the state of affairs expressed by the strong negation of the antecedent holds. That is, we interpret them as 'if X then Y and not X'. In (93) and (94), the strong negation of the consequent holds also.

93a. He did not win the election.

94a. I went to the party.

If the strong negation of Y holds in these cases, Y is false. This is not the case for sentences (95) and (96). In these sentences, we cannot say that the state of affairs expressed by the strong negation of the consequent holds. In sentence (95) we cannot interpret the consequent as 'they didn't name them Tom and Jerry', nor can we interpret it as 'they named them Tom and Jerry'. In
(96) also, the strong negation 'he was beautiful' definitely does not hold, nor can we interpret this sentence to mean 'he wasn't beautiful'.

The denial of the antecedent in these cases prevents the consequents from having a truth value. In other words, the interpretation of the antecedent is such that the proposition expressed by the then-clause, the consequent, cannot be given a truth value. The consequent can be neither true nor false. In fact, we distinguish between consequents which are false, and consequents which have no truth value.16

The question of a distinction between falseness and absence of a truth value has been encountered in the philosophic arguments over definite descriptions and proper names. What precipitated this argument was the case where the presuppositions of a sentence were unfulfilled: Strawson claiming that this would result in a sentence with no truth value, Russell that it would result in a false sentence. Russell's argument amounts to the claim that there are two ways that sentences (of the type he was discussing) could be falsified: one way is when the predicate cannot be applied to the subject, and the other way is when the presuppositions of the sentence do not hold. Strawson, on the other hand, claimed that in the case where the presuppositions do not hold, the sentence can have no truth value. Keenan
constructed his three-valued logic to account for just this three-way distinction.\(^\text{17}\)

Sentences like (93) and (94), which we shall call 'neutral' counterfactuals, for lack of a better term, can be closely paraphrased by declarative sentences in at least two ways.

(i) the strong negation of the consequent followed by the strong negation of the antecedent functioning (I think), as non-restrictive 'because' clauses:

93b. Humphrey didn't win the election, because he didn't win in California.

94b. I went to the party, because my brother arrived.

(ii) the strong negation of the antecedent followed by so followed by the strong negation of the consequent:

93c. Humphrey didn't win in California, so he didn't win the election.

94c. My brother arrived, so I went to the party.

We can definitely not paraphrase (95) and (96), which we call 'presuppositional' counterfactuals in the same way.

95a. *They didn't name the twins Tom and Jerry because they didn't have them.

96a. *Samuel was a beautiful girl, because he wasn't a girl.

Perhaps some more examples will make this distinction clearer.
97. If John hadn't missed the kick, we would have stopped their march to the Rose Bowl.

98. If Henry jumped out the window, he'd have been hurt.

From (97) we conclude (97a).

97a. We didn't stop their march to the Rose Bowl, because John missed the kick.

But we cannot conclude from (98) that (98a) holds.

98a. Henry wasn't hurt, because he didn't jump out the window.

We cannot hold the 'Henry was hurt' is true, or that 'Henry wasn't hurt' is true. The most that we can claim here is that 'Henry wasn't hurt as a result of jumping out the window because he didn't jump out the window.'

The distinction between the presuppositional sentences in which the consequent has zero truth value, and the neutral sentences in which the consequent has the value false is dependent on whether or not the consequent presupposes the antecedent.

When the consequent presupposes the antecedent, and the strong negation of the antecedent holds (as is the case in every counterfactual), the presupposition of the consequent fails and the consequent has zero truth value. When the consequent does not presuppose the antecedent, then the interpretation of the antecedent does not affect the interpretation of the consequent.
Another noteworthy difference between these presuppositional and neutral sentences is that in all the neutrals, the consequent has the value false regardless of whether you have the affirmative or negative version of the antecedent. This is further evidence for the claim that in the neutrals, the consequent does not presuppose the antecedent.

99. If we hadn’t followed that policy, World War II wouldn't have begun.

In both sentences the strong negation of the consequent 'World War II began' holds because in neither case is the truth value of the consequent dependent on the antecedent. But if you strongly negate the antecedent of a presuppositional sentence, the result is a contradictory sentence. (By contradictory sentence I mean the case where what's presupposed is semantically incompatible with the presupposer, the consequent.)

100a. If they had gotten married I would have gone to their wedding reception.

100b. *If they hadn't gotten married I would have gone to their wedding reception.

101a. If there had been a King of France, he would have been bald.

101b. *If there hadn't been a King of France, he would have been bald.¹⁸

There are apparent counterexamples to the claim
that the negation of the antecedent of presuppositional counterfactuals is contradictory. If (102a) is presuppositional, you shouldn't get (102b).

102a. If Henry had jumped out the window, he'd have been hurt.

102b. If Henry hadn't jumped out the window, he'd have been hurt.

These sentences are quite different, because (102b) is not just the strong negation of the antecedent of (102a) as it appears. (102a) means 'if Henry had jumped out of the window, he'd have been hurt as a result of jumping out of the window'. (102b) means 'if Henry hadn't jumped out of the window, he'd have been hurt (by the fire, for example). The real negation of the antecedent of (102a) is in fact contradictory.

102c.*If Henry hadn't jumped out of the window, he'd have been hurt as a result of jumping out the window.

Let us review the distinctions between these sentences:

**Presuppositional sentences**

(i) antecedents are presuppositions of consequents
(ii) consequents have zero truth value
(iii) cannot be paraphrased by declarative sentences with 'so' or 'because'
(iv) replacing the original antecedent by its strong negation leads to a contradiction.
Neutral sentences

(i) antecedents are not presuppositions of consequents
(ii) consequents have a truth value - the value false
(iii) can be paraphrased by declarative sentences with 'so' and 'because'
(iv) replacing the antecedent with its strong negation still leaves an acceptable sentence.

We now turn to a consideration of factive verbs in counterfactual conditionals. Since declarative sentences with factives are so obviously presuppositional, we wondered what would happen when the factive complements were embedded in counterfactuals. We shall first consider factives in antecedents.

103. If Sue had realized that something was going on, she wouldn't have accepted the invitation to speak.

104. If Sam had been aware of the fact that Kennedy died, he'd have cried.

The complements of these factives hold. Just as in declarative sentences, we interpret the complement of realize as 'something was going on' and we interpret the complement of be aware as 'Kennedy died'. The factive verbs themselves are interpreted as being strongly negated (the normal interpretation of main verbs in counterfactual antecedents). This is predictable since as we have seen; the primary characteristic of factives and
their complements is that the latter are said to be 'true' or to 'hold' regardless of whether the verb is negated or not. Apparently, factives in antecedents have no special effect on consequents, since we get both the neutral type as in (103), and the presuppositional type as in (104).

The occurrence of a factive as main verb in the consequent provides further evidence for our earlier claims (about presuppositional sentences) and also some unexpected results. One situation, exhibited by the following sentences, occurs when the complement of the factive refers to something other than the situation in the antecedents.

105. If I had missed the convention, I would have regretted writing the speech.

106. If you hadn't made a fuss, I would have ignored the fact that he stole the candy.

In these sentences, the interpretation of the consequents is that the strong negation of the factives hold, (i.e. I didn't regret, and I didn't ignore,) and that the complements of the factives hold too, (i.e., I did write the speech, and he did steal the candy). Since the presuppositions of these factives may be fulfilled, the consequents have the value false. Since these consequents do not presuppose the antecedents, (although they do presuppose), these sentences are simply neutral
counterfactuals.

The interesting cases occur when the factive in the consequent is followed by the word it. (We must first eliminate from consideration those sentences where the it refers to something not in the sentence. They are of no interest to this analysis.) What is of interest is when the it refers back to the antecedent, or to something in the antecedent. In some instances the it refers back to the whole antecedent, which does not itself contain any presupposed clause.

107. If you had made a fuss, I would have ignored it.
108. If Henry had left, Susan would have resented it.

In these sentences, the consequent presupposes the antecedent. Since the interpretation of the antecedent is that its strong negation holds, the presupposition of the consequent fails, and the consequent as a result has zero truth value. Predictably, the 'because' paraphrase is not possible.

107a. 'I didn't ignore a fuss, because you didn't make it.
108a. 'Susan didn't resent Henry's leaving, because he didn't leave.

But look what happens in the following sentence:

109. If John had heard about the fact that Sam stole the candy, he'd have resented it.

In this sentence, the reference of the it is ambiguous.
Both (109a) and (109b) are possible replacements for the consequent in (109).

109a. He'd have resented hearing about the fact that Sam stole the candy.

109b. He'd have resented the fact that Sam stole the candy.

When the reference of it is the whole antecedent as in (109a), we interpret the consequent as having no truth value. Since the consequent presupposes the whole antecedent, and since the antecedent is strongly negated, we have a typical presuppositional counterfactual.

The (109b) interpretation is a neutral counterfactual. We interpret the consequent as being strongly negated, and we can paraphrase the whole sentence by (109c).

109c. John didn't resent the fact that Sam stole the candy, because he didn't hear about it.

Notice that 'the fact that Sam stole the candy' is the presupposed part of the antecedent. And it holds even though 'hear about' is interpreted as strongly negated. 'the fact that Sam stole the candy' is also presupposed by the consequent in this case. Since it holds in the antecedent, we can say that the presupposition of the consequent is fulfilled, and the consequent has a truth value.

It appears that (108) and (110) are counterexamples
to the earlier claim that if you strongly negate the antecedent of a presuppositional sentence the result is a contradiction. The \textit{it} in these cases obscures the meaning.

110. If Henry hadn't left, Susan would have resented it.

This sentence in one sense is not contradictory. But in that sense, it is also not the strong negation of the antecedent of (108). We can see this by replacing the \textit{it} in (108) with the underlying structure. The real strong negation of the antecedent of (108) is:

108b. If Henry hadn't left, Susan would have resented that Henry left.

This is contradictory and the claim holds. A paraphrase of (110) which is noncontradictory is:

110a. If Henry hadn't left, Susan would have resented that he didn't leave.

This is a straightforward presuppositional sentence.

We note in passing the difference between \textit{implicative} factive verbs in counterfactual \textit{if}-clauses. Implicative verbs do not 'hold onto' the factiveness of their complements as the factives do. This demonstrates again my earlier claim that implicative verbs do not presuppose.

\textbf{factive} If he had been aware of her presence...

\textbf{a. he was not aware}
b. she was present.

**implicative**

If he had managed to lock the door...

a. he didn't manage

b. he didn't lock the door.

**negative implicative**

If he had forgotten to take his pill...

a. he didn't forget

b. he took his pill.

I find nothing special about implicatives in **then**-clauses.

We can use these implicatives to show more clearly the presuppositional aspects of the anaphoric *it* found in (lll). Consider these sentences:

llla. If he had managed to catch a fish, he could have eaten it for supper.

lllb. *If he hadn't managed to catch a fish, he could have eaten it for supper.

ll2a. *If he had forgotten to catch a fish, he could have eaten it for supper.

ll2b. If he hadn't forgotten to catch a fish, he could have eaten it for supper.

The *it* in (llla) presupposes the antecedent 'he managed to catch a fish' and not the interpretation of the antecedent 'he didn't manage to catch a fish'. (lllb) is funny because *it* refers to a fish whose existence is denied by the antecedent though not by the interpretation of the antecedent. The reverse holds true in
(112) because forget is a negative implicative verb. Notice that even though the presupposition of it in (111a) and (112b) are fulfilled, the whole consequent presupposes the whole antecedent and therefore has zero truth value.

To review, we have now seen that in all past subjunctives we interpret the antecedent as being strongly negated. In some past subjunctives the consequent does not presuppose the antecedent; these consequents (eg., (97)) can have the value 'false'. In some cases the consequent presupposes the antecedent. Since the antecedent is interpreted as strongly negated, we conclude that the consequents cannot have the value 'true' or 'false'. These consequents (eg.(98)) have zero truth value. In other cases the consequent presupposes some part of the antecedent rather than the whole antecedent. We might call this anaphoric presupposition. If the antecedent is such that the presuppositions of the consequent are fulfilled, then the consequent (eg.(109b)) has the value 'false'. If not, then again the consequent has zero truth value (eg.(109a)).

6. Semantic Interpretation of Present Subjunctives

Some present subjunctives are hypothetical, others are counterfactual. Among the hypothetical present subjunctives, some are presuppositional and some are neutral. And among the counterfactual present subjunctives, some
are presuppositional and some are neutral.

By 'counterfactual' I mean the interpretation in which the antecedent is strongly negated. The following present subjunctive conditionals are counterfactual.

113. If Leon played the bassoon, I would get him a job in a good orchestra.

114. If Leslie were singing in the bathroom, we'd hear her.

115. If you knew her, you'd love her.

These sentences, in at least one interpretation are appropriately characterized by: 'I assert that (if X then Y) but not X'.

The hypothetical interpretation can be characterized by something like 'I assert that in the (other) world in which X, then Y'. One does not get a sense of the negation of the antecedent here.

116. If they came to power, they'd clean out the statehouse.

117. If John performed tomorrow, he might get a chance to study at the conservatory.

118. If Sam resented it, he would show no sign of it.

There is a possible syntactic fact which corresponds to this semantic distinction. The hypothetical sentences don't allow past time verbs very well, and the counterfactual sentences don't allow future adverbs very easily either. So if we add the future adverb next week to
(114), we get the peculiar sentence:

119. If Leslie were singing in the bathroom next week, we'd hear her.

And if we add the past adverb last week to (116) we get another peculiar sentence:

120. If they came to power last week, they'd clean out the statehouse.

Many present subjunctives are clearly ambiguous with both hypothetical and counterfactual interpretations possible.

121. If he were aware of having a cavity he'd have it filled.

In the counterfactual interpretation he isn't aware of having a cavity. In the hypothetical interpretation the speaker is claiming he is that kind of person. Mere awareness of a cavity would prompt him to have it filled.

Another ambiguous sentence is the following:

122. If you understood Hebrew, you'd be able to go to Israeli schools.

In the counterfactual case you can conclude that since you can't understand Hebrew you can't go to Israeli schools. In the hypothetical case, this might be the answer to someone who says he's going to Israel next year and asks if he'll be able to go to Israeli schools.

Notice that in the counterfactual cases, the semantic time is 'present'. In the hypothetical sentences it's hard to speak of the semantic time. Time seems irrelevant in
hypothetical sentences even though time adverbs can occur.

The distinction that was found in the past subjunctives between presuppositional and neutral sentences can also be found in the present subjunctives, cutting right through the hypothetical and counterfactual distinctions.

**Hypothetical present subjunctives**

presuppositional 123. If they had twins, they'd name them Tom and Jerry.

neutral 124. If Humphrey won in California, he'd win the election.

**Counterfactual present subjunctives**

presuppositional 125. If Sam were a girl, he wouldn't be beautiful.

neutral 126. If you knew her, you'd love her

The murkiest area is the dividing line between future simple conditionals and hypothetical present subjunctive conditionals. I have claimed elsewhere that their interpretations are as follows:

**simple future conditional:** If 'X' then the speaker that 'Y'

**hypothetical present subjunctive conditional:** Speaker asserts that in the world in which 'X', then 'Y'.

Certainly from these 'interpretations' one does not get a clear picture of the difference. Perhaps a few pairs of examples will give the reader a 'feel' for the difference, since it is hard to state the difference.
Simple:
127. If the night is dark enough, he can do it.

Subjunctive:
128. If the night were dark enough, he could do it.

Simple:
129. If they come to power, they'll clean out the statehouse.

Subjunctive:
130. If they came to power, they would clean out the statehouse.

If we consider the use of these sentences, there is a subtle distinction that can be made. A speaker can never use a simple conditional if he knows the antecedent is not true (unless he is misleading someone or using the Socratic method to teach someone):

131. If this sheet of film floats, we'll be able to use it in our experiment.

No simple conditional can be interpreted as 'if X then Y) and ~X'. The subjunctive conditionals allow that possibility in many instances (except where future adverbs are present or where it is difficult to use a verb in the simple present).

In contrast, the speaker can never use a subjunctive conditional if he knows that the antecedent is true. So in the case where I am the mother of 'those children', I cannot say:
132. If those children were mine, I'd treat them better.

Or if I am pointing at Peter's dog and I know it's Peter's dog, I cannot say:

133. If that were Peter's dog, it would have a white spot on its forehead.

In addition, (133) cannot be said of a dog which has a white spot on its forehead which the speaker sees. This would indicate that subjunctives can't be used in situations where the speaker knows the consequent is true either.

To summarize, a speaker can use a simple conditional only when he does not know the antecedent to be false. A speaker can use a subjunctive only when he does not know the antecedent to be true. For any antecedent which the speaker does not know to be either true or false, he can use either. There will be no difference in truth-conditions for pairs like (127-128) and (129-130).

7. Unreality and other Syntactic Constructions

In the course of working out an analysis of imaginatives, I have come across several constructions which seem to be related to them in some way. The similarities are in two main areas: ways of expressing unreality, and ways of expressing past time.

Jespersen has already pointed out that a number of languages use the preterite to denote unreality
(eg. Greek, Armenian, Slav, French, Danish). But as we have seen, there are different kinds of unreality and we do not use the simple past to express all of them. Taking the unreality conditionals as an example, we find the following generalizations can be made about their if-clauses:

(i) We use the present form of the verb to indicate future unreality:

   If Johnnie comes home from the war...

(ii) We use the simple past form of the verb to indicate hypothetical or present unreality:

   If Johnnie came home from the war...

(iii) We use the pluperfect (past + have + en) to indicate past unreality:

   If Johnnie had come home from the war...

The indication of unreality, in these clauses at least, can be viewed as the process of taking one step backward in time and using the grammatical form corresponding to it.

But consider the then-clause of the imaginatives. They indicate unreality just as much as the if-clauses do. And what they all have in common is the modal will/would.

134. If Johnnie comes home from the war, I will marry him.

135. If Johnnie came home from the war, I would...
136. If Johnnie had come home from the war, I would have married him.

Now given the traditional Chomskian analysis of modals, with will being present + will and would being past + will, we can see that what occurs in the surface structure of the if-clauses is the result of the will-deletion transformation.

134a. Present + will + Verb $\Rightarrow$ Past + Verb 'comes'
135a. Past + will + Verb $\Rightarrow$ Past + Verb 'came'
136a. Past + will + have + en + Verb $\Rightarrow$

Past + have + en + Verb 'had come'

So although Jespersen's observation has some truth in it, it is not comprehensive enough. I claim that we indicate unreality by using the modal will/would. This modal is deleted in some instances (if-clauses for example), and not in others. Just where and when this deletion takes place (in other constructions) will be discussed below.

Let us now take a look at some other syntactic constructions expressing unreality to see if we can find further substantiation for these claims.

There are certain verbs that require that their complements express unreality: wish, hope, and suppose are some. Each one of these verbs exhibits interesting characteristics. Wish requires that its complement be interpreted counterfactually (as being strongly negated):
137. I wish he hadn't married her
   (interpretation: he married her)

138. Paul wishes he knew of a good bookstore in town
   (interpretation: he doesn't know of a good bookstore in town)

The complements of wish use the simple past to indicate present unreality, and the pluperfect to indicate semantic past time. Compare the auxiliary forms of the wish complements with those of the factive verbs regret and know.

Present time 139. Sam wishes that his car was painted purple.

140. Sam regrets that his car is painted purple.

Past time 141. I wish he had tuned the piano.

142. I know he tuned the piano.

The form of the auxiliary in the complement of wish is the same as the form of the auxiliary in the corresponding imaginative if-clause. Compare the auxiliary forms of the complements of (137) and (138) with the auxiliary forms of the if-clauses in the conditionals (143) and (144).

143. If he hadn't married her, he could have been happier.

144. If he knew of a good bookstore in town, Paul
would use it.

These facts together indicate that wish requires that its complement, (like the imaginative if-clauses), have an underlying unreality will (+ past) which is obligatorily deleted. The unacceptability of the following sentences is then accounted for:

145. *I wish he will bring home the bacon.
146. *I wish he brings home the bacon.
147. *I wish he would have brought home the bacon.

(I would think that in those dialects in which would have is acceptable in past subjunctive if-clauses it is also acceptable here).

There are problems with this approach. We find sentences like the following:

148. I wish he would stop beating around the bush.
149. Louis wishes it would rain.
150. Percy wishes his rich aunt would die.

It appears at first that these woulds are volitional and not unreality; but I think (149) and (150) definitely are not. The interpretation of these three complements is hypothetical or future, and they look like the then-clauses of present subjunctives, but I have no explanation at all for them. The two forms which normally occur in present subjunctive if-clauses, were to and should do not occur in the complements of wish.

151. *Jana wishes Christmas were to come early this
year.

152. *Leslie wished it should come early too. Although the subjunctive were is acceptable.

153. I wish you were here.

It's interesting to compare the complements that wish allows with the complements that the semantically related verb hope allows. Hope seems to be much more like 'your average verb'.

154a. I hope he will play basketball for us.
154b. I hope he plays basketball for us.
154c. I hope he played basketball for us.
154d. I hope he had played basketball for us.

(154a) and (154b) are paraphrases, so maybe will-deletion is optional here. The complements in (154c) and (154d) seem to be just simple preterite and pluperfect (syntactically and semantically); I would claim there is no underlying will in these two.

The verb suppose is superficially like hope in simple declarative sentences:

155a. I suppose he'll drive safely.
155b. I suppose he drives safely.
155c. I suppose he drove safely.
155d. I suppose he had driven safely.

But notice that hope takes a simple present form with a future meaning and suppose doesn't. Suppose is often used as an imperative.20 And when it is, its complements
are all unreality complements, similar to, but not identical with, the complements of wish. Suppose allows all those forms peculiar to present subjunctive if-clauses, plus the past subjunctive forms, plus the future simple form.

156. Suppose he sees you.
157. Suppose she were standing here beside you.
158. Suppose you believed everything he said.
159. Suppose he were to turn around and see her.
160. Suppose he had found out your secret.

The interpretation of all of these complements is hypothetical. Suppose in the imperative requires that its complements be hypothetical.

This is another instance where if we posit an underlying will/would in these complements we can account for the unreality of the complements. Will-deletion has applied here also to prevent the ungrammatical sentences:

161a.*Suppose he will die before he writes his will.
161b.*Suppose he would die before he wrote his will.

The complements of suppose, like the complements of wish, use the pluperfect to indicate past time. Compare (160) with (162).

162. Suppose he found out your secret.

Jespersen has pointed the way toward a possible analysis of certain relative clauses by claiming that a condition is often implied in a relative clause and
giving the following sentences as examples:

163. Anything I did would only reflect on me.
164. Every caress I gave you would be a sin.

Notice that these sentences can be paraphrased by the conditionals:

165. If I did anything, it would only reflect on me.
166. If I gave you any caresses, every one of them would be sin.

The form of the auxiliary in the relative clause is the same as the form of the auxiliary in the if-clause. We can also find 'past-subjunctive' relative clauses which correspond to past-subjunctive conditionals.

167. Anyone who had been there would have seen it.
168. If anyone had been there, he would have seen it.

The semantic interpretation of each of these relative clauses is hypothetical, and corresponds to the semantic interpretation of the corresponding imaginative if-clause. Now look at the following sentences:

169a. Anyone who goes shopping tonight will find the stores very crowded.
169b. Anyone who went shopping tonight would find the stores very crowded.
169c. Anyone who had gone shopping tonight would have found the stores very crowded.
169d.*Anyone who will go shopping tonight will find the stores very crowded.

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(The quantifiers any, no, and Ø can all be interchanged here and the generalizations below will still hold. For the generic, substitute people for anyone above.)

Sentences (169a), (169b), (169c) appear to exemplify the three unreality conditionals, and (169d) shows us that will is unacceptable in these relative clauses. I conclude from this that the relative clauses in these sentences are derived from the corresponding unreality conditional and that will-deletion has applied. On the basis of the above evidence, this conclusion is a little shaky since we could just as well say that these relatives simply have an underlying will/would. But now consider these sentences, pointed out by Janet Dean.(1965)

170. The girl John brings to the party will be a blonde.

171. The girl John will bring to the party is a blonde.

The difference in meaning in these two relative clauses is that (171) indicates that the speaker knows what girl John will bring to the party while (170) indicates that the speaker does not have any particular girl in mind. He only knows that John prefers blondes. We could perhaps for this difference syntactically by claiming that the relative clause in (170) is derived from an underlying future conditional to which will-deletion has been applied, while the relative clause in (171) is derived
in the usual way from a simple declarative sentence.

The difference in the definiteness of the reference in sentences like (170) and (171) is not limited to the future time relative clauses. For me, the following sentences are also grammatical:

172. The girl John dated would be prettier than any of these girls.

173. The girl John dated would have been prettier than any of these girls.

So far, we have been concentrating on ways of expressing unreality. Now let us turn to the expression of past time that a number of constructions have in common with past subjunctive. A number of people have pointed out constructions in which have + past participle is used to express semantic past when this meaning must be expressed by a non-finite verb form.

After modals: he should have left yesterday.

In gerundive nominals: his having left yesterday...

In infinitival nominals: for him to have left yesterday...

All of these lend support to deriving past subjunctives, wish complements and suppose complements by way of will-deletion, since this will automatically account for the use of have to express past (that is, because have expresses past after modals), since the will is deleted, 'Past tense' automatically 'attaches' to have, and we
get the form *had*.

174. Suppose he *had* come.

175. I wish he *had* come.

176. If he *had* come...

There is one more construction which indicates unreality, and in which *have* indicates the past.

177. She's beautiful enough to *be* a model.

178. He's mean enough to hit little girls.

These sentence types use *have* to express past time in the complement of *enough*.

179. She's beautiful enough to *have* been a model.

180. He's mean enough to *have* hit little girls.

The interpretation of the complements of (177 - 180) is also hypothetical. (177) is not claiming that she is a model, and (178) is not claiming that he hits little girls. (179) leaves open the possibility that she was a model and (180) leaves open the possibility that he hit little girls. These interpretations are more tenuous than those in other examples, but they at least suggest an underlying *would* to indicate unreality, and *will*-deletion. This proposal is more attractive than the alternative I see, which is deriving the complement in (177) from the underlying 'she is a model' and the complement in (179) from the underlying 'she has been a model'.

We have seen that there are several syntactic constructions which deal with unreality. With regard to...
unreality conditionals, there are several good arguments for positing an underlying will/would and will-deletion transformation. In each of the other constructions there is a good possibility that this analysis is correct. The use of have as the marker of semantic past time is closely connected to the deletion of will. Possibly its use as a marker of past time is an indication that some modal has been deleted. At any rate the proposed analysis in this paper has helped to clarify the syntactic phenomena associated with unreality conditionals.
NOTES TO CHAPTER 3

1. I'm hedging at this point on the definitions of both the past and the present subjunctive conditionals. There are several other modals that can occur with imaginatives (see sec. 3) and there is a singular were in the if-clause of present subjunctives (see sec. 3). At this point I am only concerned with a general definition of these types.

2. The term subjunctive has also been used to indicate the simple form of the verb as in:

I suggest that you do that.

While I recognize that there is a relation between this sentence and the conditionals that I label subjunctive, I do not use the term subjunctive to refer to cases like this.

3. We need to separate the semantic terms 'hypothetical' and 'counterfactual' conditionals from the grammatical terms 'present subjunctive' and 'past subjunctive' conditionals because although all past subjunctives are counterfactual, present subjunctives may be either counterfactual or hypothetical.

4. I am aware that there are many interesting differences among past tense simple conditionals: in particular the interpretations of (17) 'If John hunted, I fished', (18) 'If Goldwater wasn't having any influence,
Fullbright wasn't either', and (24) 'If there was a happy man in the world that night, it was John Tunney.' Each one differs from the other two. I have nothing to say about these differences, but I use them in the text in the hope that they will intrigue someone.

5. There are some simple conditionals in which it is at least implied that the strong negation of the antecedent holds:

If Sue is beautiful, then I'm a monkey's uncle.

If Goodell is a radical, then Agnew is a liberal.

6. It has been suggested by Barbara Partee (personal communication) that the then-clause is in this case itself derived from an underlying conditional and that the would occurring in the surface structure of (20) comes from this underlying conditional, possibly of the form:

If you sold the stock, it would be a mistake.

She points out that there is another construction, in addition to the -ing phrase above, which is also interpreted conditionally, and that is the infinitival phrase, as in the sentence:

It would be a good idea to leave early.

This might be derived from the conditional:

If we left early, that would be a good idea.

7. When *be* occurs as the main verb in the *if*-clause with no modal, its form is *were*. I am treating it as a
lexical exception because it is at present the only form in which the subjunctive is distinct from the simple past.

8. The should in all the imaginative cases is a stylistic variant of conditional would, and is not to be interpreted as the 'moral' should.

9. I think that be to cannot occur in the subjunctive because of this hypothetical form were to. The past of be to does occur in simple conditionals, with an appropriate meaning:

If I was to be shot for it, I wanted to have my say now.

10. I claim that will only means will future when it is combined with a present tense marker:

He will come tomorrow (present + will + Verb).
If he comes tomorrow (present + will + Verb), I'll bake a cake (present + will + Verb).

11. This is a good place to point out that will + past tense is not meant to indicate that we're involved with past time conditionals, since this sentence is clearly not past time. I am simply using 'past tense' as a label for the formal difference between know and knew, have and had, etc.

12. We'll assume, for the sake of argument, that by 'counterfactual' these people mean a conditional in which we interpret the antecedent as being strongly
negated.

13. It seems as if you can only talk about truth conditions for conditionals by using other conditionals. For example, 'if a counterfactual conditional is ever true, then whenever it is true, the strong negation of the antecedent is also true.'

14. It's interesting to note that Keenan has not claimed that counterfactuals presuppose the negation of their antecedents, although he makes many other claims about presupposition. Although he does not say so, I speculate that he would not agree with the claim.

15. There is a possibility that at least some past subjunctives have hypothetical interpretations. The following dialogue is illustrative:

Speaker A: What if God had had two sons?

Speaker B: Well, if Jesus had already been born, the younger son would have been sent to medical school.

If these are possible at all, they are probably combinations of conditionals on top of conditionals.

16. As it turns out, Frege has made a similar claim in 'On Sense and Reference'. He says there are some conditional sentences in which the antecedent and the consequent are not separate, complete thoughts. It is only together that they form a whole thought. His example is:

i. If a number is less than 1 and greater than 0,
its square is less than 1 and greater than 0. He says this occurs when there is an indefinite indicator in the antecedent with a similar correlate in the consequent. In the above sentence the indefinite indicator is 'a number' and its correlate is 'its'. It is the indefiniteness which is responsible for the fact that the antecedent alone has no complete sense.

As another example he has the sentence:
ii. If iron were less dense than water, it would float on water.

Here, he says, the antecedent expresses one thought and part of another and therefore can't stand alone as a sentence with a truth value. The three thoughts expressed by this conditional are:

a. Iron is not less dense than water.

b. If anything is less dense than water, it floats on water.

c. Iron does not float on water.

He points out that no combination of two of these three thoughts is equivalent to the meaning of the conditional. (ii) is like the examples I have been discussing because in it the negation of the antecedent must be taken into account. Where I would say the consequent can't be true or false because it presupposes the antecedent and the negation of the antecedent holds, he says the component clauses don't each have a truth value because the
subordinate clause expresses one whole thought and part of another.

17. There are advantages and disadvantages to having a three-valued logic as opposed to a two-valued logic. One disadvantage of the three-valued logic is that you have to discard the 'law of the excluded middle', which says that 'p or ~p' is a tautology. You have a much simpler logic if you can say 'if p is false, then ~p is true', as one can do with a two-valued logic. One advantage of the three-valued logic is that there are many sentences which don't fit neatly into a two-valued logic. We can give a more intuitively satisfying account of them with a three-valued logic. A sentence whose presuppositions fail is a case in point. For a linguist, with his emphasis on intuitions, a three-valued logic seems more appropriate. For a logician, which his emphasis on simplicity, a two-valued logic probably seems more appropriate. As a linguist, I want to claim that Keenan's logic is best for my purposes and that the consequents in (95) and (96) should be assigned the value 'zero'.

18. (100b) and (101b) are actually quite complex. The presupposition of the consequent is semantically incompatible with the consequent, as I have suggested, but we interpret the presupposition as being strongly negated because it is the antecedent of a counterfactual. This should make a perfectly appropriate sentence, but it
certainly doesn't. For example, if we interpret the antecedent of (100b) as claiming that they did get married, then going to their wedding reception should be appropriate. And yet the sentence is contradictory.

19. *Were to* is the prime hypothetical modal. I can construct no present subjunctive conditional with *were to* in the antecedent which is interpreted negatively.

*If John were to play the violin, which he \{isn't, \}
doesn't, \}
I'd pay him to serenade me.

20. It is not all that clear that it is a true imperative. It doesn't allow tags, for example:

*Suppose he comes, won't you?
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