

SOME ASPECTS OF PRESUPPOSITION
IN GENERATIVE GRAMMAR

by

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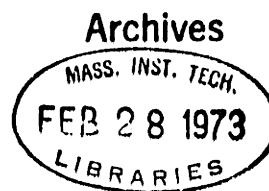
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Abstract

A presupposition of a statement S, or of the sentence which expresses it, is a proposition which is necessarily true whenever S is either true or false. Questions (interrogative sentences) and requests or orders (imperative sentences) also carry presuppositions, and so do utterances which explicitly express promises, christenings, etc. (explicitly performative sentences). Therefore it is necessary to expand the notion of presupposition to account for this. Presuppositions must be distinguished from conditions on the "appropriateness" or "good faith" of utterances. Each lexical item is associated with (possibly null) sets of entailment and presupposition schemata, which determine the logical consequences "triggered" by that item when it appears in a sentence.

A combination of entailment- and presupposition-triggering elements occur in sentences which contain indirect questions, making them rich in logical consequences. Indirect questions are viewed as clauses with the complementizer wh, embeddable under virtually all factive predicates and under a few non-factive "verbs of questioning." Only factive indirect-question sentences have an existential entailment or presupposition of belief (or knowledge) specifying that the subject of the upper sentence has an opinion (a true opinion, respectively) as to the answer to the embedded question. Certain co-occurrence restrictions, different for the two kinds of sentences containing indirect questions, can be accounted for in terms of the latter kind of entailment. Indirect-question sentences contain "referentially ambiguous" contexts, in which an indefinite NP can ordinarily be interpreted either as specific or non-specific; but the indefinite pronoun underlying the wh-word of an indirect question under a factive predicate must be interpreted uniquely as

specific if these logical consequences and others are to be accounted for.

The exhaustiveness constraint on answers to direct questions, which requires that they be complete (as well as correct) applies also as a truth-condition on sentences containing indirect questions. However, the exhaustiveness constraints on factive indirect questions cannot be expressed in terms of the factive main verb itself, but must rather be expressed in terms of universal epistemic and emotive "pro-forms." Exhaustiveness conditions on the truth of such sentences, like those on sentences containing plural definite NP's, must be expressed as presuppositions in disjunctive form, with one disjunct a condition on the truth and the other a condition on the falsity of the sentence.

It is necessary to define "(explicitly) performative sentence" in order to account for the meaning of such sentences; in particular, the notion "presupposition of a performative" cannot be defined until "performative" is. "Performative sentence" cannot be defined in purely syntactic terms nor in the purely semantic terms of conditions on the truth of statements. Rather, it must be defined in terms of the illocutionary acts a sentence can be used to perform. The presuppositions of a performative sentence are defined as the preparatory conditions on the successful performance, by an utterance of that sentence, of the illocutionary act corresponding to its performative main verb. This definition will allow us to characterize "presupposition" in a unified manner for all kinds of sentences.

Non-performative sentences may also be used to perform illocutionary acts; the illocutionary acts which a sentence may be used to perform correspond to the "(potential) illocutionary forces" of the sentence. The set of illocutionary forces of a sentence S cannot be accounted for adequately by the assumption that S has n underlying representations, each consisting of a performative sentence with one of the n illocutionary verbs corresponding to the forces of S as a main predicate and S embedded as a complement. Rather, sentences and their potential forces are to be paired by an algorithmic device which inputs (the semantic representation of) the sentence and outputs the list of illocutionary acts whose propositional content conditions are met by the input sentence. A similar device is postulated in the grammar to account for the (actual) illocutionary forces of utterances of sentences. Since the actual forces of an utterance are a subset of the potential forces of the uttered sentence, the utterance-force pairing algorithm works by determining, for each potential force of the uttered sentence, whether the (circumstances surrounding the) utterance fulfill the preparatory and essential conditions on the successful performance of the corresponding act.

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Any list of "acknowledgements" would be incomplete without mention of my parents, who passed their love of books on to me and who were selfless in their determination that I should be provided with the means to study anything, anywhere, and for as long as I wanted. They have indeed given me much to be grateful for.

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Die Wirklichkeiten aber sind langsam und
unbeschreiblich ausführlich.

"Realities are slow and indescribably detailed."

. . . Rainer Maria Rilke, The Note-
books of Malte Laurids Brigge

England gave Ramanujan such honours as were possible. The Royal Society elected him a Fellow at the age of thirty (which, even for a mathematician, is very young). . . . But soon he became ill. It was difficult, in war-time, to move him to a kinder climate. . . Hardy used to visit him, as he lay dying in hospital at Putney. It was on one of those visits that there happened the incident of the taxicab number. . . . Hardy, always inept about introducing a conversation, said . . . 'I thought the number of my taxicab was 1729. It seemed to me a rather dull number.' To which Ramanujan replied: 'No, Hardy! No, Hardy! It is a very interesting number. It is the smallest number expressible as the sum of two cubes in two different ways.'

. . . C.P. Snow, in his Foreword to A
Mathematician's Apology by G.H. Hardy

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CHAPTER I - INTRODUCTION: PRESUPPOSITION AND SEMANTIC THEORY

It seems that almost always we connect associated propositions with the main proposition which we express; these associated propositions, even if unexpressed, are associated with our words according to psychological laws also by the listener.

. . . Gottlob Frege (1892),
"On Sense and Nominatum"

The notion of "presupposition" was introduced by Frege at the end of the last century, and revived by Strawson some twenty years ago, but it has only recently come to the attention of linguists of the generative-transformational school. The surge of interest in this topic may be attributed to the gradual rejection of the structuralist idea that it is possible to study the syntactic structure of sentences without any reference to considerations of meaning - not only possible, in fact, but necessary, since semantic data were perceived as too vague and elusive to be amenable to rigorous description.¹ But as a consequence of Katz and Postal's (1964) claim that greater explanatory power can be achieved if transformations are formulated so that the deep structure of a sentence constitutes the sole determinant of its semantic representation, with its corollary that the deep structure of a sentence must reflect the meaning of that sentence, the subject of semantics gained new respectability. The degree to which a proposed deep structure would illuminate the meaning of a sentence began to be regarded as just as important a criterion of its adequacy as its success in capturing syntactic

generalizations. And once it was agreed that semantics was indeed to be taken seriously, new terminologies and tools of analysis were devised to handle the new problems it presented, with the result that many old problems (for example, pronominalization, deletion phenomena, quantifiers) were able to be dealt with in a more subtle and thorough manner from this point of view.² Presuppositional analysis is one of the new tools which has already shed light on some of the more stubborn enigmas of transformational grammar. Forms of presuppositional analysis brought out facts which paved the way to new theories and concepts in the paper "Fact" by Kiparsky and Kiparsky, which demonstrated how certain semantic properties of verbs and adjectives with respect to presupposition affected their syntactic behavior, and in J. L. Austin's posthumous collection of lectures, How to Do Things with Words, which introduced the notion of "felicity," providing a framework for a unified characterization of presupposition-satisfaction. The inspirations leading to this dissertation derive ultimately from these two works. The present work can be viewed, from one angle, as an attempt to apply presuppositional analyses to two areas of current concern in linguistics, namely indirect questions and illocutionary acts. From another angle, given the assumption that one of the tasks of the grammar-writer is to devise rules by which each sentence in a language is paired with its corresponding set (or sets, if the sentence is ambiguous) of presuppositions,³ the goal of this thesis is to refine and clarify the notion of presupposition in order to state some of these rules as accurately as possible.

In this introductory chapter we define the classical relation of presupposition which may hold between two propositions (or between two declarative sentences, on a reading of each; see footnote 4) and which is based on the entailment relation. We then extend the notion of presupposition to account for analogous relations which may hold between a question and a proposition, between a request and a proposition, and so forth. We show that the presuppositions of a sentence should not be confused with "good faith" conditions and other conditions on the appropriateness of utterances which refer to the speaker's or hearer's beliefs, expectations, etc. (presuppositional conditions, on the other hand, are derived solely from the meaning of the uttered sentence). We indicate how the logical consequences - the presuppositions and entailments - of a sentence may be accounted for within a generative grammar of a language. The sorts of underlying representations and rules I will be proposing are intended to be applicable within either an interpretive or a generative semantic framework.

Section 1: What is a presupposition?

1a. Presuppositions of statements.

The German philosopher Frege is generally credited with originating the concept of presupposition: In "On Sense and Nominatum" (1892) he pointed out that a proper name - a definite noun phrase - in subject position must refer to someone or something in order for the sentence in which it occurs to express a proposition which has a truth value:

The sentence 'Odysseus deeply asleep was disembarked at Ithaca' obviously has a sense. But since it is doubtful as to whether the name 'Odysseus' occurring in this sentence has a nominatum [referent], so it is also doubtful that the whole sentence has one [i.e. it is doubtful whether the proposition expressed by the sentence has a truth value]. However, it is certain that whoever seriously regards the sentence either as true or false also attributes to the name 'Odysseus' a nominatum, not only a sense; for it is obviously the nominatum of this name to which the predicate is either ascribed or denied. He who does not acknowledge the nominatum cannot ascribe or deny a predicate to it. (p. 90)

Whenever something is asserted then the presupposition taken for granted is that the employed proper names . . . have nominata. Thus, if we assert 'Kepler died in misery' it is presupposed that the name 'Kepler' designates something. However, the proposition that the name 'Kepler' designates something is . . . not contained in the sense of the sentence 'Kepler died in misery.' . . . That the name 'Kepler' designates something is rather the presupposition of the assertion 'Kepler died in misery' as well as of its denial. (p. 95)

Frege did not limit his discussion to presuppositions associated with definite noun phrases - for example, he claimed that the sentence

- (1) Bebel imagines that France's desire for vengeance could
be assuaged by the restitution of Alsace-Lorraine

is analyzable into the two propositions

- (a) Bebel believes that France's desire for vengeance could
be assuaged by the restitution of Alsace-Lorraine.
(b) France's desire for vengeance cannot be assuaged by
the restitution of Alsace-Lorraine, (*Italics mine*)

and suggested that "an analogous situation prevails with expressions like 'to know,' 'to recognize,' 'it is known'" (pp. 100-101). In

modern terminology, we would say that (1) presupposes (b) (and "asserts"

(a)); in general, a sentence containing the verb imagine presupposes the negation of the proposition contained in the complement to imagine, while sentences containing predicates like know and is known presuppose the complement proposition itself.

An explicit definition of presupposition is given in Strawson (1952) as follows: A statement S entails a statement S' "if S' is a necessary condition of the truth, simply, of S . . . S presupposes S' if S' is a necessary condition of the truth or falsity of S" (p. 175, *italics his*). Modern definitions tend to be paraphrases of Strawson. For example, Van Fraassen (1968, p. 138), says that

A presupposes B if and only if:

- (a) A necessitates B,
- (b) (not-A) necessitates B,

(where "A necessitates B if and only if, whenever A is true, B is also true"), which Karttunen (1971a) glosses as "P presupposes Q just in case Q is true whenever P has a truth value" (p. 3). Horn (1969) offers a "convention" by which

if $(S \rightarrow S')$ and $(\sim S' \rightarrow \sim S)$, then S entails S' (to be read "If from S we can conclude S' . . .")

if $(S \rightarrow S')$ and $(\sim S \rightarrow S')$, then S presupposes S'

(p. 98). An obvious criticism of this is that the significance of the relation "conclude from" is no clearer than that of " \rightarrow ". On the other hand, the following, by Keenan (1971), is extremely explicit:

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

S* are true. In such a case we also say that . . . S* logically implies S. . . . A sentence S logically presupposes a sentence S' just in case S logically implies S' and the negation of S, $\sim S$, also logically implies S'. . . . If S' is not true then S can be neither true nor false (and must in the formal logic be assigned a third or "nonsense" value). (pp. 45-46)

All these characterizations define the presupposition-relation which may hold between two propositions⁴ as a conjunction of entailment-relations. Clearly if a sentence A presupposes B, A therefore entails B, according to such a definition, but the theory must distinguish between what we shall sometimes refer to as "mere" entailment (entailment by a sentence but not necessarily by its negation) and presupposition (entailment both by a sentence and by its negation). The above definitions do this: they supply a "negation test" for determining whether a given proposition B, which is entailed by a given A, is "merely" an entailment or in addition a presupposition of A, depending on whether (respectively) only A or, in addition, the negation of A, entails B. But they give us no guidelines for making a decision as to whether the truth of not-A necessitates the truth of any particular B which is entailed by A. This decision is often difficult because of the ambiguity (or vagueness) introduced by sentence-negation operators. Before we go any further I would like to clarify some of the issues surrounding the distinction between "mere" entailment and presupposition.

The entailment relation between two propositions A and B (written " $A \rightarrow B$ ") can be defined in any one of the following ways (all are

equivalent):

- (2) a. If A is true, B must be true.
- b. The truth of A is a sufficient condition on the truth of B.
- c. The truth of B is a necessary condition on the truth of A.
- d. If B is not true, A cannot be true either.

These formulations are made in terms of two possible properties which A and B can possess - being true and being not-true. "Not-true" means "either false or zero (truth-valueless)," so such definitions are valid in a three-valued (true, false and zero) logic (i.e. they apply to A and B even if these statements carry presuppositions). It is sometimes assumed in speaking of entailment that when A entails B, the negation of B - i.e. its falsity - entails the negation of A by the contrapositive rule. That is,

$$(3) \quad (A \rightarrow B) \equiv (\sim B \rightarrow \sim A),$$

where " \sim " is the negation sign and is read "it is false that," and " \equiv " is logical equivalence. But this equivalence holds only when it is assumed that A has no presuppositions, or that (in general) every presupposition of A is also a presupposition of B. Otherwise it is not necessarily so. For suppose that A presupposes C and A entails B, but B does not presuppose C. Then when B is false, C is not necessarily true. But if C is not true, A has no truth-value, since A presupposes C. Thus although when B is false, A cannot be true, it is possible for A to be zero (to lack truth-value) when B is false. This means that given $A \rightarrow B$,

A is not always false when B is false; for A is sometimes zero when B is false. Thus $\sim B \rightarrow \sim A$ is not a necessary consequence of $A \rightarrow B$, since (3) does not hold when A has a presupposition which B lacks. Rather, when B is false, the most we can say about A (which entails B) is that it is untrue - either false or zero.⁵ However, although we must guard against invalid inferences via (3), we can argue validly according to the rule

(4) If $A \rightarrow B$, and A presupposes $\{C_1, \dots, C_n\}$, then

$$(\sim B \text{ and } \{C_1, \dots, C_n\}) \rightarrow \sim A.$$

Thus while we cannot always argue, via $A \rightarrow B$, from $\sim B$ to $\sim A$, it is valid to deduce, via $A \rightarrow B$, that the conjunction of $\sim B$ and the presuppositions of A entails $\sim A$. The converse of (4) is also valid, and can be used as a test for entailment, just as the right-to-left conditional of (3) (i.e. $(\sim B \rightarrow \sim A) \rightarrow (A \rightarrow B)$) is commonly used as a criterion for B's being a necessary condition on A when presupposition is not involved. Given A and B, and wanting to determine if $A \rightarrow B$, then, assuming that B is not inconsistent with any of the statements which we know are presuppositions of A,⁶ we ask whether the conjunction of $\sim B$ and $\{C_1, \dots, C_n\}$ entails $\sim A$. If so, $A \rightarrow B$.

We said that the inference from $A \rightarrow B$ to $\sim B \rightarrow \sim A$ is not valid if A has a presupposition which B lacks; this includes the situation in which A presupposes B, since of course B does not presuppose itself.⁷ When A presupposes B, the consequences listed in (2) are valid, and so also are the following:

- (5) a. If A is false, B must be true.
- b. The falsity of A is a sufficient condition on the truth of B.
- c. The truth of B is a necessary condition on the falsity of A.
- d. If B is not true, A cannot be false.

Thus the distinction between presupposition and "mere" entailment rests upon the issue of what A is - whether false or zero - when B is false. If A entails but does not presuppose B, then $\sim A$ can be deduced from $\sim B$ in conjunction with the presuppositions of A. If A not only entails but also presupposes B, then whenever B is false, A lacks a truth value (regardless of the truth values of the other presuppositions of A): This is equivalent to the "negation test" for distinguishing presupposition from mere entailment. In practice, however, when dealing with actual propositions expressed by sentences in a natural language, the distinction between mere entailment and presupposition is often clouded by the ambiguity or vagueness introduced by negative operators; that is, the negation test is not always reliable. For example, it is clear that

(6) John is surprised that Bill won the election
entails

(7) John knows that Bill won the election,
since if John doesn't know that Bill won, there is no way that he can be surprised that Bill won. But we will claim (Chapter II, Section 1b) that (6) presupposes (7). The question of whether (6) is false or

truth-valueless when (7) is false is the question of whether the negation of (6) is true or zero when (7) is false. If

(8) John is not surprised that Bill won the election
is zero when (7) is false, then (8) as well as (6) entails (7), so (6) presupposes (7). If (8) is true when (7) is false, then (6) merely entails and does not presuppose (7). The answer to this question - or to the equivalent question of whether (8) entails (7) - depends on how (8), the negation of (6), is interpreted. That is, the not of (8) means "it is not true that," so (8) can be interpreted either as

(9) The truth-value of (6) is falsity

or

(10) The truth-value of (6) is zero.

Certainly (9), rather than (10), represents the way (8) is ordinarily understood by speakers of English. When someone utters (8), we generally feel free to infer (7), unless he explicitly states otherwise; and by stating otherwise, he will generally make it clear that he means (10) by his utterance of (8), as in:

(11) Of course John isn't surprised that Bill won - how could

he be, when he doesn't even know that Bill won!

The typical situation in which a person would utter (8) in the absence of a belief that John knows that Bill won - i.e. in the sense of (10) - would be one in which that person had just been asked whether or not John is surprised that Bill won. Of course, the question, like the statement, presupposes (7);⁸ in such a situation (assuming that both participants are speaking consistently with their own beliefs) the

asker of the question believes (7) while the person who was asked, believing contrariwise that (7) is not true, can "correct" (from his own point of view) the asker by uttering (8), meaning (10) - i.e. meaning not that (6) is false but that it is impossible for (6) to be either true or false. But if he does this, he is required to make it clear that he does mean (10) and not (9) - say by uttering (8) in a context like that of (11) - or else he is liable to be misunderstood; the asker is entitled to assume, if the respondent merely utters (8), that he means (9). Only (9) (or (6)) is an answer to the question of whether or not John was surprised that Bill won; (10) is a denial that the question is truthfully answerable.

There are two issues to be decided as to the relationships among (6) - (10), one empirical and one terminological. The empirical question is whether (8) is ambiguous or merely vague, whether (8) has two readings, (9) and (10), expressing two different statements, or whether (8) is neutral between the two so that any utterance of it alone could express either meaning (although even if (8) is not ambiguous it is still understood, if it is uttered without any specific denial of (7), to mean (9)). This issue, like the parallel cases we will mention in Chapter II, Section 2b, probably cannot be decided given the present state of the art. The "terminological issue" is decided as follows: once out of this sub-section, we will use the expression "the negation of P" to mean the proposition that P is false (unless we indicate otherwise). We will ordinarily express negation by inserting not or another morpheme of sentence-negation into a proposition; these are

to be regarded as equivalent to " \sim ", the negation sign of logic. A negated sentence like (8) will, in this paper, always be understood as an assertion of falsity - as (9) rather than (10) (we do not of course deny that (8) can be read as (10), but we will be ignoring this interpretation). When we do refer to a lack of truth-value by a sentence or a proposition we will always make it explicit that this, and not falsity, is being predicated of the statement.⁹ Given this terminology, it is clear that (8), like (6), entails (7), and (7) is thus a presupposition of (6), not merely an entailment of it. When (7) is not true, (6) is zero rather than false.

My claim that

(6) John is surprised that Bill won the election presupposes (rather than merely entails) (7) rests on a factual claim that one would not ordinarily utter (8), the negation of (6), in the absence of a belief that John knows that Bill won, unless the context of the utterance indicates that (8) is to be interpreted as (10), not (9). But it is not always so clear whether an assertion of the negation of a sentence A (such that A entails B) should, when B is false, be interpreted as implying that the speaker believes that A is false or that he believes that A is truth-valueless. Thus although we define presupposition (along with Strawson, Van Fraassen, and the rest) in terms of what is entailed by the negation of a statement, we caution the reader that this sort of definition does not provide a clear intuitive test for determining whether or not a given sentence-proposition pair satisfies the definition.¹⁰

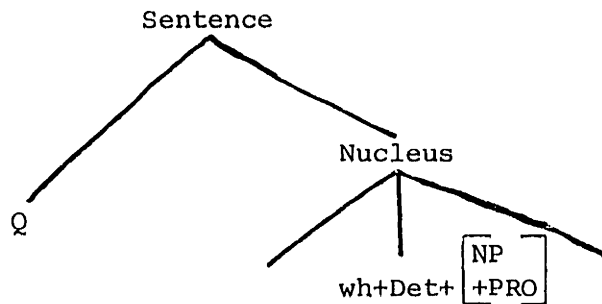
What we have done so far is to define, as others have done, the notion "presupposition of a statement (or sentence)" in terms of the notion "entailment of a statement," so that what a statement presupposes is a matter of its logical consequences or truth-conditions. But it is usually recognized that questions (or interrogative sentences), as well as statements, carry presuppositions; we will go further and argue that all kinds of sentences may be said to presuppose propositions. Clearly, our definition of presupposition, as it stands, cannot account for the relation between a question, or a request, etc. and the presuppositions which it is intuitively judged to have, since questions and requests - or interrogatives and imperatives - cannot be assigned truth-values. And if they are never "true" or "false" they can have no logical consequences nor truth-conditions. Thus it is not sufficient simply to define presupposition in terms of possession of truth value. What I see to be required by linguistic theory is rather a definition of presupposition as a relation between a sentence (or the statement, question, request, etc. which it expresses) and a statement-expressing sentence or proposition.

1b. Presuppositions of statements, questions and requests;

Logical propriety.

This being so, various linguists have seen fit to extend the domain of the term "presupposition" so that it can also be applied to a relation between an interrogative sentence and a corresponding set of propositions. The earliest attempt to do this, I believe, was in Katz

and Postal (1964): On the assumption that the underlying phrase marker of a question is of the form



(p. 115),

The presuppositions of a question are all the sentences whose reading at the 'Sentence' node is the same as the reading of the constituent Nucleus in the underlying P-marker of the question (except for the syntactic marker Nucleus and for the wh-bracketing) and all the sentences that are entailed by sentences that are presuppositions. (p. 116)

Thus, for example, if the question-word who is represented in deep structure as "wh+someone," then "Someone saw John" is a presupposition of the interrogative "Who saw John?". And the stipulation that entailments of a presupposition of a sentence are also presuppositions of that sentence allows us to derive "'John' has a referent" as a presupposition of the question, since this proposition is entailed by "Someone saw John."

Keenan (1971) also addresses himself to the problem of accounting for the presuppositions of questions: "We can extend logical semantics to account for the presuppositions of questions by defining their presuppositions to be the sentences which are logical consequences of every one of their answers" (p. 48).¹¹ Thus, for example, some possible

answers to the question "When did John arrive?" are "John arrived at noon," "John arrived on Thursday," "John arrived at 14.6 seconds after 2:45 p.m." - all of these entail "John arrived," which is presupposed by the question. But Keenan's definition is not algorithmic,¹² at least not for wh-questions: That is, his characterization does not allow us to determine the set of presuppositions of a question Q, given Q, since the set of possible answers to a wh-question is indefinitely large. On the other hand, it is obvious that Keenan's definition was not intended as an algorithm; rather, it is valuable in that it provides a statement of what phenomena the expression "Q (a question) presupposes P" should be used to capture. That is, it offers a solution to the following problem: There is a special relationship between, say, the proposition

(12) Kepler died in misery

and the proposition

(13) "Kepler" has a referent,

which consists in the fact that the first proposition has a truth value only when the second is true. We call this relation "presupposes." In general, a statement containing a name presupposes that the name refers. Similarly, we intuitively feel that there is a special relationship between a question containing a name and the proposition that this name has a referent - for example, this relation holds between the question

(14) Where did Kepler live?

and the statement (13). On the assumption that the relation between

(14) and (13) is somehow analogous to the relation between (12) and (13),

we take the liberty of giving the same name to the former relation as we did to the latter: we say that the question (14) "presupposes" the statement (13). But clearly the similarity between these two relationships is only an "analogy," not an identity, although we have given both relations the same name. Certainly the relation "presupposes," as it holds between (14) and (13), does not consist in (14)'s lacking a truth value whenever (13) is false - this is because (14) is a question, not a statement, so it can never be said to have a truth value, and it makes no sense to call anything a condition on (14)'s having a truth value. Thus in saying that (14) presupposes (13) we have merely given a name to the relation between (14) and (13) without specifying its content. So the problem is this: If "S (a statement) presupposes P" means that P must be true in order for S to be true or false, what does "Q presupposes P" mean? In other words, what is "bad" about a question with a false presupposition? By Keenan's definition, such a question will have no true answer. (That is, let Q presuppose P and let P be false; then for each A such that A is an answer to Q, the fact that A entails P results in the fact that A will not be true when P is false.) Thus a question has at least one true answer if and only if all its presuppositions are true.

We can achieve a better parallel between these two senses of "presupposes" if we alter slightly the canonical form for answers to wh-questions. Let us stipulate that all "Answers" to wh-questions must be in the form of cleft-sentences.¹³ Then, for instance, "Who

has the tickets?" can be "Answered" only by a sentence of the form "It is NP who has the tickets." "When did John arrive?" can be "Answered" by "It was at noon (on Thursday, etc.) that John arrived," "Answers" to yes-no questions are assumed to be of the normal form "P" or "not-P." This convention allows us to state that a question Q presupposes a proposition P just in case every "Answer" to Q is such that it has a truth value only if P is true - that is, "Who has the tickets?" presupposes "Someone has the tickets," since when the latter is false, all sentences of the form "It is NP who has the tickets" are neither true or false (because such sentences themselves presuppose that someone has the tickets, unlike sentences of the form "NP has the tickets," which only entail that someone does). Similarly, "Is John's brother home?" presupposes "John has a brother," since either a positive or a negative answer to this question will lack a truth value when John lacks a brother. The convention makes our characterization of the notion "presupposition of a question" dependent on the classical notion "presupposition of a statement," since it defines the presuppositions of questions in terms of those of statements.

We may now speak of the property of a question of answerability or non-answerability, parallel to the property of a statement of either having or lacking a truth value: A question is answerable if and only if it has at least one true "answer" (in the usual sense of "answer," as put forth in footnote 11 and employed by Keenan), or if and only if all of its "Answers" (in the sense just described) are either true or false. There is an obvious extension to the case of requests or orders

expressed by imperative sentences, which may be said to have the property that it is either possible or impossible for the person to whom the request or order is addressed to fulfill it by carrying it out.¹⁴ Thus a request or order can be defined as "fulfillable" just in case all its presuppositions are true.

For the sake of generality, let us define a notion of "logically proper" as follows:

A logically proper statement (proposition) is either true or false.

A logically proper question is answerable.

A logically proper request or order is fulfillable.

Thus our characterization of "presupposition" becomes:

A sentence S (on a given reading) presupposes a proposition P if and only if P must be true in order for the statement, question, or request/order expressed by S to be logically proper. From this it follows that (the statement, question, etc. expressed by) S is logically proper if and only if all its presuppositions are true.

The notion of "logically proper" is not yet completely general, however, and will not be until we specify what it means for an explicitly performative sentence to have a presupposition. (The notion of a "performative" sentence or utterance is defined in Chapter IV.) That is, since

(15) The present King of France has a beard
presupposes that there is an individual who is presently King of France,

we must at least consider the possibility that the explicit performative

(16) I promise to shave the present King of France
has the same presupposition. Similarly, if we agree with Fillmore (1971a and b) that

(17) John accused Mary of writing the editorial
presupposes that Mary's having written the editorial would be "blameworthy," we must face the question of whether the explicit performative

(18) I accuse you of writing the editorial
likewise presupposes the "blameworthiness" of the editorial-writing activity predicated therein of the addressee. But although (16) and (18) are declarative sentences, they have a reading on which they do not express statements and cannot be said to be true or false. Thus our notions of logical propriety/impropriety cannot be attributed to them. Therefore, we cannot even address the question of whether (16) and (18) have these respective presuppositions until we define, as we did for interrogative and imperative sentences, what we mean when we say that an explicitly performative sentence - or a promise, an accusation, etc. - has a presupposition. The formulation of such a definition is the subject matter of Section 3 of Chapter IV; I do not state the result of that section here since to do so would necessitate the introduction of a great many terms and concepts which will have to be discussed later in any case. Here I merely restate the major points of this section: That all kinds of (full, non-elliptic) sentences carry presuppositions, that the relations which

hold between sentences - all sentences - and the set of their presupposed propositions must be accounted for in the grammar, and that in order for this to be possible, the notion of "logical propriety/impropriety" (or the equivalent one of 'presupposition-satisfaction/failure') must be defined so as to range over not only all syntactic sentence-types, but over performative sentences (on their performative readings) as well.

Section 2: Presupposition, Conversation, and "Good Faith"

The presuppositions of a sentence are derived from its meaning and structure by grammatical rules; thus the question of whether or not a given sentence presupposes a given proposition will be answered in the same way by every member of an ideal homogeneous speech-community. That is, the answer to such a question involves only an individual's "knowledge" of his language - his internalized grammar. It does not involve his "factual knowledge," his beliefs about the world. However, two native speakers (with the same ideal grammar) may have different opinions as to whether or not a given sentence is logically proper, since although they will agree that S presupposes P, they may disagree as to whether P is true. For this reason many writers characterize presuppositions as conditions on what an individual ought to believe if he utters a given sentence. For example, Sellars (1954) writes:

An utterance of "The table over here is large" . . . presuppose[s] that there is one and only one table "over here." To say that the utterance presupposes this is to say that it is correct to make the utterance . . . only if one believes there is to be one and only one table "over here" and that this belief is shared by the listener. (pp. 207-8)

But this is not very helpful as a definition of presupposition as it defines presupposition in terms of a rather vague concept of "correctness," and there seem to be all sorts of reasons, some of which do not involve what we would like to call "presuppositions," for considering an utterance "incorrect." Furthermore, I think that Sellars is confusing several issues here - we may view this passage as making three points, which can be separated as follows:

- (19) a. The sentence (or the proposition expressed by it, or an utterance of it) "The table over here is large" presupposes that "the table" has a unique referent - that is, if "the table" does not have a unique referent, the statement is without truth value.
- b. An individual ought not (i.e. it is not "correct" to) utter a sentence S which presupposes P unless he believes P to be true.
- c. An individual ought not address an utterance of S (which presupposes P) to anyone who does not, in the speaker's opinion, believe P.

(19) is a statement of a presupposition; b and c are "good-faith" conditions on the beliefs of speaker that they may utter certain sentences. There are really three sorts of conditions involved in Sellars' concept of "correctness":

- (20) Conditions on the logical propriety of a sentence (i.e. presuppositions).
- (21) Conditions on an arbitrary person's judging a given sentence to be logically proper.

(22) Those conditions on a person's uttering a sentence "in good faith" which involve its presuppositions.

(20) is a matter of grammar (i.e. semantics); (21) and (22) are about human beliefs and actions. The (21)-conditions are neutral with respect to speaker vs. hearer (addressee). They may be expressed as follows: Given that S presupposes P, then (assuming that P is the only presupposition of S):

- (21) a. If an arbitrary person (henceforth AP) has an opinion as to the truth of P, he will judge S to be logically proper if he believes P, and logically improper if he disbelieves P.
- b. If the AP has no opinion as to the truth of P he will, under most circumstances, assume S to be logically proper, thereby deducing P.

There are at least two (22)-conditions:

- (22) a. (= (19)b) A speaker ought not utter S unless he judges S to be logically proper.
- b. A speaker ought not utter S to an addressee unless he expects the addressee to consider S to be logically proper by virtue of (21)a or b.¹⁵

(22)b is a modification of Sellars' condition on what a speaker ought to believe about an addressee's beliefs in order that he may utter certain sentences, which we represented as (19)c. The latter is too strong in that it implies that we should not utter S (which presupposes P) to an addressee whom we believe to have no opinion as to P, but I

think there is really nothing wrong with doing so as long as we feel that the addressee would be willing to accept P as a new belief. My formulation of conditions (21) and (22) is just a first approximation. It is necessary to look more carefully at just what is meant by "most circumstances" in (21)b. Also, (21) and (22) are dependent upon each other: For example, if a speaker utters "All my children are boys," and if I know nothing about the speaker's family life, I will deduce from this utterance (by (21)b) that the speaker has at least two children. The reason I am entitled to make this deduction is that I am assuming the speaker to be operating under the "good-faith" rules of (22). Similarly, the reason why the speaker is entitled to make this assertion without knowing whether I am aware that he has children (i.e. in the absence of a belief that I believe that he has children) is that he expects me to deduce, if I do not already know, that he has children. I will not make this deduction only if I suspect that the speaker is trying to deceive or mislead me - if I expect that he is violating (22)a - or if I do not take the utterance to be intended literally - perhaps it is meant as a joke, or the speaker is quoting someone else. But in that case, since the utterance is not meant to be taken literally, the question of logical propriety, in the strict sense we have in mind, does not arise: Jokes, metaphors and quotations doubtless have happiness conditions of a sort parallel to presuppositions, but they are not the same as those for literally-intended utterances (although they are probably based on them in some manner); we will not consider these conditions here.

It is necessary to formulate conditions like (21) and (22) because it is important to clear up confusion about the role of the speaker's (or addressee's) beliefs which is present in some accounts of presupposition and its consequences. What the presuppositions of a sentence are, and what is wrong with the sentence when one of them is false, is expressible in terms of truth-conditions on propositions. However, in real-life situations, when actual speech-acts are taking place, we cannot appeal to "truth" or "facts" but only to our beliefs and our perceptions of others' beliefs. Therefore, on the grammatical level, we must avoid reference to the idiosyncratic beliefs of individuals involved in particular speech-acts, but on the conversational level, we must make conditional statements as to how the fact that certain sentences have certain presuppositions affects which utterances we may or may not make.

These two levels are confused in discussions of presupposition which employ expressions like "The speaker of this sentence presupposes" Karttunen (1971a) notes that:

Currently there are at least three different locutions in use . . . :

- (i) (in uttering the sentence X) 'the speaker presupposes that . . . '
- (ii) 'the verb X presupposes that . . . '
- (iii) 'the sentence X presupposes that . . . '

Actually, (i) and (ii) seem to be some sort of shorthand formulas for longer expressions that involve (iii). For example, (ii) is generally intended to mean something like 'any sentence with the verb X as predicate presupposes that . . . ' It need not be the case that there is really a genuine confusion in the mind of the

users about whether 'presupposition' is an act by the speaker, a relation between a verb and its complement, or a relation between two propositions. However, the indiscriminate usage of (i-iii) is likely to breed such confusion in the minds of others. (p. 23, fn 6)

I agree that (ii) is properly regarded as merely a "shorthand" for (iii) (although to avoid confusion we will avoid speaking of verbs as "having" presuppositions - rather they "trigger" presuppositions which are possessed by the sentence (which expresses the proposition, etc.) in which they occur. But if Karttunen, when he said that (i) could likewise be expressed in terms of (iii), meant that (i) is equivalent to something like

- (23) the sentence X presupposes that the speaker of X
believes that . . . ,

this would be inconsistent with my formulation: In general, the logical propriety of a sentence depends not on the beliefs of its speaker - not on whether or not the speaker believes a certain proposition P - but on the truth of the proposition P itself.¹⁶ Thus if a sentence S presupposes P it is inaccurate to express this by the locution "In uttering S, the speaker of S presupposes that P" if this is to be interpreted as (23), because (23) and "S presupposes P" are two different analyses of S, giving two different truth-conditions and logical propriety-conditions on S. If (i) is interpreted as (23), then (i) and (iii) make two different statements about the sentence X, and only (iii) makes a statement which is consistent with the classical notion of presupposition. (Note, however, that (i) could be interpreted as consistent with the classical notion if it is regarded as a "good faith" condition on an utterance of S rather than as a condition

on the logical propriety of S.)

In the hope of dispelling such confusion, Garner (1971) exhorts every writer on the subject of presupposition to state explicitly "what sort of thing or things . . . [he] wishes the variables x and y to range over in the formula "x presupposes y" (p. 26). Karttunen's comment in the last paragraph and my discussion of it dealt directly only with the specification of "x." In my account, x refers to either a proposition, a question, a promise, etc. - or to the sentence which expresses it. (But when we speak of a sentence having presuppositions, we mean a sentence on a given (or understood) reading; therefore, x does not strictly refer to sentences but rather to readings of sentences, or their deep structures.) Presumably it would also be permissible to speak of verbs or noun phrases having presuppositions, as long as it is specified that they are actually presuppositions of the sentence containing the verb or noun phrase and triggered by that element. But people - speaker and hearers, or addressee - do not have presuppositions, unless we interpret saying that they do as saying that they have the belief that a given presupposition is true. The y of "x presupposes y" refers to a proposition, or, derivatively, to a declarative sentence on a given reading. These presupposed statements may be predications of beliefs to the speaker of, the addressee of, or the human referent of a noun phrase occurring in the sentence (see footnote 16), but only if that individual's holding that belief is a condition on the sentence being logically proper - having a truth value, or whatever. The mistake of interpreting (23) as equivalent to Karttunen's

(iii) is that we will thereby be led to claim that S presupposes that the speaker of S believes that P, when S merely presupposes P. An example of this mistake is found in Bach (1971), where he states that

It is of the nature of definite noun phrases that they embody a presupposition that the identity of the referent is known to both speaker and hearer.
(p. 158)

But the issue of whether or not the speaker and/or the addressee of, say, an utterance of "John is bald" know to whom "John" refers has no bearing on the question of whether this sentence is true, false, or logically improper. The fact is that "John is bald" has a truth value just in case "John" has a referent, whether or not the speaker or addressee believe or know this. Thus if we express the presupposition of this statement as a statement about what the speaker and hearer believe, we fail to capture the notion for which the term "presupposition" was originally designed - i.e. the notion of a condition on a statement's having a truth-value. (To give Bach credit, he does admit to the inadequacy of his formulation in a footnote, and corrects it as follows: "What is presupposed is actually the existence of a unique referent [for the definite NP]."¹⁷

Section 3: On the formal representation of presuppositions in a generative grammar.

What we have done so far is to define the relation "presupposes" and the related notion of "logical propriety;" these definitions amount to descriptions of a particular sort of intuitive judgment made by native speakers of a language (i.e. as to whether or not a presupposition

of a given utterance of a sentence is satisfied) which, we claim, are made with respect to all kinds of sentences, regardless of their syntactic form and whether or not they are performative. We have also set forth some conditions on the uttering of sentences in "good faith," conditions which depend upon a speaker's judgments with respect to the logical propriety of sentences. But we have not yet considered the crucial question of how the concept of presupposition is to be represented in the semantic component of a generative grammar. The point of representing this concept in a formal grammar is to account for the ability of a native speaker to determine intuitively (i.e. by means of his internalized linguistic competence) what the presuppositions of a given sentence are, or whether or not a given sentence presupposes a given proposition. Only lately has this problem begun to be approached by linguists; most references to the presuppositions of sentences have been anecdotal. Fillmore (1971a) calls for a more rigorous description as follows:

I believe that linguistic theory is in need of a kind of analysis of the speech act that takes into account the presuppositional and illocutionary aspects of

speech communication, and I think that eventually linguists will be able to construct a system of rules by means of which, given the complete grammatical description of any sentence, one can "compute" the full set of the presuppositions which must be satisfied for any in-good-faith utterances of that sentence. (p. 277).¹⁸

The key word here is "compute" - what is needed is an algorithm of the form $PR(S) = \{P_1, \dots, P_n\}$, which, when "fed" information about S, will output the set of presuppositions of S. None of the "definitions" of presupposition we have cited are algorithms in this sense, since all refer to judgments made by native speakers as to the entailments of sentences, and there is as yet no recursive mechanism in the grammar to predict what these will be. This does not mean that such characterizations of presupposition are not relevant to the task of accounting for the phenomenon of presupposition in natural language - rather, they should be viewed as descriptions of the consequences of the relation "S presupposes P." In a sense, we need two "definitions" of presupposition: One which characterizes the notion in terms of what is wrong with a sentence when one of its presuppositions is false, and one which constitutes an algorithm for determining $PR(S)$, the presuppositions of a sentence S, given information about S. The latter serves as a model for the native speaker's ability to determine the presuppositions of a given sentence; it is a generative "definition" of the notion of presupposition in the same sense as a transformational grammar of, say, English, is (in part) a definition of the notion "grammatical sentence of English." Some suggestions as to the general form such an algorithm might take follow.¹⁹

We can view each of the presuppositions of a sentence S as being "triggered" by a constituent of S. At this point no definite statement can be made about which kinds of constituents are capable of triggering presuppositions. In this thesis we will be dealing primarily with presuppositions which result from the presence in a sentence of a verb or a noun phrase, but it is certainly the case that such expressions as "if" and "on purpose" contribute to the presuppositional analysis of sentences.

To derive presuppositions triggered by verbs, we visualize rules of the following form: We assume, along with Fillmore (1971a and b) and others, that the lexical entry of each verb includes a specification of the role it plays in relation to other items in a sentence. For example, the verb regret must be specified as requiring an animate noun phrase as its subject and a sentence as its object. We postulate that each lexical entry includes a (possibly null) set of "presupposition schemata" which determine the presuppositions triggered by that verb when it appears in a sentence. (Actually, there will be one set of such schemata for each reading the sentence has by virtue of containing that verb.) Thus if regret is represented in the lexicon as occurring in the context NP ____ S, then the presupposition schemata for regret will be stated as: (1) S; (2) NP believes S. When regret occurs in a sentence, the presuppositions of that sentence which are triggered by regret are derived by filling in the non-lexical portions of the presupposition schemata for regret with material from the sentence. That is, the subject of regret will be substituted for "NP"

and the complement of regret, for "S". Probably some analogous system can be devised for rules which derive the presuppositions triggered by noun phrases. However, there are some differences between the sorts of presuppositions triggered by these two classes which leads us to suspect that this sketch of the algorithm for determining presuppositions triggered by verbs cannot be adopted wholesale for NP's. First, noun phrases trigger "existential" or "referential" presuppositions which differ depending on genericness, definiteness, and so forth, but which apply across-the-board irrespective of the lexical content of the noun (for this reason we may suppose such presuppositions to be triggered by the determiner, rather than the noun, of a noun phrase). Verbs, on the other hand, while they may be cross-classified into subclasses according to which presuppositions they trigger (e.g. factive, control, etc.), are idiosyncratic as to their presuppositional properties. Second, the rules for deriving presuppositions triggered by noun phrases depend not on the grammatical role played by the NP (e.g. subject or object) but rather on whether the noun phrase functions in the sentence as a referring expression, used to pick out an individual or group, or whether it is attributive, used to predicate a property to someone or something (see Donnellan (1966)). For example, compare

(24) Pompidou is the present King of France

(25) The present King of France is Pompidou

and let P be the existential proposition "There is one and only one present King of France." I find (24) ambiguous between the two readings

(26) Pompidou has the property of being the present King
of France (i.e. "Pompidou" is referential, "the present
King of France" is attributive).

(27) The individual who is presently the King of France
is named Pompidou (i.e. "the present King of France"
is referential, "Pompidou" is attributive).

However, (25) is unambiguous and means the same thing as (27). It seems to me that only (25) and (27) presuppose P. (26), on the other hand, merely asserts that Pompidou has such-and-such a property; since in fact he does not, the proposition expressed by (26) is false (but not logically improper).²⁰

It is assumed that the operations which derive presuppositions triggered by verbs take place at the level of deep structure, where relations such as "subject of" and "complement of" are determined.²¹ Thus the rules for deriving the presuppositions of a sentence S operate on the deep structure of S²² and derive the deep-structure representations of the sentences which S presupposes, so that the mapping of S onto the set of its presuppositions may be understood as a mapping from a phrase-marker onto a set of phrase-markers, as illustrated in Kiparsky and Kiparsky (1971, p. 350).²³ This way of regarding the relation between a sentence and its presuppositions may be applied to a non-standard theory of generative grammar which does not take the deep structure of S to be the sole determinant of the meaning of S by representing the mapping as originating from the semantic representation of S rather than from its deep structure, if we assume that semantic representations can be drawn in the form of phrase markers.

As a first approximation we may suppose that the list of presuppositions for S is based on the collected lists of presuppositions triggered by constituents of S, subject to certain modifications which are necessary to account for the interaction between presuppositions derived from constituents at different levels of embedding.²⁴ This thesis ignores the problems which arise from such interactions on the grounds that there are problems aplenty to be solved in the presuppositional analysis of sentences containing only one level of embedding.

My description of the manner in which presuppositions of sentences can be represented in a formal generative grammar is compatible with the partial representations suggested in Fillmore (1971 a and b), Kiparsky and Kiparsky (1971), and Keenan (1970), and could, I believe, be adapted to suit either a "generative semantics" framework or an "interpretivist" one. A radically different solution to the problem of accounting for presuppositions, suited only to the former framework is suggested in two papers in the Fifth Chicago Linguistic Society volume. Morgan (1969) claims that "The relationship between unuttered presuppositions and the sentence with which they are associated is exactly [sic] the same as that between a left-conjoined S and the conjuncts which follow it" (p. 174), offering as evidence such contrasts as the one between "Mike has a cat_i and the cat_i is black" and "?Mike has a cat_i and a cat_i is black" or "?The cat_i is black and Mike has a cat_i" (p. 173). This observation is the basis for his conjecture that

presuppositions are somehow conjoined to the left of the performative. . . . A hypothesis: that conjoined to the left of the performative [in Morgan's theory as in most generative semanticist analyses, every sentence is introduced by a performative at the deepest level of representation; see my Chapter V, Section 2] is an abstract verb of supposition, with many of the attributes of a performative. The t_0 presuppositions, those holding at the level of [i.e. with the same time reference as] the performative, are the complements of this abstract verb of supposition. (p. 174)

Morgan further suggests the possibility that the verb "suppose," being an example of an "overt performative of supposition," might take the place of the abstract lexical item. In other words, Morgan seems to be claiming that, for instance, "John knows that Bill is here" is a paraphrase of "I suppose that Bill is here, and (I assert to you that) John knows that Bill is here." The non-equivalence of these two sentences is one ground for criticism of Morgan's hypothesis; another is the non-performativeness of "I suppose . . ." (what sort of a speech act is "supposing"?); still another is the failure of this notation to capture the fact that others besides the speaker of a sentence can have intuitions about its felicity and logical propriety - that is, this analysis is subject to the same criticism as a framework which expresses presuppositions in terms of the belief of the speaker of a sentence. Finally, any theory which merely states that presuppositions of sentences are to be diagrammed in such-and-such a manner next to the deepest phrase marker of their respective sentences is inadequate unless it also specifies the manner in which a given sentence is to be paired with its presuppositions - either a generative algorithm such as I have described or an interpretive one which inputs pairs consisting of sentences and sets of propositions and makes decisions on which pairs are such that the sentence presupposes the set of propositions. As it

stands, Morgan's theory seems to suggest that the presuppositions of a sentence are independent of what the sentence asserts and the form in which it is asserted. These objections apply equally to the suggestion made in Morin and O'Malley (1969) that "presuppositions might be embedded in some type of epistemic verb such as assume," with a phrase marker whose main verb is assume standing by the side of (but not conjoined to) the phrase marker which specifies the rest of the semantic representation of a sentence (p. 183).

Section 4: Aspects of presupposition covered by the thesis.

This thesis originated as an attempt to solve some of the outstanding problems associated with the phenomenon of indirect questions. The indirect question construction provides particularly fertile ground for presuppositional analysis. For example, the presupposition of "John knows who won the election" that "Someone won the election" can be accounted for in two ways: First, the deep structure of the embedded clause is essentially that of the direct question "Who won the election?", which itself presupposes "Someone won." Second, given the factivity of know and the classic method of deriving the wh-words of questions from the indefinite pronouns, then if we assume the correctness of the claim, put forth in Bresnan (1969), that indirect questions are complements embedded under the complementizer wh (or Q), we can state that "Someone won" is a presupposition of "John knows who won" by virtue of its being the complement of a factive verb. Since both the wh of questions and a significant subclass of the predicates

which embed questions as complements (namely, the factive predicates) are presupposition-triggering elements, we will be studying these separately as well as in combination in order to attack (among others) the following problems: What does John know when he knows who won the election? (that is, what are the truth-conditions on sentences containing indirect questions?), and what should a speaker know or believe in order for him to assert that John knows who won, appropriately and in good faith? My claim is that the answers to these questions and others can be arrived at through an analysis of the logical consequences - in particular, the presuppositions, of sentences containing indirect questions and related complement clauses. Toward this end, Chapter II is devoted to a study of the existential entailments and presuppositions of sentences containing indefinite noun phrases (such NP's are claimed to be the source for who wh-words of questions) within their complement (lower) clauses. Chapter III deals with the presuppositions triggered by factive verbs and adjectives, especially with the exhaustiveness constraint on the truth of sentences containing indirect questions, which, as we will show, must be expressed as a presupposition of such sentences.

We will argue in Chapter IV that the role played by presupposition in language can be described in terms of how the truth or falsity of a presupposition of a sentence contributes to determining whether or not a speech act has been successfully performed by an utterance of that sentence. To provide background for this claim, Chapter IV is devoted to defining the notions "performative sentence" and "presupposition of a performative." In Chapter V we offer the makings of two algorithms for determining which illocutionary acts a given sentence may potentially

be used to perform and which acts an utterance of it actually succeeds in performing under the circumstances surrounding the utterance, arguing that these algorithms reflect a demonstrable ability, possessed by speakers of a language, to make intuitive judgments as to the illocutionary forces of sentences and utterances. The second algorithm is based primarily on a statement of the presuppositions triggered by those verbs which may be used to report the performance of illocutionary acts.

Footnotes to Chapter I

1. See, for example, Chomsky (1957), p. 17 (including fn. 4).
2. In fact, Keenan (1970) suggests that

"In many interesting cases, . . . the reliability of native informants' judgments of logical consequence far exceeds the reliability of judgments of grammaticality. . . . This claim . . . suggests that the semantics of English can ultimately be stated with more rigor and clarity than can the syntax - a rather startling claim in view of the old and still current belief that the only rigorous questions in language today can be syntactic ones" (pp. 14-15).
3. This assumption appears to go unchallenged in contemporary linguistics despite differences of opinion as to the exact status of presupposition in the semantic component. Chomsky (1970) states that "The grammar generates sentences and expresses the fact that these sentences carry certain presuppositions" (p. 2). Lakoff (1971a) writes: "Given a syntactic structure (P_1, \dots, P_n) we define the semantic representation SR of a sentence as $SR = (P_1, PR, \text{Top} [ic], F[\text{ocus}], \dots)$ where PR is a conjunction of presuppositions . . ." (p. 234).
4. A note on the terminology so far: "Presupposition" as we will be using this term is a relation between a sentence and a statement. A statement (or a proposition - we will use these two terms interchangeably) can be thought of as a declarative sentence with a given (or understood) reading and set of references (to individuals, times, actions, etc.) We will sometimes take the terminological liberty of speaking of a sentence as "true" or "false" or "truth-valueless," it being understood that when we do so we are actually referring to the proposition which this sentence expresses when it is assigned a reading and set of references. It should also be noted that a "statement," as we use the term, may or may not have a truth value - thus, unlike some writers, we do not say that a declarative sentence with a false presupposition "does not make a statement" - rather we say that the statement it makes has no truth value.
5. Thus the definition of entailment given in (2), which does not distinguish between falsity and truth-valuelessness, holds even when A has a presupposition which B lacks. It also covers the case in which B has a presupposition which A lacks: in this situation the lack of truth-value of B is, along with the falsity

of B, a sufficient condition for the un-truth of A. But the sort of situation we will be discussing will ordinarily be one in which A has a presupposition which B lacks; for example, a factive sentence entailing a non-factive sentence.

6. Since, if $\sim B$ is inconsistent with some C_i , then

$$\sim(\sim B \text{ and } C_i),$$

$$\text{so } (B \text{ or } \sim C_i),$$

$$\text{i.e. } C_i \longrightarrow B,$$

and since B is an entailment of a presupposition of A, it is itself a presupposition of A - so it is superfluous to ask whether $A \longrightarrow B$.

7. In this situation (4) is clearly inapplicable - or rather, irrelevant; it says (correctly) that we can argue from

$$A \longrightarrow B$$

and

$$A \text{ presupposes } \{B, C_1, \dots, C_n\}$$

and

$$(\sim B \text{ and } \{B, C_1, \dots, C_n\})$$

to

$$\sim A.$$

But the third premise is a contradiction - it includes "B and $\sim B$ " - and it is a theorem of the propositional calculus that we can argue validly from a contradiction to anything: since a contradiction is always false, anything is a sufficient condition on its being false. Thus we can ignore rule (4) when speaking of an entailment B of A which is also a presupposition of A, since the only inference which can be made in this case by virtue of (4) is an inference which is tautologically valid anyway.

8. The notion "presupposition of a question" is defined in the following sub-section.
9. Keenan (1970) deals with this terminological problem in his logical grammar by positing two negation operators, " \sim " for "strong negation" and "*" for "weak negation": " $\sim S$ is true if S is false, false if S is true, and zero otherwise . . . *S is true if and only if S is untrue, either false or zero" (pp. 83-84). However, he considers "That Fred laughed did not bother John" to be an unambiguous instance of strong negation (p. 81), with which I disagree.

10. Karttunen (1971b and personal communication) offers two tests for distinguishing presupposition from "mere" entailment, the "possibly" test and the "if" test, which are more reliable than the negation test. First, he points out that if A merely entails B, "It is possible that A" entails "It is possible that B.": For example

(i) John managed to open the door

entails

(ii) John opened the door;

and

(iii) It is possible that (i) = John may have managed to open the door

entails

(iv) It is possible that (ii) = John may have opened the door.

On the other hand, if A presupposes B, then "It is possible that A" entails B itself, not just "It is possible that B": Since

(v) John regrets having opened the door

presupposes (ii),

(iv) It is possible that (v) = John may regret having opened the door

entails (ii). Second, he observes that (by virtue of the fact that (v) presupposes (ii) while (i) merely entails it) an utterance of (i) as the antecedent of a hypothetical statement, as in

(vii) If John managed to open the door, he is stronger than I had expected,

only commits the speaker to a belief that John might have opened the door, not necessarily that he did open it; but an utterance of

(viii) If John regrets having opened the door, he is a fool

commits the speaker to a belief that John did in fact open the door.

11. Clearly this definition is adequate only given a convention that "answer" in this context is taken to mean "direct answer which is a full sentence" - for example, the question "Who stole the tarts?" can be "answered" only by a sentence of the form "NP stole the tarts." The following are not answers in this sense: "John," "John did," "No one stole the tarts" (this last is not a "direct" answer). Also excluded must be "I think John stole the tarts," since it does not entail that "Someone stole the tarts," which is a presupposition of the question. By this convention, the only possible answers to a yes-no question which asks whether or not P are "P" and "not-P" ("yes" and "no" must be excluded, since by themselves they do not strictly entail anything).
12. Neither, for that matter, is Katz and Postal's, for while their interpretive rule does algorithmically derive the primary existential presupposition of a question ("Who saw John?" presupposes "Someone saw John"), it accounts for the other presuppositions of the question merely by stating that they are the entailments of this primary presupposition - but, of course, a further algorithm would be needed to generate these entailments.
13. I am not, of course, suggesting that cleft-sentences are more "natural" answers to wh-questions, or that such a definition of the class of "Answers" to a question is empirically superior to the usual definition of "possible (or direct) answer." (The capital "A" is used merely to avoid confusion between the two conventions.) The convention simply has the advantage of making the notion "presupposition of a question" a function of the older and perhaps better understood concept of the relation between a statement and its presuppositions.
14. By "possible" we mean "logically possible", or "true in some possible world;" "impossible" means "false in any possible world." Some such clarification is necessary so that we can distinguish between cases in which someone is requested to do something which it is not conceivably in his power to do - such as to grow younger, or to divide a number by zero, or to be in two places at the same time - and cases in which someone is asked to do something which merely happens to be impossible for him to do, given certain contingent circumstances - such as ordering a cripple to walk, or ordering someone to travel from New York to California in five minutes. Only requests of the first sort are to be considered "impossible" in this sense. (Requests of the latter sort are, although not possible "in fact," still logically possible.)
15. (22) a and b are "good faith" conditions as opposed to "sincerity" conditions - an example of the latter is that a person ought not utter a declarative sentence which he believes to be false. Violation of this condition amounts to telling a lie, while violating

the good-faith condition (22)a is somehow worse than lying - although people do not believe everything they hear, they do tend, as we claimed in (21)b, to believe the presuppositions of sentences they hear, unless they have prior reason to disbelieve them. We are ignoring sincerity conditions here on the grounds that they are linguistically irrelevant; they deal with human behavior as opposed to human linguistic competence.

16. Of course there may be sentences which do have presuppositions of the form "The speaker believes . . ." For example,

(i) I am (not) surprised that Bill showed up

presupposes

(ii) The speaker (the referent of "I") believes that
Bill showed up

as well as

(iii) Bill showed up.

But in general, it is not necessary for an individual to believe the presuppositions of a sentence which he utters - or rather, his believing them is necessary only in order for the sentence to be uttered by him in "good faith," but not in order for it to be logically proper.

17. Incidentally, Bach's reformulation is an oversimplification (although it succeeds in eliminating the fault we found with it): For example, a generic definite noun phrase does not need to have a "unique referent" in order for a sentence in which it occurs to be logically proper (rather, there must be a class of individuals which is picked out by the generic NP). Also, definite noun phrases do not always function as referring expressions: "De Gaulle was the King of France" does not presuppose that there was a King of France; rather it attributes to De Gaulle the attribute of having been the King of France. Since he never possessed this attribute, the statement that he did is false, not truth-valueless. Compare (24) and (25) below.
18. Unless Fillmore means something other than what I do by "in-good-faith," this paragraph expresses a different notion of "presupposition" from the one I have been considering. As I argued in the last section, presuppositions are not conditions on a sentence being uttered in "good faith;" rather, they are conditions on its being logically proper, and there are in addition conditions (my (22)a and b) on a sentence being uttered in good faith relative to its presuppositions and the beliefs of the speaker.

19. All remarks to follow characterizing the treatment of presupposition in a formal generative grammar apply also to the device (assumed by me to exist within the semantic component) which generates the ("mere") entailments of sentences.
20. The (26)-reading of (24) may be brought out by stressing the present King of France, and the (27)-reading by stressing Pompidou. Note that (24), in the sense of (26), is a natural answer to

(i) Who (or what) is Pompidou?

while (24) in the sense of (27) or (25), is a natural answer to

(ii) Who is the present King of France?,

but not vice versa. This is because (ii) shares the presupposition P with (27) and (25), while (i), like (26), does not presuppose P (although it does presuppose that "Pompidou" has a referent). The reason that (24) is ambiguous while (25) is not probably has to do with the hierarchy of different types of anaphoric expressions (see Lakoff (1968), p. 15) in which names are higher than titles - for example, it is more natural to pronominalize Pompidou with the present President of France than vice versa. Whether a noun phrase functions as a referential or attributive is also relevant to the presuppositions it triggers by virtue of its lexical content (if indeed NP's do trigger such presuppositions). For example, it has been claimed that

(iii) My cousin is a bachelor

presupposes that the individual referred to as "my cousin" is adult, male and human, and asserts that he is unmarried. (Evidence for this claim is the fact that (iii) is not a natural way to go about asserting that one's cousin is male (or grown-up, or human), nor is the negation of (iii) normally used to assert that one's cousin is female.) But this analysis is certainly not applicable when "a bachelor" is used referentially, as in

(iv) A bachelor entered the room.

(v) I have a date with a bachelor tonight.

That is, in these sentences, there is nothing "presuppositional" about the "unmarried" component of bachelor, as opposed to the "adult" or "human" or "male" components. If there is no one who is properly described by these four adjectives and who entered the room, (iv) is false, not truth-valueless, and similarly with (v).

21. This holds on the further assumption that each reading of a sentence has a different deep structure: Remember that when we speak of a sentence presupposing another sentence, we are really talking about the proposition (question, explicit promise, request, etc.) expressed by a sentence presupposing a proposition (expressed by the other sentence). This detail is important since an ambiguous sentence may have a different set of presuppositions for each reading - each proposition, etc. which it expresses. (And of course, the sentences which express the presupposed proposition may also be ambiguous, although when formulating presuppositions, we try to express them as unambiguously as possible.)
22. By saying that the rules for deriving the presuppositions of a sentence operate on its deep structure, we do not mean to rule out the possibility that presuppositions resulting from the presence of contrastively stressed elements may be derived from surface structure. For example (see Chomsky (1969), pp. 18-27), "John doesn't write poetry in his STUDY" (where the capitalization indicates heavy stress) presupposes that John writes poetry somewhere, while the same sentence without this stress does not carry this presupposition. I will not consider the issue of whether this presupposition is derived from the deep structure representation or at the surface structure level (where, Chomsky argues, the contrastive stress is assigned); rather, I will merely weaken my claim that presuppositions are determined at the deep structure level to apply only to presuppositions which are not triggered by contrastive stress.
23. Kiparsky and Kiparsky also have diagrams in which verbs as well as sentential phrase markers are represented as presupposing presupposition schemata (p. 354), and Keenan (1970) has devised a formal system in which both "formulas" (sentences) and "names" (definite noun phrases) carry presuppositions (e.g. " $\text{pr}(p) = \{\text{exist}(p)\}$ if p is a proper name," p. 175). I would argue that there is a greater simplicity in a framework such as mine in which presuppositions of noun phrases and verbs are reduced to presuppositions, triggered by such elements, of sentences containing them.
24. Recent linguistic research has shown that we cannot regard the presuppositions of a sentence as simply the sum of presuppositions triggered by its various constituents. Langendoen and Savin (1971), Morgan (1969), and Karttunen (1974) have suggested that in certain contexts, some presuppositions must be blocked and others must be added. In particular, Langendoen and Savin state a "projection principle for presuppositions" as follows:

"Presuppositions of a subordinate clause [i.e. presuppositions triggered by a verb occurring in a subordinate clause] . . . stand as presuppositions of the complex

sentence in which they occur. If either an assertion or a presupposition [i.e. of the highest clause] contains a variable which stands for a subordinate clause (say, an object complement), then it follows that the variable is replaced only by the assertion [and not by any presupposition] of the subordinate clause" (p. 57).

Morgan deals with a slightly different problem, that of presupposition-triggering verbs embedded under "world-creating" expressions such as "dream" and "if there were . . ." He envisions presuppositions as "flowing down the tree" of a sentence in such a way that

"certain verbs . . . can block this flow by defining a new set of presuppositions which consists of the down-flowing set plus changes overtly defined within the sphere of this lower WC [world-creating] verb. The new set of presuppositions holds in the sphere of this verb in the same manner unless changed again by a lower WC verb" (p. 171).

Karttunen's work is concerned with verbs which block the presuppositions of their complements and with logical connectives such as *if* which allow some but not other presuppositions to "filter through." I have not examined the facts about conditional statements closely, but I do think he is wrong when he claims that all performatives and verbs of saying are "plugs" - i.e. verbs the presuppositions of whose complements are not presuppositions of the sentence as a whole. While I agree that "Cecelia asked Fred to kiss her again" does not presuppose that Fred had previously kissed Cecelia, I will argue in Chapter IV that whether or not "Sheila accused Harry of beating his wife" presupposes that Harry has a wife depends on whether this sentence is a report of Sheila's having made an explicit accusation or whether it is a report of Sheila's merely having called Harry a wife-beater, which the reporter interprets as an accusation. In the latter case, the presupposition remains (but it is blocked in the former case: See footnote 22 in Chapter IV). Also, performative verbs do not block presuppositions triggered by elements embedded under them when they occur in explicit performatives - certainly "I promise to leave New York" is infelicitous in Austin's sense, or unsuccessful as a promise, if the speaker is not in New York at the time of the utterance. Clearly there is a lot more research to be done in all the areas touched by these three papers, before a unified projection principle can be stated.

CHAPTER II - INDIRECT QUESTIONS AND RELATED FACTIVE COMPLEMENTS

-Mira, Sancho . . . - dijo don Quijote - . . . eso que
a ti te parece bacía de barbero, me parece a mí el
yelmo do Mambrino, y a otro le parecerá otra cosa.

"Look, Sancho," said Don Quijote, "That which you see
as a barber's basin, I see as the helmet of Mambrino,
and someone else will see it as another thing."

. . . Don Quijote, Book I, Chapter XXV

We study indirect questions in this chapter and the next because they are rich in semantic problems and semantic oddities, many of which we hope to explain or at least clarify in terms of the presuppositions and entailments of sentences which contain them. In the present chapter we will deal with such problems as the semantic properties and sub-classifications of predicates which take questions as complements, the existential entailments of sentences containing indirect questions, and the sources of the wh-words of the different types of indirect questions.

Section 1: Existential entailments and presuppositions of sentences containing indirect questions.

1a. The distribution of indirect questions with respect to the main predicates of sentences in which they occur.

We should clarify at the outset what we mean by an "indirect question," since there appears to be some disagreement as to which

sorts of constructions are properly referred to by this term.

Baker (1968) discusses two possibilities in Chapter II of his thesis: The first is that indirect questions occur embedded only under verbs of questioning, like ask and wonder; the second is that they also occur under epistemic predicates such as know and realize. Baker argues in favor of the second proposal on the grounds that there are two types of wh-clauses found under verbs like know; one type he calls "free relatives," and these must be distinguished from the other type, which bear much more similarity to the wh-clauses under ask and wonder than to any sort of relative clause. But Ross (1970b), while he agrees that the embedded clauses of both

(1) John asked who won the election

and

(2) John knows who won the election

are indirect questions, also includes in his discussion such examples as

(3) It's fantastic, who won the election

and

(4) John was amazed at who won the election.

It is not clear why Baker excluded such sentences as (3) and (4) from his consideration - whether through oversight, or because he didn't consider them to contain indirect questions, or because he found them ungrammatical. Certainly they pass the various tests he offers for distinguishing indirect questions from free relatives (although many, such as "Where he lives is wild," are ambiguous between

the two). For example, they occur with all the wh-words except whether (see Section 1c), while free relatives allow only what, when and where. Furthermore, they allow two or more wh-words (with the same restrictions on the distribution and order of the wh-words as are found for direct questions), e.g. "Who he buried where is fantastic," while relative clauses never do (*John believed what Bill said when). It is difficult to believe that Baker found all instances of indirect questions embedded under these factive emotives ungrammatical, although he does explicitly star "It was odd which of the boys stayed for supper" (p. 106), which I find grammatical. I do admit that many of these sentences have a colloquial ring, and some sound stranger than others. In particular, extraposition, when possible, seems to affect their acceptability - thus (6) sounds much better to me than (5):

(5) Who came to the party is odd.

(6) It's odd, who came to the party.

In any case, this thesis will assume a dialect for which (3) - (6) are grammatical as indirect questions, and in which such predicates as be fantastic, be amazed at, be odd, etc.¹ allow interrogative clauses as complements.

Assuming, then, that certain verbal and adjectival predicates are grammatical with embedded questions as complements, while others are not, we would like to know how the distinction between these two classes can be characterized. As we shall see, the assignment of a

feature [\pm embeds indirect questions] is far from random; but although we will offer some generalizations about the subclasses of predicates which take indirect questions, no solution has been found to the problem of showing the ability of a predicate to embed questions to be dependent upon some other syntactic or semantic feature in every case.

Since one of our aims is to account for the presuppositions and other semantic aspects of indirect questions, we will begin by considering the properties of the verbs which take indirect questions with respect to the feature [\pm factive]. In Kiparsky and Kiparsky (1971), a factive complement is one which expresses a presupposition of the sentence in which it occurs; a factive predicate is one which triggers this presupposition of the complement by the sentence. (We will also employ in what follows such self-explanatory terms as a "factive sentence" (i.e. one with a factive main verb) and "the factive presupposition," as opposed to other presuppositions, of a sentence or statement.) It is striking that virtually all factive predicates take indirect questions.² And so do all the "indifferent" predicates - those described in Kiparsky and Kiparsky as verbs "which occur indifferently with factive and non-factive complements." Some examples of indifferently factive predicates are anticipate, acknowledge, remember, announce, report. In most cases, indifferent predicates take factive complements with a Poss-ing complementizer, non-factive complements with an infinitive; the Kiparskys observe that the complement clause is presupposed in (7) and (9), while not in (8) and (10):

- (7) They reported the enemy to have suffered a decisive defeat.
- (8) They reported the enemy's having suffered a decisive defeat.
- (9) I had remembered him to be bald.
- (10) I had remembered his being bald.

Thus, for each complementizer which a given predicate allows, we can speak of the predicate being either factive or non-factive with respect to that complementizer. ("Pure" factive predicates are factive with respect to every complementizer which they take.)

Since all those verbs which are factive with respect to some complementizers but not others take wh, the issue arises of whether any or all of these predicates are factive with respect to the complementizer wh - or rather, the problem of what it might mean for a predicate to be factive with respect to this complementizer. That is, it does not make sense to ask whether or not an interrogative clause is presupposed by a given sentence with a given main verb, since questions do not express statements and cannot be true or false. We will make sense of the question by defining a predicate to be "factive with respect to wh" if, whenever the predicate occurs in a sentence containing an indirect question as a complement, the sentence presupposes the existential statement obtained by removing the wh from the complement (with, of course, necessary adjustments in the word order). Under this definition, all factive and indifferent predicates are factive with respect to wh; for example, (11)a - (14)a below presuppose (11)b - (14)b respectively:

- (11) a. John knows (doesn't know) who won the election.
b. Someone won the election.

- (12) a. Where he went was (not) surprising.
b. He went somewhere.
- (13) a. I (don't) remember what he ate.
b. He ate something.
- (14) a. They announced (didn't announce) who had been chosen.
b. Someone had been chosen.

(In each of (11) - (14), as in the case of direct questions (see below, and also Chapter I, Section 1b), the claim made by the existential presupposition is essentially that there is a (true) answer to the question.) This extension of the notion of "factive with respect to a complementizer" is merely a matter of definition, but it gives us the advantage of being able to account for the "someone" ("something," etc.) presupposition of sentences containing indirect questions, by virtue of the factivity of the main verb. The value of this innovation lies in the fact that this existential factive presupposition cannot be completely accounted for by the assumption of a Q in the deep structure of indirect questions, which would trigger the presupposition as it presumably does in direct questions (e.g. "Who won?" presupposes "Someone won") - because not all sentences containing indirect questions have the existential factive presupposition. For instance, we argue below that "John wondered who won" does not presuppose "Someone won."

The remaining predicates which take indirect questions may be divided into two classes, "wh-factive" and non-factive. The "wh-factives" are predicates which are factive with respect to wh but not with respect to that, or, when it is allowed, ing. They are either verbs of saying, such as tell, say, state, and teach, or verbs whose complement refers

to the future, such as decide, stipulate, suggest, and predict (some fit both descriptions). Note that in the a-examples below, the (declarative) complement is not presupposed; in the b-examples, the existential statement derived from the (interrogative) complement is presupposed.

- (15) a. John told us that Bill had an argument with someone.
b. John told us who Bill had an argument with.
- (16) a. The teacher taught us that Columbus discovered America.
b. The teacher taught us who discovered America.
- (17) a. John decided to go to Paris.
b. John decided where to go.³
- (18) a. The weatherman predicted (incorrectly) that it would rain somewhere.
b. The weatherman predicted (*incorrectly) where it would rain.

All the non-factive predicates which take indirect questions are "verbs of questioning" which take only the wh-complementizer - e.g. ask, wonder, be a mystery, be unclear, inquire⁴ (some of these verbs do allow other complementizers, but then there is a difference in meaning - e.g. between ask when and ask that). These predicates are quite odd in their behavior with respect to the existential factive presupposition. Consider

- (19) John wonders who married Ann.
- (20) Who married Ann is a mystery.

Evidently (19) does not entail

- (21) Someone married Ann,

since it merely asserts that John is in a certain state of mind, characterized by his having no opinion to the effect that any particular individual married Ann. (19) does entail that John believes that someone married Ann, but his belief might be false; in that case (19) could be true and (21) false. Similarly, the negation of (19),

(22) John doesn't wonder who married Ann, should be taken to mean either (a) that John is unaware of or uninterested in the question of who married Ann, if indeed she married anyone, or (b) that there is an individual such that John is of the opinion that this individual married Ann. However, (22) does not in this latter case necessarily imply that John's opinion is correct; in particular, it does not imply that there is anyone about whom the opinion that he married Ann is correct - that is, (22) does not entail (21). Therefore, (19) does not presuppose (21), and wonder is non-factive.

On the other hand, (20) does seem to presuppose (21). "It's a mystery" means that the answer to a question is unknown; "It's no mystery (or 'not a mystery')" means that the answer is known. Neither allows the possibility of there being no answer. Apparently the reason why (21) is presupposed by (20) but not by (19) is derivable from the fact that (20), whose subject is a sentential clause, lacks an overt indirect object corresponding to the subject of (19) (compare also (23) - (25) below. The implied indirect object cannot be taken to be "everyone," since (20) certainly does not imply that the question of who married Ann is a mystery to everyone - for example, it is unlikely

to be a mystery to the people who did the marrying. Furthermore, (20) cannot be interpreted as

(23) Who married Ann is a mystery to me,
because (23) does not presuppose (21). (23) merely asserts that the speaker is in a certain state of mind, characterized by having no opinion to the effect that any particular individual married Ann; that is, (23) asserts about the speaker essentially what (19) asserts about John. Thus the missing personal object of (20) does not refer to the speaker alone, although it surely includes the speaker. I would take the "logical subject" of such sentences as (20) to be "both of us" or "all of us" - i.e. the speaker and the addressee(s);⁵ the addressee must be included since it is a condition on the truth of (20) that "it" be a "mystery" to the addressee(s) as well as to the speaker: If I utter (20) to you, and you know who married Ann, you will contradict me, claiming it not to be a mystery. My judgment is that sentences with "it's a mystery" have the existential presupposition when they lack an indirect object or when the indirect object refers to a group which includes the speaker and addressee(s); otherwise, they do not have it: (24)a, d, e and f presuppose (21), but (24)b and c do not.

(24) a. Who married Ann is a mystery

b. to me

c. to John

d. only to you and me

e. to everyone

f. to all of us.

Furthermore,

(25) One wonders who married Ann, which, like (24)a, e and f, asserts that an opinion is generally lacking, does presuppose (21). Hopefully a more meaningful way of describing this situation can be found; the essential point here is that sentences containing the verbs of questioning, which take only questions as complements, sometimes presuppose the existential proposition derived from the complement and sometimes do not, depending on the semantic properties of the upper sentence. They are thus not "factive," since the complements of factive predicates are always presupposed; nor are they "indifferent," since the occurrence of the presupposition is dependent on the upper sentence, not on the complementizer (while indifferent predicates are factive with respect to some complementizers but not to others). As far as I know, this sort of ambivalent behavior with respect to the presupposing of the complement statement is limited to this class of predicates, and as such it merits further study.

The predicates which take indirect questions as complements may thus be classified according to their factivity as follows:

1 - "Pure" factives - factive with respect to all complementizers

which they allow (all allow that, ing, wh; some allow to).

2 - "Indifferent" predicates - factive with respect to ing and wh

but not to to or that.

3 - "wh-factives" - factive only with respect to wh, not with respect

to that, ing or to.

4 - Non-factives - take only wh; non-factive with respect to wh.

We will refer to the conjunction of classes 2 and 3 and the "semi-factive" predicates.

- 1b. The major distinction among sentences containing indirect questions, based on the factivity of the main predicate with respect to wh.

The basic distinction among the predicates which take indirect questions is between the factive and "semi-factive" predicates on one hand and the non-factives on the other - that is, between those predicates which take declarative complements as well as interrogative, and those which allow only wh. There are many reasons for considering the two classes separately. First, indirect questions under the non-factive or "question" predicates are closely related to direct questions (the only differences are in intonation (punctuation), tense adjustment, and word order), and possibly derived from them; compare

- (26) a. John asked what Bill was to do.
b. John wondered who the mysterious visitor was.
c. Why he did it is a mystery.
- (27) a. John asked: "What is Bill to do?"
b. "Who is the mysterious visitor?" wondered John.
c. Why did he do it? It's a mystery!

Indirect questions under factive and semi-factive predicates, on the other hand, cannot be paraphrased as direct questions. The factive/semi-factive type of indirect question is more problematical, then, not being viewable merely as a description of the mental or verbal

asking of a question. In fact, this sort of indirect "question" is semantically more of an "indirect answer;" for example, the it of sentences with indirect questions under "It's well known" and "It's surprising" can be thought of as referring to the answer to the embedded question. Sentences containing indirect questions of this class can be paraphrased with "the answer" as in (28) below, just as those containing indirect questions under non-factives can be paraphrased with "the question":

- (28) a. John knows {the answer to} "Who won?".
 *the question
- b. John asked {the question } "Where is he?".
 *the answer to
- c. The answer to
{*The question of} "Who won?" is unknown.
- d. {The question of} why he did it is a mystery,
 *The answer to

1b.i. Corresponding existential entailments of factive (and semi-factive) sentences containing indirect questions.

A semantic consequence of this distinction among sentences containing indirect questions (between those whose main predicates are factive or semi-factive and those which have non-factive or "question" predicates in their main clauses) is the fact that only sentences of the former class have what we shall call "corresponding existential entailments." That is,

- (29) a. John knows who won the election
b. John doesn't know who won the election
c. John is surprised at who won the election
d. John is not surprised at who won the election

entail, respectively,

- (30) a. $(\exists x)(\text{John knows that } x \text{ won the election})$ ("There is someone such that John knows that that person won the election")
- b. $(\exists x)(\text{It is false that John knows that } x \text{ won the election})$
- c. $(\exists x)(\text{John is surprised that } x \text{ won the election})$
- d. $(\exists x)(\text{It is false that John is surprised that } x \text{ won the election}),$

while, of course,

- (29) e. John wonders who won the election
- f. John doesn't wonder who won the election

do not have entailments of the form

- (30) e. $*(\exists x)(\text{John wonders that } . . .)$
- f. $*(\exists x)(\text{It is false that John wonders that } . . .).$

Clearly (29)a and c entail (30)a and c respectively; if John knows (is surprised at) who won, then there must certainly be at least one person of whom it is true that John knows (is surprised) that that person won. Similarly, if John doesn't know (isn't surprised at) who won, then, by virtue of the factive presupposition of (29)a-d (to the effect that "Someone won the election"), there must be someone of whom it is true that he won but false that John knows (is surprised) that he won - for if there were not, everyone who won would be such that John knows (is surprised) that they won - and in such a situation, (29)b ((29)d) would surely not be true. That is, (29)b must entail (30)b since if (30)b is not true, neither is (29)b, and similarly for (29)d and (30)d. The corresponding existential entailments for

(29) g. John predicted who would win

h. John didn't predict who would win

can be expressed as

(30) g. $(\exists x)$ (John predicted x would win and x won)

h. $(\exists x)$ (It is false that John predicted that x would win,
but x won).

(That is, the factivity of predict with respect to wh carries over into the corresponding existential entailment (30)g of (29)g; the "rightness" of John's prediction, inherent in (29)g, is made explicit in the extra " x won" - clause of (30)g, and similarly for (29)h and (30)h. See Section 2a.ii.)

2b.ii. Existential entailments of belief and knowledge.

The factivity of the main verb of a sentence containing an indirect question also affects whether or not the sentence has an externally quantified (i.e. with the quantifier to the left of the main predicate) existential entailment of belief. The "existential entailment of belief" of a sentence (with a deep structure) of the form

(31) $NP - V_1 - S [wh + \left\{ \begin{array}{l} \text{someone} \\ \text{something} \\ \text{etc.} \end{array} \right\} . . .]$

(in which NP represents the "logical subject" and V_1 the main predicate⁶)
is the specific reading⁷ of

(32) $NP \text{ believes that } \left\{ \begin{array}{l} \text{someone} \\ \text{something} \\ \text{etc.} \end{array} \right\} . . . ,$

i.e.

(33) $(\exists x)$ (NP believes that $x . . .$).

If the existential entailment of belief is valid for a sentence containing an indirect question, this means that the sentence entails that the subject (or the indirect object) of the upper sentence has an opinion as to the answer to the indirect question. ("Having an opinion" should be interpreted in this context as having enough of an opinion to be able to give a confident (although not necessarily correct) reply if one were asked the question.⁸⁾ Sentences containing indirect questions under the following kinds of predicates either entail or presuppose (depending on which kind of predicate) that the subject (or indirect object) knows - i.e. has a correct opinion as to - the answer to the question:⁹⁾

"Emotive" factives (see below)

"Epistemic" factives
Semi-factives

} when positive¹⁰⁾

On the other hand, sentences containing indirect questions under these predicates:

Question-predicates (non-factives), when positive
Epistemic factives
Semi-factives

} when negative

entail that the subject either lacks an opinion as to (in the case of the non-factive question predicates) or doesn't know (in the case of the negative factives and semi-factives) the answer to the question.¹¹⁾

These generalizations are exemplified directly below.

The "emotive" factives, to which we just referred, include (be) surprise(d), be odd, and regret. Kiparsky and Kiparsky defined emo-

tive predicates as those taking "emotive" complements,

to which the speaker expresses a subjective, emotional, or evaluative reaction. The class of predicates taking emotive complements includes the verbs of emotion of classical grammar and Klima's affective predicates (Klima, 1964), but is larger than either and includes in general all predicates which express the subjective value of a proposition rather than knowledge about it or its truth value. (1971, p. 363)

Actually, the term "emotive" as I will be using it refers, in addition to those predicates which express a judgment made by an individual (or group) about the situation or event referred to in the complement, those predicates which express an individual's claim to having made such a judgment - for example, apologize, thank and forgive. Thus the statements of

(34) John apologized for { having stayed out so late
 how late he had stayed out
 when he had come home

assert that John claimed to have certain subjective feelings about the fact indicated in the complement - although they do not necessarily assert that he actually had such feelings, as he might have been insincere in his apology.

There are non-factive emotive predicates too, such as hope, prefer, and desire. By contrast, epistemic predicates, such as the factives realize and be well-known (and the non-factives believe and be sure) express the opinion of an individual (or group) with respect to the truth-value of the proposition contained in their complement. Evidently the epistemic-emotive distinction exhausts the class of factives (although there are some non-factive complement-taking predicates which are neither emotive nor epistemic, e.g. seem, turn out, happen). All

the semi-factives - the indifferent predicates such as remember and suspect and the wh-factives such as decide - are epistemic, if we allow the epistemic class to include verbs of saying such as announce and suggest. This seems reasonable, as, for example, announce can be analyzed as some elaboration of "inform" and "John suggested that we should leave" has at least a sincerity condition that John must believe that we should go - that is, it implies that John believes the complement proposition. Analogous reasoning with respect to the non-factive verbs of questioning classes them as epistemic - for instance, wonder means "want to know" or "wish that one knew". Thus the set of predicates which take indirect questions is divided along the distinction epistemic-emotive, with a sub-class of the pure factives being emotive and the remainder being epistemic.

Let us return now to some examples of our distinction among sentences containing indirect questions between those which assert or presuppose that the referent of the subject (or indirect object when the embedded question is a subject complement) has an opinion as to the answer to the question, and those which do not assert this. Sentences containing indirect questions embedded under emotive factives presuppose that the subject (or indirect object) knows the answer to the question - e.g.

- (35) a. John was amused at where Bill intended to spend
his vacation.
- b, It wasn't surprising to John where Bill intended to
spend his vacation

presuppose that John knows where Bill intended to go. That is, John could be neither amused nor unamused, surprised nor not surprised, at where Bill intended to spend his vacation, unless he had an opinion - in fact, a correct opinion, as to the answer to "Where does (did) Bill intend to spend his vacation?" Thus an existential entailment (in fact, a presupposition) of belief is valid when the upper sentence embedding the indirect question has a factive emotive main predicate. Since the truth-conditions on (35)a and b require that John's opinion as to the answer be correct, there is in addition a stronger existential presupposition of knowledge.

On the other hand, sentences containing indirect questions under "positive" (see footnote 10) epistemic factives or semi-factives do not presuppose, but rather only entail that the subject (or indirect object) has a correct opinion as to the answer to the question. Sentences containing indirect questions under "negative" non-factive upper sentences (as in (36)d and e below) do not in general entail that the subject has an opinion as to the answer to the question, although they are always compatible with such a statement. (36)e, for example, is vague between asserting that John didn't wonder who won the election because John thought he knew who won the election, and asserting that John didn't wonder who won because he wasn't interested in who might have won (if indeed anybody did) (compare (22) above; and see also Chapter III, Section 3). In the first situation, it is true that $(\exists x)$ (John believed that x won the election), but because of the vagueness of (36)e it does not entail this. The same is true of (36)d.

Thus of

- (36) a. John realized
b. John remembered
c. John didn't forget
d. It was no mystery to John
e. John didn't wonder
- who won the election,

(36)a-c have an existential entailment of belief. (36)d and e do not, but they are compatible with the statement that $(\exists x)$ (John believed that x won the election (while (37)a and b below are not compatible with the analogous statement). Note that (36)a-c also entail, on account of the factivity of their main verbs, that John had a correct opinion as to who won the election, while if (36)d or e is true, then even when it is understood that John had an opinion as to who won the election, it is still left open as to whether this opinion was correct or not. (We will take up the notion of factivity as "correct opinion" in Section 2a.ii and in more detail in Chapter III.) Thus when a sentence containing an indirect question under a factive or semi-factive predicate has an existential entailment or presupposition of belief, it also has an existential entailment (presupposition) of knowledge. That is (36)a-c entail that $(\exists x)$ (John knew that x won the election); (35)a and b presuppose that $(\exists x)$ (John knew that Bill intended to spend his vacation at x). Finally, note that the existential entailments of belief or knowledge or sentences (36)a-c are not also presuppositions of these sentences, as the negations of (36)a-c do not entail them.

As we pointed out above, sentences containing non-factive "question" predicates entail, when they are "positive," that the subject (or indirect object) lacks an opinion as to the answer to the question, as in

(37) a. John wondered where the money was hidden.

b. It was a mystery to everyone where the money was hidden.

(This entailment is relaxed when the main verb is ask or another verb of saying -

(37) c. John asked where the money was hidden

does not necessarily entail that John does not know the answer, as he might have asked a rhetorical question, or he might have been feigning ignorance; see footnote 11.)

Sentences containing indirect questions under epistemic factives and semi-factives in negative environments entail neither that the subject (or indirect object) has an opinion nor that he lacks one:

(38) a. John doesn't realize where the money is hidden.

b. John has forgotten where the money is hidden.

c. It is unknown to John where the money is hidden.

That is, (38)a-c do not entail that John lacks an opinion as to where the money is hidden, as do the examples of (37)a-b; the sentences of (38) allow the possibility that John has an incorrect opinion. They can be continued by either ". . . - he hasn't the vaguest idea" or ". . . - he thinks it's down the well, but he's wrong." What this class of indirect-question sentences has in common with the class of the last paragraph (i.e. the class containing non-factive upper verbs in a positive context) is that neither class entails that the subject

has an opinion as to the answer. The difference between the two is that the "positive" non-factive indirect-question sentences are incompatible with the statement that the subject (or indirect object) has an opinion as to the answer, while (38)a-c, like (36)d and e, are compatible with this statement.

In summary, sentences containing indirect questions can be classified with respect to their existential entailments of belief as follows:

Emotive factives: Trigger an existential presupposition of knowledge;

(39) John is (not) surprised at who was there
presupposes

(40) John knows (has a correct opinion as to) who was there.

Epistemic factives and semi-factives (positive): Trigger an existential entailment of knowledge;

(41) John remembers who was there
entails

(40) John knows (has a correct opinion as to) who was there.

Epistemic factives and semi-factives (negative): Trigger no existential entailment of belief, but are compatible with such a statement;

(42) John doesn't remember who was there
entails

(43) (=negation of (40)) It is false that John knows who was there
(i.e. either John has no opinion as to who was there, or he has only an incorrect opinion).

Non-factives (positive): Incompatible with existential statements
of belief;

(44) John wonders who was there

entails

(45) It is false that John has an opinion as to who was there.

Non-factives (negative): Trigger no existential entailment of belief
but are compatible with such a statement;

(46) { It's no mystery to John who was there
John doesn't wonder who was there

entail

(47) Either John has an opinion as to who was there, or John
is not interested in the question of who was there.

(Since (47) is a disjunction, (46) has no existential entailment of
belief.)

Section 1c. Some distributional facts about indirect questions
noted by Ross, and an attempt to explain them in terms
of the notion of "existential entailment of belief" or
"having an opinion as to the answer."

The distinction we have just made among sentences containing indi-
rect questions, between those which entail or are compatible with an
existential statement of belief, and those which contradict such a
statement, is very similar to the distinction between "Conjunctive"
and "Disjunctive" questions proposed by Ross (1970b). His distinction
forms the basis for a claim that there are two different ways of

analysing the derivation of sentences containing indirect questions depending on whether the question is conjunctive or disjunctive. I will be concerned here not so much with the derivations proposed by Ross¹² as with the conjunctive-disjunctive distinction and Ross's claim that a number of syntactic contrasts are explainable by distinguishing between those predicates which take conjunctive and those which take disjunctive indirect questions. Below I list the properties which define the distinction and argue that if the class of predicates examined is widened and the generalizations somewhat re-stated, most of the syntactic facts cited by Ross are semantically explainable in terms of whether or not a given sentence has or lacks a particular existential entailment (or presupposition) of belief.

Conjunctive and disjunctive indirect questions are distinguished by the following criteria, quoted from page 2 of the handout for Ross's talk (the terms conjunctive/disjunctive are derived from fact (48)c):

(48) Summary of criteria:

<u>Disjunctive Questions</u>	<u>Conjunctive Questions</u>
a. Allow <u>whether</u>	Exclude <u>whether</u>
b. Allow <u>any</u> , <u>ever</u> , etc.	Exclude <u>any</u> , <u>ever</u> , etc.
c. Take disjunctive appositions	Take conjunctive appositions
d. Exclude <u>namely</u> .	Allow <u>namely</u>
e. Exclude appositive clauses.	Allow appositive clauses.
f. Allow <u>the hell</u>	Exclude <u>the hell</u>
g. Exclude <u>either</u>	Allow <u>either</u>

(Below we discuss each of these points in turn.) The predicates which take indirect questions can be divided, it is claimed, according to

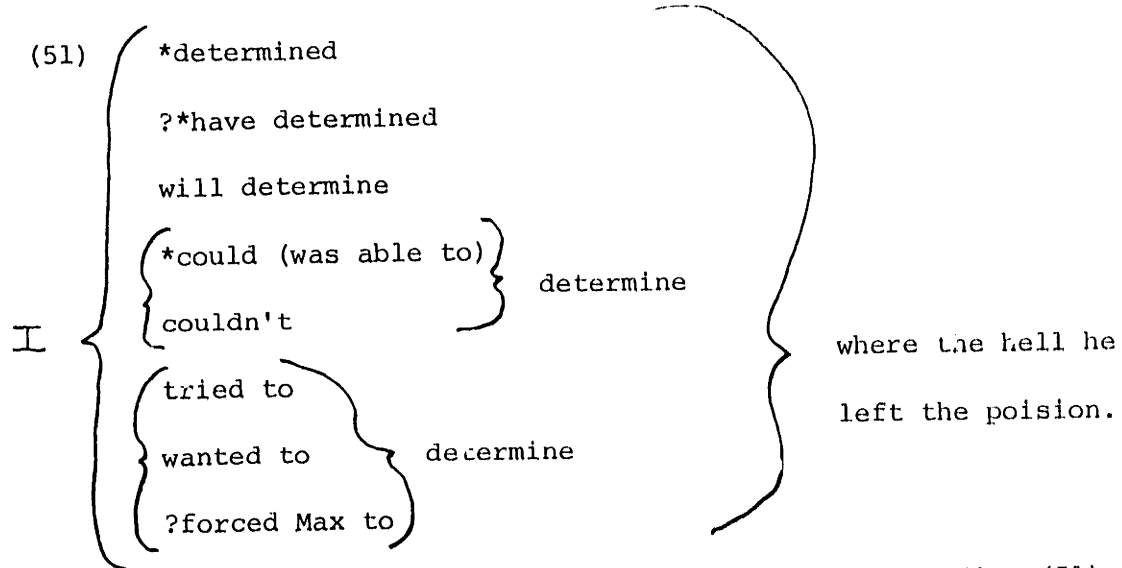
whether they take conjunctive or disjunctive questions.¹³ Ross lists some examples as follows (p. 1):

(49)	<u>Conjunctive</u>	<u>Disjunctive</u>
	be wild	be unknown
	be fantastic	be a mystery
	be surprised at/a surprise	be unclear
	be incredible	wonder
	be odd	inquire
	be horrified at	ask

He sums up the class of verbs which take conjunctive questions as (p. 4):

- (50) a. Emotive factives (these never take disjunctive questions).
b. All other factives, except concessives, like grant,
concede, acknowledge, admit.
c. clear, determine, say, tell.

The verbs which take disjunctive questions amount to our non-factive "verbs of questioning." (Ross's list includes be unknown, which we listed not as a verb of questioning but as a factive; however, we will show that, like other "negative" epistemics, be unknown fits both paradigms.) The conjunctive-question predicates correspond to our factive and semi-factive classes. However, Ross points out (p. 2) that the conjunctive predicate determine¹⁴ allows disjunctive questions when the upper clause is negated or modified in a number of ways, as exemplified in (51), where a question containing the hell - a disjunctive characteristic - is embedded under various sentences containing determine, a conjunctive predicate:



Other epistemic factive and semi-factive verbs follow paradigm (51);

- (52) a. I { *remember
 don't remember } what the hell I did with my watch.
 b. John { *understands
 can't understand } why the hell you won't apologize.

Emotive factives, on the other hand, never allow the hell (or any other "disjunctive" characteristics) in questions embedded under them:

- (53) a. I'm surprised at who (*the hell) you picked for the committee.
 b. It's fantastic what (*the hell) a little tarragon can do for a salad.

Later we will generalize on these observations to formualte the conditions under which this subclass of "conjunctive" predicates allow disjunctive questions; however, it should be pointed out that (51) and (52) indicate, as will many examples to come, that the ability to embed either conjunctive or disjunctive questions (as defined by the criteria (48)), or both, is a characteristic of the whole upper sentence, not just a feature of the main predicate. Thus "conjunctive" (and "disjunctive"), as applied to predicates, must be considered an abbreviation for

"taking conjunctive (disjunctive) predicates when unmodified by not, will, try, etc."

We will now examine each of the criteria of (48) which are claimed to divide "conjunctive" from "disjunctive" predicates. In each case we will consider how the class of sentences containing indirect questions is bisected by the criterion. In each case we will try to show that Ross's conjunctive/disjunctive classification of predicates which take indirect questions cannot account for the paradigms, arguing in most cases that the distributional facts pointed out by him should be accounted for in terms of whether or not the speaker of the sentence is entailed or implied to have an opinion as to the answer. (That is, most of Ross's criteria apply only when the subject is first-person (in the case of predicates which take subject complements, when the indirect object is first-person or unexpressed). In the first-person examples, the existential entailments of belief or knowledge are about the beliefs of the speaker. In third-person examples, which in general have no entailments about the speaker's beliefs, one cannot (as I will argue) distinguish between conjunctive and disjunctive.)

The first set of facts cited by Ross involves the distribution of whether-questions. (Unlike the other sets of facts we will discuss, based on (48)b-g, we do not succeed in finding too satisfactory an explanation for the distribution of whether-questions based on "knowing the answer".) Ross offers the following paradigm as evidence for his contention that only disjunctive predicates allow whether-questions (p. 1):

- (54)
- | | | |
|-------------------------------------|---|---------------|
| Why he did it | } | is a mystery. |
| How long he'll be in jail | | |
| a. Who he buried where | | |
| When he hid the daggers | | |
| Whether or not he has a conscience | } | is wild. |
| Why he did it | | |
| How long he'll be in jail | | |
| b. Who he buried where | | |
| When he hid the daggers | | |
| *Whether or not he has a conscience | | |

However, (54) shows only that factive emotive predicates do not allow whether-questions, while "question" predicates do. And if ability to take whether-questions is indeed a characteristic of (and only of) disjunctive predicates, we expect the epistemic factives and semi-factive predicates to take whether-questions only in certain "negative" settings - that is, just as in (51) determine takes questions which contain the hell (and are therefore disjunctive questions) when and only when it is modified by not, try, etc., we would expect epistemic predicates like know, find out and remember to take whether-questions just under these conditions. But this is certainly not the case. In fact, the property of being able to embed whether-questions splits the indirect-question predicates neatly between the (factive) emotives on one hand and all remaining predicates, factive and non-factive on the other:

- (55)
- | | | |
|----|---------------------|--|
| a. | (Factive epistemic) | John (hasn't yet) figured out |
| | | whether or not 108 is prime. |
| b. | (Semi-factive) | John determined (couldn't determine) |
| | | whether Bill had left yet. |
| c. | (Non-factive) | I (don't) wonder whether the party has |
| | | started. |

d. (Factive emotive) * $\left\{ \begin{smallmatrix} \text{I'm} \\ \text{John is} \end{smallmatrix} \right\}$ amazed at whether or not

Bill won the election.

This means that ability of predicates (or upper sentences) to take whether-questions cannot be correlated with their lack of ability to take that-clauses, as Ross suggests with paradigm (50) and his derivations (see footnote 12), since the sentences of (55)a, b and d are grammatical with whether (or not) replaced by that. Nor does my distinction, between upper sentences which entail or presuppose that the subject (or indirect object) has an opinion as to the answer to the indirect question and those which have no such entailment, correspond to paradigm (53), since (55)a, b, and c are grammatical in both "positive" and "negative" versions. Since the factive emotive predicates form a natural semantic class (by virtue of triggering a factive presupposition of knowledge (see also the discussion of emotives in Kiparsky and Kiparsky (1971))), it is possible to write a redundancy rule which states that predicates marked as emotive cannot take whether-questions, while other indirect-question predicates can take them. But this is an ad hoc solution, as there is no other evidence that these two properties are inversely linked. Moreover, there is reason to suspect that the inability of factive emotive predicates to take whether-questions is not of semantic origin - i.e. the badness of (55)d, etc., must be explained either in terms of syntax or of performance. The reason is that although (55)d is clearly ungrammatical, a meaning can be extracted from it. Baker (1968) would have us interpret embedded whether-questions as disjunctions of sentences containing

that-clauses ~ for example,

(56) John knows whether Bill won the election
is interpreted as

(57) Either John knows that Bill won the election or John
knows that Bill didn't win the election

(p. 50). Although we argue later that Baker's extension of this interpretation to indirect who-, what-, etc. questions, via the universal quantifier, is inaccurate as a paraphrase, certainly it is correct that (56) entails (57). (57) can further be paraphrased as

(58) If Bill won the election, John knows that Bill won;
if Bill didn't win the election, John knows that Bill
didn't win.¹⁵

Thus Baker's paraphrase would interpret the ungrammatical

(59) *John was surprised at whether or not Bill won the election
as

(60) Either John was surprised that Bill won the election or
John was surprised that Bill didn't win the election,¹⁶

or, equivalently, as the quite meaningful and grammatical

(61) If Bill won the election, John was surprised that
he won; if Bill didn't win the election, John was
surprised that he didn't win.

The point is that if (59) can be interpreted as (61), it makes perfect sense semantically, so the mechanism for indicating its ungrammaticality should evidently be placed outside the semantic component. We could

possibly write a syntactic redundancy rule basing the exceptional behavior of factive emotives with respect to whether-complements on some syntactic feature of these predicates - for example, [+Adversative] (in the sense of Klima (1964)), the feature which allows most factive emotives to take any, ever, etc. in that-clauses (see below). But this would be as ad hoc as the semantic redundancy rule we were mentioning a while back, unless evidence can be found linking the two features. In lieu of anything better, I have attempted to construct a "performance" explanation of the badness of (59), which will be found in Appendix 1. (I have relegated this argument to an Appendix since I feel that (59) deserves the "*" of intuitively apprehensible ungrammaticality, so that whatever the merits of a "performance" argument may be, it will still be necessary to incorporate a device, ad hoc or otherwise, to account for the anomaly of (59) in terms of the syntactic (competence) grammar.)

The next criterion allegedly distinguishing "disjunctive" from "conjunctive" indirect questions (#(48)b on our list) is the ability to take any, ever, etc. in the question clause. Ross's example is

(62) When he ever had a chance to buy anything is {^{unknown}
*fantastic },

in which unknown, being a "disjunctive" predicate, allows any and ever while fantastic, being a "conjunctive" predicate, does not. The implication is that those predicates which allow whether-questions allow any, ever, etc. in an embedded interrogative clause, while predicates which disallow whether-questions are ungrammatical with any and ever.

"Any, ever, etc." refers to the class of elements which Klima (1964, p. 313) labeled "Indefinites," including also even (on the VP), a or a single (in the sense of "any"), at all, and the auxiliary need (as opposed to the main verb need):¹⁷

- (63) a. I {^{wonder}
 *discovered} why he even attempted to rob that bank.
- b. John {^{asked}
 *was surprised at} who could spare a dime.
- c. It's {^{a mystery}
 *odd} how he even managed to survive a single day.
- d. It was {^{unclear}
 *surprising} who had any money at all.
- e. I {^{wonder}
 *am happy about} whether I need leave yet.

(Since we are using the term "indefinite" as a feature on determiners, with some as well as a and any being indefinite - as opposed to the, those, etc., which are definite - we will not adopt Klima's name for this class but continue simply to refer to its members as any, ever, etc.)

But the distribution of any, ever, etc. within indirect questions turns out to be much more complicated than the samples of (62)-(63) would indicate. Furthermore, this distinction among sentences containing indirect questions, between those which allow any, ever, etc., and those which do not, does not coincide with the distinctions made by any of Ross's other criteria. This is probably because the problem of whether any, ever, etc. are permissible is not particularly a problem about indirect questions or even about embedded clauses in general; these elements appear in relative clauses and in main clauses as well.

Therefore, the explanation of why the inclusion of these elements is grammatical in some indirect questions and ungrammatical in others should be derivable from the explanation for the distribution of any, ever, etc. in all kinds of clauses and sentences. Because of this, an attempt like Ross's to explain this distribution in terms of a binary syntactic feature on indirect question-taking predicates is misguided; the same reasoning would apply to an attempt by me to explain it purely in terms of my semantic distinction among sentences containing indirect questions, with regard to existential entailments of belief. For this reason (and because the any, ever, etc. problem is not directly related to our present concern, which is the semantics of indirect questions), we will limit ourselves to an attempt to describe the distribution of any, ever, etc. in indirect questions in terms of the notions we have available (e.g. "Affective," "Negative," etc.). The data are to be found in Appendix 2.

The rest of Ross's contrasts are more easily dealt with. Points (48)c and d are illustrated by Ross with

- (64) a. Who he buried where - (namely) Otis under the tomatoes,
 {^{and}} Zack in the pumpkin patch, {^{and}} Fritz near the
 *or
 toolshed - is fantastic.
- b. Who he buried where - (*namely) Otis under the tomatoes,
 *{^{and}} Zack in the pumpkin patch, *{^{and}} Fritz under the
 {_{or}}
 toolshed - is a mystery.

That is, "conjunctive" and "disjunctive" predicates both allow lists of NP's - corresponding to the type of NP pronominalized by the wh-word - to appear in apposition to indirect questions embedded under them, but there is a difference in the sort of apposition allowed. Conjunctive predicates, such as is fantastic, allow appositions of NP's preceded by namely and connected by and; disjunctive predicates (such as be a mystery) allow appositions of NP's connected by or (this is the source of the "conjunctive"/"disjunctive" terminology), and each disallows what the other allows. Ross would explain this difference in terms of the ability of the disjunctive (and the inability of the conjunctive) predicates to take whether-questions, since disjunctive questions are, in his analysis, derived from whether-questions, which can be derived from a series of disjunctions (see footnote 12); on the other hand, conjunctive questions are derived from a series of conjunctions of that-clauses. Note that those indirect questions which allow disjunctive appositions allow them to be preceded by whether or whether it was and are often improved by this addition (see the examples of (66) and (67) below).

I propose a quite different solution for this contrast: A conjunctive apposition in an indirect question (with or without namely) indicates that the speaker of the sentence containing the question believes himself to know the answer to that question. A disjunctive apposition indicates either that the speaker does not know the answer or that, for some reason, he wants to conceal his opinion as to the

answer from his addressee. In more formalizable terms, conjunctive appositions with namely are possible in indirect questions except when the sentence containing the indirect question entails that the speaker does not know or have an opinion as to the answer. Disjunctive appositions are allowed except when it is entailed that the speaker does know the answer. In view of what we said in Chapter I about the speaker's role in presupposition (and, consequently, in entailment), it is clear that among sentences containing indirect questions, the only ones which will have entailments about the speaker's beliefs will be those whose main clauses have a first-person subject (or indirect object). Included are those sentences which have embedded questions as subjects (under such predicates as be a mystery, be surprising) and lack indirect objects, since in this case the class of referents of the (understood) indirect object is assumed to include the speaker. My theory thus predicts that sentences which have third-person (or, less commonly, second-person) subjects (or indirect objects) and contain an embedded question will be grammatical with either conjunctive or disjunctive appositions, since such sentences entail nothing about the speaker's beliefs. There are some exceptions to this which I will try to explain in the "performance" terms of Appendix 1.

I will support these claims by example. Beginning with the more tractable epistemic cases, note that the sentences of (65), which like (64)a allow conjunctive appositions and disallow disjunctive ones,

entail, or are at least compatible with the statement that the speaker (the referent of I) knows, or believes he knows, the answer to the indirect question:

- (65) a. I'm aware of
 b. I haven't forgotten
 c. It's no mystery to me
 d. Until yesterday it was unknown to me
- } who won - (namely)
 John {^{and}_{*or}} Bill
 {^{and}_{*or}} Tom.

Meanwhile, the sentences of (66) follow the paradigm of (64)b, as they allow disjunctive appositions, disallow conjunctive appositions and namely, and entail that the speaker does not know the answer to the indirect question:

- (66) a. I never found out
 b. I forget
 c. It's unknown (to me)
- } who won {(*namely)
 (whether it was)} John
 {^{*and}_{or}} Bill {^{*and}_{or}} Tom.

The third-person examples of (67) allow both conjunctive and disjunctive appositions, as they entail neither that the speaker knows nor that he doesn't know the answer (although they vary as to their entailments that Mary, the subject, knows or doesn't know):

- (67) a. Mary knows who won -
 b. Mary doesn't know who won -
 c. Mary {wonders
 doesn't wonder} who won -
- } { (namely) (it was) John and
 Bill.
 (whether it was) John or Bill.
 (?namely) (it was) John and
 Bill.
 (whether it was) John or Bill.

(Although the namely-clause appears a bit odd with (67)c, this is only because it is a non-sequitur; it is not inconsistent with or contradictory to the rest of the sentence as in (66)a-c.)

The relation between the speaker's "knowing" or "not knowing" the answer (in his own opinion) and his use of conjunctive or disjunctive appositions in (64)-(67) is easy to explain - if the speaker knows (or at least thinks he knows) the answer to the indirect question, it is natural for him to specify this answer - usually in an abbreviated or cleft form - in the same utterance. Of course, if he needs to specify two or more people, places, etc. in order to give a complete answer, he will connect these two or more NP's with and, since the complete answer is a conjunction of them. In those cases where the speaker is entailed not to have a confident opinion as to the answer to the indirect question, it is still entailed, as with all first-person sentences containing indirect questions, that he believes that there is an answer. That is,

- (68) a. I wonder
 b. It's a mystery
 c. I can't imagine
- } who he buried where

all entail

- (69) I believe (i.e. the speaker believes) that he buried someone
 somewhere,

with both somes interpreted as non-specific. (Later in this chapter we will go more systematically into the non-specific entailments and presuppositions of sentences containing indirect questions.) Now, to say that a person believes a question to have an answer means (as we argued in Chapter I) that he believes that there are possible answers to that question, i.e. sentences which fit the syntactic definition of

"answer" and which are either true or false. And in practice, it is generally not too difficult for a person to suggest some possible answers to a question he believes to be answerable, even if he has no idea which (or whether any) of these suggested answers is correct. In sentences with disjunctive appositions, the implication is that the speaker believes that one (and only one) of the disjunctions constitutes the single correct answer to the indirect question, but that he doesn't know which of these it is, as is suggested by the "whether it was . . . or . . ." construction. Thus in the "good" versions of the sentences of (66) the speaker is merely justifying his entailed belief that there was a winner by suggesting some possible answers to "Who won?". The "bad" versions of (66)a-c are ruled out because in them the speaker is contradicting the entailment that he doesn't know who won by "naming" the answer to that question. The bad versions of (65)a-c are out because if the speaker knows the answer to the question, he is hardly likely to follow his utterance of it with a list of several possible answers, all but one of which he necessarily knows to be incorrect.¹⁸

The emotive predicates cause some difficulty as regards criterion (48)c, since disjunctive appositions appear to be ruled out entirely in questions embedded under emotive predicates, regardless of whether the main subject (indirect object) is first- or third-person and regardless, therefore, of whether the speaker is entailed to know the answer to the indirect question. (Conjunctive appositions, are, as we would expect, permissible in all indirect questions under emotive factives.) Thus in addition to (64)a we have

- (70) a. I am amazed at
 b. Tom is amazed at
 c. It's odd
 d. I find it odd
 e. Tom finds it odd
- who won the election -
 (namely) John and Bill.
 {*(whether it was) John or Bill.}

The paradigm is, however, consistent with our observation in Appendix 1 that it would be unusual for a speaker to use an indirect-question construction under an emotive predicate if he does not know the answer to the question, since, for example, it is unlikely that someone would arrive at the opinion that Tom is amazed without also having some idea of what Tom is amazed about. Since this was noted in connection with whether-questions - and since the class of indirect question predicates which rule out disjunctive appositions in all cases is the same as the class which is entirely unable to take whether-questions, there is evidence to support Ross's claim that disjunctive appositions are derived from whether-questions. (However, this does not constitute evidence that the disjunctive questions themselves are, no matter what the surface wh-word, derived from disjunctions of whether-questions. See footnote 12.)

The explanation of the facts of point (48)g, illustrated by

- (71) a. How long a sentence he'll get - {^{either}_{*whether}} 20 or
 30 years - is wild.
 b. How long a sentence he'll get - {^{*either}_{whether}} 20 or
 30 years - is a mystery.,

pretty much follows from the last paragraph. First, to the extent that (71)a is acceptable with either (I would be inclined to give it a ?), it might mean either that (1) the speaker is trying to support his (presupposed) claim that he knows the answer to the indirect question with "either 20 or 30 years" - that is, he knows approximately what the answer is, or that (2) the answer itself is a disjunction - see footnote 18. The whether-apposition in (71)b means that the speaker is suggesting a couple of possible answers, although he doesn't know which one is correct. Thus either-appositions are good if the sentence entails that the speaker knows the answer to the indirect question, and whether-appositions are good if the sentence entails that the speaker doesn't know the answer. Sentences containing indirect questions which entail neither that the speaker knows the answer to the question nor that he doesn't know it allow either either or whether (again, if we adopt a conversational postulate to the effect that the use of an emotive predicate with an indirect question implicates that the speaker has an answer to the question, we can state more accurately that a whether-apposition is allowed in an indirect question unless the sentence as a whole either entails or implicates that the speaker knows the answer):

- | | | |
|----------------------------|---|---|
| (72) a. Mary knows | } | how long a sentence he'll get -
{either } 20 or 30 years.
whether |
| b. Mary doesn't know | | |
| c. It's no mystery to John | | |

Point (48)e consists of the following contrast:

- (73) Where he lives, which is very expensive, is {^{wild}
*unknown}.

But in this case, I think that Ross has just confused indirect questions with free relatives, and his generalization is faulty. While disjunctive

questions never allow appositives of the type exemplified in (73), consider the following, which contain conjunctive questions:

(74) *Where he lives, which is very expensive, is well-known.

*I know where he lives, which is very expensive.

*Who he's dating, who is very ugly, is wild.

*How he did it, which was very quickly, was fantastic.

*John realized when Bill was arriving, which was very late.

The facts of (74) are not surprising, since in general, it is impossible to hang appositive clauses on indefinite NP's, specific or non-specific:

(75) a. *John saw a girl, who was knitting. (Compare: John saw a girl who was knitting.)

b. ?Some men, who had very long beards, entered the room.

c. *I've always wanted to own an elephant, which $\begin{Bmatrix} \text{is} \\ \text{are} \end{Bmatrix}$ very large.

Why, then, is the first version of (73) acceptable, while the examples of (74) are not? The answer lies in the ambiguity of

(76) Where he lives is wild.

Only one reading of (76) contains an indirect (conjunctive) question - on this reading, (76) means essentially "It's wild that he lives where he does." The other reading contains a free relative clause (see Baker (1968), Chapter II), and can be paraphrased as "The place where he lives is wild" or "He lives in a wild place." On the indirect question reading, the predicate "wild" modifies the entire clause "where he lives;" on the free relative reading, "wild" refers only to "where." Without

going into the source of free relatives, it seems clear that this reading of (76) must contain in its deep structure either the NP the place, or some pro-form such as THE PLACE or an equivalent - in any case, on the free relative reading of (76), where has a definite NP as its source (while on the indirect question reading, the source of where contains the indefinite NP some+place). Thus it is the free relative reading, and not the indirect question reading, of (76) which permits appositive clauses. The first sentence of (73) is, because of the appositive, unambiguous - only the free relative reading is possible. When we try to stick an appositive clause into an unambiguous (with respect to the free relative/indirect question distinction) sentence, as we did in (74), the result is ungrammatical.

Point (48)f is exemplified by

- (77) How { the hell
 in the world } he could lie so artlessly in court
- is { *odd
 unclear }.

Again, it seems to me that our ability to insert the hell or in the world after the wh-word of an indirect question depends inversely on whether or not the sentence as a whole entails that the speaker knows the answer to the question. If it does, we cannot insert the hell; if it does not, we can. This distinction is clear-cut when the sentence is first-person:

(78) I wonder (don't know)

*I know

*It's odd (to me)

*I determined

*I was able to

I will

I couldn't

I tried to

I wanted to

determine

who the hell won the election.

The third-person cases, which entail neither that the speaker knows the answer nor that he doesn't, allow the hell (except when the main verb is emotive). When the hell or in the world appears in such an indirect question, it is an indication that the speaker does not know the answer, as the continuations to (79)a-d show:

- (79) a. John wonders who the hell won, { . . . and so do I.
* . . . but I refuse to tell him.
- b. John doesn't know who the hell won, { . . . and neither do I.
* . . . but I do.
- c. John knows who the hell won, { . . . but I don't.
* . . . and so do I.
- d. John was amazed at who the hell won the election,
{ ? . . . but I don't know who it was.
* . . . and so was I.

However, there are exceptions to this generalization which I have no formal explanation for. One example which would be ruled out by my analysis but which I find only moderately unacceptable is

(80) ?I finally determined where the hell he left the poison.

Perhaps the hell is allowed here because it refers to a time in the past when the speaker did not know the answer to the question. And perhaps in this case the hell indicates difficulty in finding out the answer rather than ignorance as to the answer. Another oddity is the apparent inability of whether-questions to take the hell:

(81) *I can't imagine whether the hell he is coming to the party or not.

Maybe (81) is ruled out for an independent reason - the hell and in the world seem to suggest that there is a wide range of possible answers which the speaker considers plausible. Thus it would be strange to insert the hell after whether since in this case there are of course only two possible answers.

This concludes our discussion of Ross's conjunctive/disjunctive distinction among indirect questions and indirect-question-taking predicates. The discussion was meant to show that while Ross's distinction does not correspond exactly to our distinction between indirect-question sentences which have and those which lack existential entailments of the speaker's belief, the facts that he has pointed out, when taken together with the additional facts I have observed, are describable (and to some extent explainable) in terms of the categories I have proposed.

Section 2: Indefinite NP's in Referentially Ambiguous Contexts.

2a. Some problems relating to the semantic interpretation of indirect questions.

Any analysis of indirect questions must take into account three

features of this construction which have both syntactic and semantic consequences: The complement structure, which creates a "referentially ambiguous context" (defined below in 2b.i), the indefinite noun phrase, which ordinarily is the basis for an ambiguity when it appears in such a context, and, since we are concentrating on factive indirect questions, the factive predicate, which is responsible for entailments and presuppositions based on the embedded interrogative clause. Another feature of sentences containing indirect questions under factive predicates, which is semantic in nature but can be expressed as being triggered by the wh-complementizer, is the exhaustiveness constraint which is a strict truth condition on this type of sentence.

2a.i. The specificity problem.

The wh-words of questions, either direct or indirect, are assumed to be morphologically derived from indefinite pronouns attached to the right of wh: wh+someone becomes who, wh+something becomes what, etc. (see, for example, Katz and Postal (1964), p. 92). We will not be concerned here with syntactic evidence bearing on the deep structure representation of sentences containing indirect questions; rather, we will assume the simplest possible syntactic analysis for these sentences and try to determine what apparatus is necessary in order to account for their semantic properties - i.e. their presuppositions and entailments. By the "simplest" deep structure I merely mean one which contains only those elements which I should think everyone would agree it must contain. Thus (82)-(84) are assumed to be derived from (85)-(87) respectively:

(82) John knows who won the election.

(83) John is surprised at who won the election.

(84) John wonders who won the election.

(85) John knows $_S$ [wh+someone won the election].

(86) John is surprised at $_S$ [wh+someone won the election].

(87) John wonders $_S$ [wh+someone won the election].

(This is essentially the analysis suggested by Baker (1968, Chapter II, especially p. 69).) One reason for the naturalness of this source is that it implies that (82) is semantically related to

(88) John knows that someone won the election,

and (83) to

(89) John is surprised that someone won the election.

(Of course (84) has no such counterpart since wonder does not take declarative complements.) But we cannot begin to consider just what this relationship is until we note that (88) and (89) are ambiguous; (88) can be interpreted as

(90) $(\exists x)$ (John knows that x won the election),

("There is someone such that John knows that that person won the election,")

or as

(91) John knows that $(\exists x)$ (x won the election),

("John knows that there is someone such that that person won the election")

(and similarly for (89)). In order for (90) to be true, John must be capable of giving an "informative"¹⁹ (and, since know is factive,

a correct) answer to the question "Who won the election?". The crucial condition on the truth of (91) is not so strong. For (91) to be true, there need not exist a specific individual with the property that John knows that he won; all that is necessary is for John to know that the election had a winner, without necessarily knowing who that winner was. We say that the indefinite noun phrase someone of (88) is read as "specific" in interpretation (90) and as "non-specific" in interpretation (91); the propositions expressed by (90) and (91) are referred to respectively as the specific and the non-specific readings of the ambiguous (88). But this ambiguity is not a feature of the indefinite NP by itself; rather it must be assumed to depend on the interaction of the indefinite NP with the embedded construction. This is clear since most simplex sentences containing indefinite noun phrases are not thereby ambiguous - e.g. the indefinite NP a book in

(92) I have a book

can be labelled neither specific nor non-specific. If I have any (non-specific) book, then there is a (specific) book which belongs to me; if there is a book which I have, then I am, in general, a book-possessor. (92) is not ambiguous along these lines since there is no way to differentiate a specific from a non-specific reading. Thus, it is not strictly proper to speak of [\pm specific] as a feature on indefinite noun phrases, since they take on this polarity only when they appear in an embedded clause or when they appear as the direct object of one of a very few transitive verbs such as look for and want. Also, Fodor (1970, pp. 30-37)

shows that we cannot, in general, account for the multiplicity of readings which result from the presence of an indefinite NP on the lowest level of a hierarchy of embedded clauses (there are in general n readings created by the specific/non-specific distinction for a sentence containing an indefinite NP n clauses down). Rather, she argues, when there are several levels of embedding, each indefinite noun phrase must, for each reading, be designated as [\pm specific] with respect to each predicate which appears above it in the phrase-structure tree (such an NP is always neutral with respect to the predicate of its own clause, as is the case with simplex sentences). Since, for the sake of clarity, we are restricting our consideration here to sentences containing only one embedded clause, the discussion is limited to two way ambiguities, and it is sufficient to distinguish the two readings in terms of whether an indefinite NP is [$+$ specific] or [$-$ specific] with respect to the main predicate.²⁰

Clearly, both readings of

(88) John knows that someone won the election
are related to

(82) John knows who won the election.

(82) entails both the specific and non-specific readings of (88). (82) entails the specific reading of (88) because since it entails, by virtue of its factive presupposition, that someone won, it also entails that there must be at least one person whom John knows to have won. (Note also that (82) follows from the specific reading of (88) plus the statement that only one person won the election: If there was

only one winner, and John knows that he won, then John knows who won.) That (82) entails the non-specific reading of (88) also follows from the factive presupposition: if John knows who won, then since there was a winner John must know that there was a winner. The situation is somewhat different for indirect questions under emotive predicates:

(83) John is surprised at who won

entails the specific reading of

(89) John is surprised that someone won,

i.e. (83) entails $(\exists x)(\text{John is surprised that } x \text{ won})$. This is because if John was surprised at who won in general, there must be at least one person such that John was surprised that that person won. (And (89) in conjunction with the proposition that only one person won entails (83).) However, (83) certainly does not entail the non-specific reading of (89), which can be expressed as "John is surprised that there is someone such that that person won the election" (John is surprised that $(\exists x)(x \text{ won the election})$), or, more colloquially, "John is surprised that anyone won the election." For (83) means that John is surprised at who the winners were, but the non-specific reading of (89) means that John is surprised that there were any winners at all. While (89)'s non-specific reading is not strictly speaking incompatible with (83), it does not follow from it. Later in this chapter we will show that the correct entailments follow from an assumption that the wh-word of a factive indirect question is derived from an indefinite noun phrase which is marked [+specific] with respect to the main predicate.

2a.ii The factive or "truth" aspect.

In Section 1 we noted that sentences containing predicates which are factive with respect to that presuppose the proposition expressed by the embedded clause, and, if the complementizer is ing or to, the factive presupposition is obtained by filling out the embedded clause with tense markers and a subject if there is none in the surface structure. So we suggested that an analogous presupposition exhibited by sentences containing wh-complements embedded under factive or semi-factive verbs could be accounted for if we took such sentences to presuppose, by virtue of the factivity of their main verbs, the proposition obtained by changing the wh-word of the complement into an indefinite pronominal phrase of the form (Prep)-Some+N. Thus our representations (85) and (86) of the deep structures of (82) and (83) are adequate to the extent that they allow us to derive the presupposition of (82) and (83) to the effect that

(93) Someone won the election

in a mechanical way from the representation of the embedded clause and the factivity of the main predicate. However there are other aspects of factivity which are not explained by this analysis: Just as

(94) *John knows that Bill won the election, but he's wrong
is contradictory, so are

(95) *John found out who won the election, but he turned out
to be wrong

(96) *John was amazed at who won the election, although that
person didn't really win.

(97) *John predicted who would win the election, but he was wrong.

Baker (1968 , p. 112) suggested on the basis of such examples as (95)-(97) that "object indirect questions represent 'the truth.'"²¹ Another way of describing the contradictoriness of (95)-(97) would be to state that "John found out who won," "John was amazed at who won," etc., entail something like

(98) John is right about (i.e. has the correct opinion as to)
who won the election.

The truth of the factive presupposition is not what prevents us from adding "but he's wrong" to factive indirect questions; the fact that someone won is not incompatible with an assertion that John is wrong about who won. The existential entailment of knowledge - e.g. entailment (90) of (82) - will yield us (98) only if it is assumed that there is only one answer to the indirect question. That is, if an election had only one winner, then the fact that

(82) John knows who won

entails the truth of the specific reading of

(88) John knows that someone won

means that if (82) is true, John is right about who won, and we cannot add "but he's wrong" to (82). However, if the possibility is left open that there was more than one winner, then the conjunction of John's knowing of a specific individual that he won with the fact that someone won, is not sufficient to assure us of the impossibility of John's being "wrong" about who won; although John is thereby necessarily "right" about one specific individual, in believing that that person won, he might still be "wrong" about other individuals, e.g. in believing that

they won when they didn't or believing that they didn't win when they did. Thus the existential entailments do not account for the "truth"-aspect of (82) either.

Another related problem which stems from the factivity of many of the predicates which take indirect questions and which can be explained neither by the factive presupposition nor the existential entailment of knowledge concerns a difference in semantic interpretation between factive sentences which contain specifically interpreted indefinite NP's in their complements and those which do not. It is often assumed (see, e.g. Fillmore (1971a)) that sentences with factive main verbs and declarative complements can be "broken up" into a corresponding non-factive assertion that the subject stands in a certain (epistemic or emotive) relation to the proposition expressed by the complement, plus a presupposition to the effect that the complement is true.²² Thus, for example,

(99) John knows that Mary won the election
would be analysed as asserting something like

(100) John believes (or is of the opinion) that Mary won the
election
and presupposing

(101) Mary won the election;
while

(102) John is surprised that Mary won the election
could be said to assert

(103) John had expected that Mary wouldn't win the election

and, of course, to presuppose (101). Since the "assertion" of a sentence is understood to be an entailment of it, a piece of evidence in favor of this view is the fact that if (100) is false, (99) is therefore necessarily false; similarly, the falsity of (103) entails the falsity of (102). Also, the conversational rules resulting from the logical relationships among sentences show that (100) and (103) are entailments (of (99) and (102) respectively), while (101) is a presupposition of both: If you utter (99) to me, and I am of the opinion that (100) is not true, I will contradict you by saying "You're wrong" or "That's false." On the other hand, if you utter (99) and I think that (101) is false, I cannot contradict you in this manner. In such a situation I would judge (99) to be without truth value, so I cannot claim it to be false. (Rather, my response must be of the sort which is typically given by one who believes that a logically improper sentence has been uttered - something on the order of "How could John either 'know' or 'not know' that Mary won, when in fact she didn't win?") But this analysis in terms of assertion-and-presupposition is not adequate for the specific reading of a sentence containing an indefinite pronoun (or any indefinite NP) in the complement of a factive predicate. For example, the specific reading of

(88) John knows that someone won the election,
which is understood as

(90) $(\exists x)$ (John knows that x won the election),
("There is someone such that John knows that that person
won the election"),

cannot be analyzed as asserting

(104) $(\exists x)$ (John believes that x won the election),
the specific reading of

(105) John believes that someone won the election,
and presupposing its complement,

(106) Someone won the election.

There is something missing from this analysis: Even though (106) assures us that the election had at least one winner, there is nothing to assure us of the truth of the following proposition:

(107) The individual who, by virtue of John's belief that
he won, instantiates (104), was in fact one of the
winners.

And this assurance must be included in an account of the meaning of (90). Certainly, (107) is an entailment of (90), but, although it is a part of the "truth"-aspect of sentences containing factive verbs, it is not a presupposition of (90). (To see this, observe that (107) cannot be an entailment of the negation of (90); if there is no individual such that John knows that that individual won, then anyone who John might believe to have won, did not win - hence (107) is without truth value when (90) is false, and (107) is therefore not entailed by the negation of (90). Note further that the conversational rules we alluded to above (specifying the "characteristic response to an utterance of a logically improper sentence") show (107) to be part of the assertion (i.e. a "mere" entailment) rather than a presupposition of (90): Suppose that you utter (88) to me, meaning to communicate its specific reading, (90), with your justification for the truth of this

reading being, say, an opinion on your part that John believes that Bill won in conjunction with a further opinion that John is right and Bill did indeed win. Now if I think that John is wrong, and Bill did not win, I can contradict you, saying "That's false," meaning that a belief on John's part that Bill won doesn't fulfill the crucial condition (107) on the truth of (90), since Bill did not win. This is of course a typical response by someone who thinks that a preceding remark has a false entailment (assertion). The response by someone who believes the remark to have a false presupposition - which would in this case be: "How could there be anyone of whom John either 'knows' or 'doesn't know' that he won?" - is inappropriate. This remark is in fact appropriate only when the presupposition (106), "Someone won," of (90) is judged to be untrue.) The significance of the fact that (107) is an entailment rather than a presupposition of (90) is that it indicates that the factivity of a predicate is not merely a matter of the presupposition triggered by that predicate, but also of an entailment triggered by it. Thus, (90) should be analyzed as asserting not

(104) $(\exists x)(\text{John believes that } x \text{ won the election}),$
but rather as asserting

(108) $(\exists x)(x \text{ won the election and John believes that } x \text{ won the election}),$
and presupposing (106).

Observe now that the more straightforward analysis is adequate for expressing the assertion and presupposition of the non-specific reading of

(88) John knows that someone won the election,
that is,

(91) John knows that ($\exists x$) (x won the election),
("John knows that there is someone such that that person
won the election", or "John knows that the election had a
winner").

This is because (91) can be said to assert

(109) John believes that ($\exists x$) (x won the election)
and to presuppose, as does (90), the complement proposition of (88),
(106) Someone won the election
(i.e. there was a winner, so John's belief counts as knowing). This
indicates that the extra conjunct in the assertion (108) of (90),
the specific reading of (88), although its presence accounts for the
"truth" aspect of (88), is a reflection not only of the fact that the
sentence has a factive main verb, but also of the fact that the
indefinite pronoun of (88) is on this reading interpreted as specific
with respect to the main verb. The verb must be factive if the "and
he did win" conjunct is to be needed, since of course there is no
such extra clause in the "assertion" of a non-factive proposition: The
"assertion," for example, of

(110) ($\exists x$) (John predicted that x would win the election)
(whose main verb is factive only with respect to wh), is itself, and
does not include "and x won;" (110) is neutral as to whether the x such
that John predicted that x would win actually did win. But since the
extra clause is lacking also in the assertion of (91), the non-specific

reading of (88), we must assume that its presence in the assertion of (90) is necessitated by the interaction of the factive main verb and the specific indefinite noun phrase in embedded position. Clearly, sentences containing indirect questions under factive predicates also need this extra truth condition as a part of their assertions, since they too exemplify this special combination of a specific indefinite NP embedded under a factive verb. (And since, as we noted in Section 1a, such sentences have corresponding existential entailments in the form of factive sentences containing specifically interpreted NP's.) We will defer the rest of our analysis of the "factive" or "truth" aspect of indirect questions until Chapter III; here we merely state a claim which we will justify there, that

(82) John knows who won the election
asserts, like

(90) ($\exists x$) (John knows that x won the election),
that

(108) ($\exists x$) (x won the election and John believes that x won the
election);

like (90), (82) presupposes that

(106) Someone won the election -
but, unlike (90), (82) additionally presupposes a disjunction of exhaustiveness constraints.

2a.iii. The exhaustiveness constraint.

Baker (1968) points out that

- (111) *Mary knows who won the election, but she doesn't know
that John won

and similar sentences are self-contradictory (p. 36). That is, in
order for

- (112) Mary knows who won the election

to be true, something more is needed than the truth of the corresponding
existential entailment

- (113) $(\exists x)$ (Mary knows that x won the election)

"There is someone such that Mary knows that that person
won the election"

and the truth of the factive presupposition ("Someone won"), since
these might be true and (112) false if, say, Mary correctly believed
that John won but she didn't know that Bill was also one of the winners.
Thus in order for (112) to be strictly true, it is also necessary that
Mary know, of every person who won, that he won. Similarly, for

- (114) Mary is amazed at who won the election

to be strictly true, it is necessary that everyone who won be such
that Mary is amazed that he won.²³ Exhaustiveness conditions such as
these also hold on factive sentences containing indirect questions in
"negative" contexts:

- (115) *Mary doesn't know who won the election - but she does
know that John and Bill won.

- (116) *Mary wasn't surprised at who won the election - although
she was surprised that John and Bill won.

But the exhaustiveness condition on the truth of a factive sentence containing an indirect question is apparently not triggered by the factivity of the main predicate, for non-factive (and also semi-factive) sentences have such conditions as well:

- (117) a. *Mary wonders who won, although she knows that
 John and Bill won.
 b. *It's no mystery to me who won, although I don't
 know whether or not John won.

We will state and try to justify paradigmatical exhaustiveness constraints for sentences containing indirect questions in Chapter III, where we will also argue that they must be expressed as presuppositions of these sentences. We have introduced this topic here because in Section 2a.iv directly below we will deal with a type of apparent counterexample to an exhaustiveness condition which must be distinguished from real counterexamples thereto.

2a.iv. The opacity/transparency aspect.²⁴

An apparent counterexample to the exhaustiveness constraint on

(112) Mary knows who won the election
is the acceptability of

- (118) Mary knows who won the election, but she doesn't know
 that the world's foremost authority on the boat-tailed
 grackle won.

That is, the "but . . ." clause of (118) asserts that there is someone of whom it is true that he won but false that Mary knows that he won; this violates the truth-condition on (112) that everyone who won is

such that Mary knows that he won, so that (118) should be contradictory. But it is not, and it is easy to imagine a situation to which it might be applicable. For example, Mary might have been able to name correctly that particular winner of the election who is referred to in (118) as "the world's foremost authority on the boat-tailed grackle," and she might also be able to list several other identifying characteristics of this person, but she might simply have been unaware that he happens to be the same individual as the world's foremost authority on the boat-tailed grackle. In such a situation this lack of knowledge on Mary's part would not be sufficient violation of any condition on (112) to obviate its being true. Thus the second conjunct of (118) does not contradict the first; the truth value of one is not necessarily relevant to the truth value of the other. The exhaustiveness condition on the truth of (112) would not rule out (118) unless it demands that in order for (112) to be true,

(119) Mary knows that $D(x)$ won the election
must be true for every definite description $D(x)$ of every person x who in fact won. But surely such a condition cannot be imposed upon the truth of (112) - it is not imposed in practice, and in principle, it is probably impossible ever to fulfill, since there seems to be no limit to the number of definite descriptions that apply to an individual.

Since there is no significant grammatical difference between

(111) Mary knows who won the election, but she doesn't know that

John won

and (118), we are faced with the problem of explaining why (111)

apparently violates the exhaustiveness constraint on (112) while (118) does not. The reason is that the but-clauses of both (111) and (118) are ambiguous along the opaque/transparent distinction; both are contradictory to (112) if interpreted transparently and possibly consistent if interpreted opaquely. The difference between (111) and (118) is that in the case of (111) the transparent interpretation is preferred, while the but-clause of (118) has a preferred opaque reading, and this is simply because noun phrases which name individuals are more likely than other sorts of definite descriptions to be taken transparently. Thus although (111) is normally interpreted as contradictory due to a violation of the exhaustiveness condition on (112), it also has a reading which implies that while Mary knows that the individual named "John" was one of the winners, she doesn't know that he is named "John." To clarify this contrast, we turn in Section 2b to a definition of the opaque/transparent distinction and a discussion of the ambiguities produced thereby, with an emphasis on sentences containing indefinite noun phrases in embedded positions.

2b. How Opacity and specificity interact to produce multiple ambiguity.

2b.i. Defining opacity, transparency, "referential ambiguity," and existential generalization, as applied to definite noun phrases; the logical independence of "accurate description" and existence."

If it is possible to change the meaning and thus perhaps the truth-value of a sentence by substituting, for a noun phrase contained in that sentence, an NP which is different in content but which refers to

or correctly describes the same individual or object, the sentence exclusive of the NP-slot is called an "opaque context," and any NP filling it is "interpreted opaquely" with respect to the rest of the sentence. In a transparent context, the substitution of a different but co-referential noun phrase does not make any difference in the proposition being expressed. We say that such a substitution "preserves truth value," so that the resulting sentence has (necessarily) the same truth-value as the original sentence. The most common type of purely (unambiguously) opaque context is created by the use of quotation marks (or their verbal counterpart, a rise in pitch for the quoted material). Substitution of a co-referential but descriptively different NP within quotation marks results in a difference in meaning, for each proposition is a predication of some property to the nominal expression within the quotation marks, rather than to the individual referred to by the quoted NP. A classic example (due to Quine (1960), p. 142) of an opaque context is the position containing "Tully" in

(120) "Tully was a Roman" is trochaic.

Note that a different proposition is created by substituting "Cicero" for "Tully":

(121) "Cicero was a Roman" is trochaic,

and that (120) is true while (121) is false. (Of course, substitution in an opaque context does not always alter truth value, but when it does not, that is accidental. By contrast, substitution of a co-referential expression in a transparent context necessarily preserves truth-value.) Most simplex subject-predicate sentences, containing no quotation marks, create purely transparent contexts; an example from Quine is

(122) Tully was a Roman.

The conjunction of (122) and the statement that "Tully" refers to the same individual as "Cicero" entails the truth of

(123) Cicero was a Roman;

that is, (122) and (123) express the same proposition and are both true or both false together. In philosophical jargon, the inference rule of "substitutivity of identicals" is valid in transparent contexts but not in opaque contexts.

Complementation creates contexts which are ambiguously interpretable as either opaque or transparent. An example (Quine (1960), p. 145) is the position of "Cicero" in

(124) Tom believes that Cicero denounced Catiline.

We will refer to a context of this sort as "referentially ambiguous",²⁵ and refer also in what follows to the "opaque reading" and the "transparent reading" of a sentence containing such a context. On its transparent reading (which, following Keenan (1970), we will refer to as (124)-t), (124) expresses the same proposition as the transparent reading of

(125) Tom believes that Tully denounced Catiline,

so that (125)-t can be derived from (i.e. it is entailed by) (124)-t and the statement that "Tully" and "Cicero" are co-referential. On this reading, (124)-t and (125)-t both state that Tom believes that a certain individual denounced Catiline. The truth value of each remains constant whatever term one happens to use to designate that individual. As long as two terms are co-referential, they are mutually substitutable

in the transparent context of (124)-t and (125)-t (with the truth value of the reading preserved), even if the referent of the subject (Tom) of the sentence does not believe that the two terms refer to the same person or thing. On the opaque reading of (124), however, such a substitution does not always preserve truth value: Just because Tom believes of Cicero that he denounced Catiline, it does not follow that Tom believes this of Tully, for he might not realize - or he might (mistakenly) disbelieve-that Cicero and Tully were the same person. If, for example, Tom was under the confused impression that "Tully" was co-referential with "Seneca" rather than with "Cicero," Tom could believe that Cicero denounced Catiline and at the same time disbelieve the statement that Tully denounced Catiline without being inconsistent; in other words, it is possible for (124)-o to be true and (125)-o to be false. Thus (124)-o expresses a two-place relation between Tom and the proposition "Cicero denounced Catiline." (124)-t expresses a three-place relation between Tom, Cicero (i.e. the referent of "Cicero"), and the predicate "denounce Catiline."

The distinction between the two readings of a referentially ambiguous sentence can also be expressed as a matter of who is considered to be "responsible" for the description or designation which appears in the ambiguous context. On an opaque reading, the referent of the subject of the sentence is considered to be responsible for the description, in the sense that the speaker (assuming he is distinct from the subject) merely "borrows" something the subject has said or implied and uses it to denote an individual without necessarily agreeing that the description

accurately applies to that individual. Thus the opaque reading of

(124) Tom believes that Cicero denounced Catiline
could be interpreted as: "Tom believes that a certain individual, who
in Tom's opinion may be accurately referred to as 'Cicero,' denounced
Catiline." This interpretation helps illuminate why (124)-o (in
conjunction with the proposition that "Cicero" and "Tully" refer
to the same person) does not entail the opaque reading of

(125) Tom believes that Tully denounced Catiline;
the fact that "Cicero" and "Tully" are co-referential does not insure
that Tom will consider "Tully," as well as "Cicero," to be an accurate
designation of the individual he believes to have denounced Catiline.
On a transparent reading, however, the implication is that the NP in
the ambiguous context is an accurate designation of the individual to
whom it refers, while the question is left open as to whether the
referent of the subject of the sentence would consider it accurate.
Thus (125)-t might be true and (125)-o false if it is true, say, that
Tom believes of a certain individual (who may, in fact, be accurately
designated by "Cicero" or by "Tully" or by other expressions) that he
denounced Catiline, but at the same time Tom believes that the proposi-
tion "Tully denounced Catiline" is false, because he doesn't realize
that "Tully" is among the accurate descriptions of the individual whom
he believes to have denounced Catiline. Since a person ought to believe
the implications of what he says, someone who utters a referentially
ambiguous sentence meaning to communicate its transparent reading ought
to consider the crucial NP (i.e., the NP in the ambiguous context) to
be an accurate description or designation of the individual to whom it

is meant to refer, and for this reason the transparent reading of such a sentence is often characterized in terms of the speaker's being considered "responsible for the description" (Fodor, p. 238, pp. 247-249, Heringer, p. 91). I will also occasionally use this terminology, but it should be kept in mind that (as Fodor makes clear) the contrast is not really between "speaker's description" and "subject's description" but rather between a description which is in fact accurate (transparent) and a description which the referent of the subject considers to be accurate (opaque).²⁶ In a transparent case, the subject may or may not agree that the description is accurate; similarly, in the opaque case, nothing is said about whether or not the description is in fact accurate.

It is sometimes claimed that a transparent context can be distinguished from an opaque context on the grounds that the inference rule of "existential generalization" is valid only for the former. Existential generalization is valid for a proposition P (i.e. an unambiguous sentence or a reading of an ambiguous one) containing a definite term if P entails the proposition P' which is derived from P by replacing each occurrence of this term in P with an externally quantified variable.²⁷ Existential generalization is valid for unambiguously transparent sentences and invalid for unambiguously opaque sentences. For example,

(123) Cicero was a Roman
entails

(126) $(\exists x)(x \text{ was a Roman})$;
but

(120) "Tully was a Roman" is trochaic
does not, of course, entail

(127) $(\exists x)$ ("x was a Roman" is trochaic),
since (120) is not "about" Tully but rather about the word "Tully."

To a certain extent, the validity of existential generalization distinguishes the transparent reading of an ambiguous sentence from its opaque reading. The transparent reading of

(124) Tom believes that Cicero denounced Catiline
entails

(128) $(\exists x)$ (Tom believes that x denounced Catiline),
but (124)-o, according to Quine, does not: He asks us to suppose (1961, p. 141) that

(129) (=his (9)) Philip is unaware that Tully denounced Catiline
is true on its opaque reading, while the opaque reading of

(130) (=his (11)) Philip is unaware that Cicero denounced Catiline
is false, in spite of the co-referentiality of "Tully" and "Cicero."
He then claims (p. 147) that

Existential generalization is unwarranted . . . in the
case of (9) [on its opaque reading] . . . Applied to
[the opaque reading of] (9), it leads to

$(\exists x)$ (Philip is unaware that x denounced Catiline),
that is:

Something is such that Philip is unaware that it
denounced Catiline.

What is this object, that denounced Catiline without
Philip's having become aware of the fact? Tully, that
is, Cicero? But to suppose this would conflict with the
fact that (11) is false [on its opaque reading].

Evidently what Quine means by existential generalization is that in
order for it to be valid from P to P', there must be an "x" such that

the formula under the scope of the existential quantifier in P' is, by entailment, true of x under any accurate description of x . That is, for Quine it is a matter of definition that existential generalization is valid only out of transparent contexts; it is never valid out of opaque contexts (or on the opaque reading of an ambiguous sentence) since given only the opaque reading of $P(x)$ it is always possible that there will be an NP which accurately describes or designates x but for which $P(NP)$ is false on its opaque reading (as in Quine's example). Since transparency is a necessary condition on the validity of existential generalization, I propose to make this aspect explicit by considering the existential generalization out of (124) to be

(131) $(\exists x)(x \text{ is Cicero and Tom believes that } x \text{ denounced Catiline})$;
in such inferences, " x is NP" means that "NP" is an accurate description or designation of the entity x .

By our definition, existential generalization fails for a sentence containing a definite NP in an embedded context if the sentence is not interpreted transparently (in which case it is not entailed that NP refers correctly). But it can also fail on the grounds that the NP refers to nothing at all, so that there is no individual of whom (or of which) the formula under the existential quantifier is true.²⁸ As Quine (1961) put it, existential generalization "holds only in the case where a term names, and furthermore, occurs referentially" (p. 146). A term (an NP) "occurs referentially" when there is an individual to whom (or to which) the NP refers and whom the sentence, in a sense, is "about;" this is the case only with transparent readings. (On purely

opaque readings, the sentence is "about" the term itself, not its possible referent.²⁹ For example, the existential generalization from

(132) Tom believes that the best swimmer will make the team,
which would be

(133) $(\exists x)(x \text{ is the best swimmer and Tom believes that } x$
will make the team),

can fail for the former reason (misdescription) if it read opaquely:

Let us assume that Tom has asserted that Harry, whom he believes to be the best swimmer, will make the team, with the sincerity of his assertion being the evidence for the truth of (132). Then it is still possible that (133) might be false, if in fact it is not Harry but Bill who is the best swimmer, since in this case neither Bill nor Harry (nor anyone else) satisfies both conditions on the truth of (133) - neither is both accurately describable as "the best swimmer" and the individual who Tom believes will make the team. Secondly, (133) may fail to be true, given (132), because there is no unique "best" swimmer - suppose that all those being considered for the team swim equally well according to whatever standard is being used. In that case the quantified formula of (133) is not true of any x because there is no x who can properly be described as "the best swimmer."

Thus although, as we mentioned in Chapter I, a definite noun phrase is presupposed to have a referent when it occurs in a simplex sentence, it is not always entailed, much less presupposed to refer when it occurs in an embedded position.³⁰ Because of this, existential generalization may fail on account of the lack of an existence entailment (lack of a referent for the crucial NP), as well as because of misdescription. It

turns out that the question of whether or not an NP constitutes an accurate description of the individual to whom it is meant to refer - i.e. whether or not the sentence in which the NP occurs is read transparently - is independent of the question of whether the NP necessarily has a referent. First, note that the failure of the transparency condition does not imply either the success or failure of the "existence" condition: Clearly a reading can be considered opaque - i.e. to contain a possibly inaccurate description in the crucial context - whether or not the NP in that context is entailed to refer: If the speaker does not take responsibility for the accuracy of the description, he need not take responsibility for the existence of a referent for that description either, since a referent might not exist except in the imagination of the subject of the sentence, from whom the speaker "borrowed" the descriptive phrase. On the other hand, it is also possible for a speaker to "borrow" such a description from the subject, and to use it in an opaquely-intended assertion about the subject's beliefs or feelings, without there being any doubt in anyone's mind that the (possibly inaccurate) description does have a referent. In the next paragraph we will give an example of a transparent reading which does not entail that the crucial NP has a referent - i.e. we will exemplify a reading for which the speaker must accept responsibility for the description expressed by the NP but without committing himself to the existence of a referent for that NP. The fourth possibility, a reading on which the speaker does commit himself both to the existence of a referent for the NP and to the accuracy of the description or designation expressed thereby, is probably, under ordinary circumstances, the preferred interpretation of a referentially ambiguous sentence like (124).

Fodor (1970) points out that it is usually assumed in discussions of opacity that "the two inference rules, existential generalization and the substitutivity of identicals, stand or fall together; that these two criteria pick out exactly the same set of sentences" (p. 8). She suggests (p. 112) that it is arbitrary whether or not we define existential generalization so as to include the notion of substitutivity (as we have done, following Quine), as well as whether or not we define transparency so as to include an existence entailment, as long as we keep the two issues, description and the existence of a referent, separate. Fodor keeps them separate by speaking in terms of NP's being "transparent (or opaque) with respect to the criterion of substitutivity of identicals" and "transparent (or opaque) with respect to the criterion of existential generalization." I restate my framework here as one in which "transparent" refers to contexts or readings in which substitutivity of identicals holds, and in which the crucial NP is assumed to be an accurate ("responsibility of the speaker") description or designation of the entity to which it purports to refer (regardless of whether or not a referent actually exists). On an opaque reading, as I have defined it, substitutivity of identicals does not always preserve truth and the crucial NP is not necessarily understood to be an accurate description of the individual to whom it purports to refer (although the referent of the subject of the sentence is assumed on an opaque reading, to consider the description accurate). Existential generalization is valid only if both of the following conditions hold: the reading (or unambiguous sentence) must be transparent (i.e. substitutivity must hold), and the crucial NP must be entailed to have a referent.

To complete our argument in favor of the claim that the question of the existence of a referent for the crucial NP is independent of the question of whether the NP is an accurate description - that the two ways in which existential generalization can fail are unrelated to each

other - we must show that there can be a reading of a sentence on which a given NP is interpreted transparently but on which this NP is not entailed to exist. (This ground has already been covered by Fodor (1970, pp. 170-177); see also my discussion (based on hers) of non-specific NP's in ambiguous contexts in Section 2b.ii of this chapter.) Consider the transparent reading of

(134) Don Quijote thinks that Dulcinea is beautiful,
adopting the point of view of the narrator of Don Quijote (who thinks that Don Quijote himself is real, but that Dulcinea exists only in Don Quijote's addled imagination). Even though the term "Dulcinea" does not refer to anything, the image of her exists in Don Quijote's mind and possesses attributes. Other terms besides the name also accurately describe this hallucination; these are distinguishable from terms which do not accurately describe it, so it is possible to speak of the substitutivity of identicals, the "identicals" being the terms which accurately apply to this imaginary individual. Thus there is certainly a reading of (134) which is transparent in the sense that Don Quijote thinks Dulcinea to be beautiful under any accurate designation of her; the transparent reading of

(135) Don Quijote thinks that the unequalled and incomparable
lady from Toboso is beautiful
follows from (134)-t and the fact that the adjectival phrase constitutes an accurate description of Dulcinea, as Don Quijote conceived her.

Heringer (1969) claims that when a referent for an NP

exists only in the belief world of the subject [of the referentially ambiguous sentence], . . . the responsibility for referring to the referent by the noun phrase in question must lie with him alone [and not with the speaker of the sentence, because] . . . an individual cannot be held responsible for a description of a referent not in his belief world. (p. 94)

I disagree - the narrator of Don Quijote could report (135) as true on the basis of Don Quijote's having declared that he thinks Dulcinea is beautiful; in doing so the speaker takes responsibility for the description contained in the crucial NP, without having thereby committed himself to a belief in the existence of a referent for the NP. Thus (134) and (135) can be interpreted as transparent, even though "Dulcinea" has no referent and existential generalization is impossible (since there is in fact no one of whom we can properly assert or deny that Don Quijote thinks that she is beautiful). Therefore, the transparency condition can hold of a sentence and the "existence" condition not hold, concluding our argument that these two criteria for existential generalization are independent of each other.

2b.ii Readings of sentences containing indefinite lexical noun phrases embedded under non-factive predicates.

The distinction between the transparent and opaque readings of a sentence containing an indefinite noun phrase in a referentially ambiguous context is made the same as for definite NP's.

(136) Tom believes that a senator denounced Catiline has, whether "a senator" is interpreted as specific or non-specific with respect to believe, a transparent reading (actually several) on which

any description is substitutable which applies correctly to the particular senator Tom had in mind (if "a senator" is specific) - or which applies correctly to the type of individual Tom had in mind (if "a senator" is non-specific). On the transparent readings of (136), it is entailed that "a senator" is an accurate description of the individual or type which Tom had in mind when he asserted (or otherwise indicated) that he had the belief in question. On (136)-o, however, it is only necessary that Tom believe "a senator" to be an accurate description; the speaker may merely have borrowed this NP from Tom's own assertion without considering himself to be responsible for the accuracy of "a senator" as a description of the individual or type to whom it purports to refer.

Strictly speaking, the rule of existential generalization does not apply to sentences in which the crucial NP is indefinite, since sentences containing such NP's are already existentially quantified. However, we can still ask whether such a sentence can be represented (on its various readings) by an existentially quantified formula with the quantifier to the extreme left (see Fodor (1970), p. 43). Clearly only the specific readings of such sentences can be so represented. Existential generalization from (136) would produce

(137) $(\exists x)(x \text{ is a senator and Tom believes that } x \text{ denounced Catiline,}$

and (137) certainly does not follow from the non-specific reading of (136) because it is possible for Tom to believe (as he does, according to this reading) that Catiline was denounced by a senator without (Tom's)

having any idea as to which senator it was; in this situation the non-specific reading of (136) would be true and (137) false. That is, there are three things which must hold of a reading of (136) in order for existential generalization to be valid from it (i.e. in order that it entail (137)): One, the reading must be specific - the noun phrase "a senator" must be interpreted as referring to a particular senator, or else the existential quantifier would not be on the extreme left. The specific readings of (136) entail, assuming the "existence" condition is satisfied, " $(\exists x)$ (Tom believes that x denounced Catiline)," but the non-specific reading of (136) only entails "Tom believes that $(\exists x)(x$ denounced Catiline)." Two, as in the case of (124) in which the crucial NP was definite, the reading must be transparent, or else it will not necessarily follow that "a senator" is an accurate description of the individual who Tom has in mind. Three, also as in the case of (124), the expression "a senator" must have a referent, or there is no one of whom the quantified formula of (137) is true. Granted, the possibility of a situation, in which Tom's belief that a particular senator denounced Catiline is based on a belief about an individual who exists only in his own imagination, is pretty remote, but this is merely because the notion of "a senator" does not often lead us into hallucinations and flights of fancy. But it is possible for the indefinite NP of

(138) Don Quijote believes that a (certain) lady from Toboso

is waiting for him

to be interpreted both specifically and transparently (as the definite NP "Dulcinea" of (134) above was interpreted transparently), without

there actually being anyone to whom this descriptive phrase refers, except in Don Quijote's mind. That is, it is possible for an indefinite NP to be interpreted specifically but not as having a referent. Thus of the three conditions on the validity of existential generalization out of a sentence like (136) containing an embedded indefinite noun phrase, the fulfillment of the "existence" condition depends on the fulfillment of the specificity condition, although not conversely (see below).

Since there are three conditions on the validity of existential generalization out of a reading of (136), it follows that there are three ways in which this inference can fail to be valid for a reading of a sentence containing a lexical (non-pronominal) indefinite NP embedded under a non-factive predicate:

Existential generalization may fail because the sentence is being read non-specifically and thus is not being taken to ascribe any property to any individual (really existent or otherwise). On the other hand, and quite independently of this, existential generalization may fail in the sense that it is not valid to infer the real existence of an object of the kind described. Also, . . . existential generalization may be said to fail because of considerations connected with the description under which something is referred to. (Fodor (1970), pp. 111-112)

We claimed in Section 2b.i that the satisfaction of the transparency condition on existential generalization for sentences containing definite NP's in referentially ambiguous contexts is independent of the satisfaction of the "existence" condition; we will shortly argue that the same is true of indefinite noun phrases. We will also claim that the transparency condition and the specificity condition

are mutually independent, in the sense that if one of these is fulfilled, the other may or may not be. On the other hand, the satisfaction of the "existence" condition by a reading of a sentence like (136), with an embedded indefinite NP, is, as we pointed out, dependent upon the satisfaction of the specificity condition. This is because if (136) is read non-specifically, it does not predicate anything of any particular individual, real or imaginary; the expression "a senator" is being used attributively rather than referentially. Thus the question does not arise as to whether or not any particular individual "exists." (There is, of course, a question of whether anyone (as opposed to any particular person) exists to whom the NP "a senator" is applicable - i.e. the question of whether or not there are any senators. This, and not the "existence" criterion we have been discussing, is the question which Fodor referred to in the above quotation as "quite independent" of the specificity question. However, the answer to this question does not have any effect on how the non-specific reading of such a sentence is interpreted; the interpretation of the non-specific readings of (136) would be along exactly the same lines if we replaced "a senator" with "a poltergeist.")

If all three conditions on the validity of existential generalization out of (136) were mutually independent, there would be $2^3 = 8$ possible combinations of fulfilled and unfulfilled conditions on the truth of (137), given (136); since the existence condition depends upon the specificity condition, there are only six. Therefore, we will claim at this point that (136) is six ways ambiguous with its six readings satisfying six different combinations of conditions on (137),

as indicated in Chart (139) below (justification for this claim begins in the next paragraph). The horizontal axis of Chart (139) is to be interpreted as follows: If the "specific" box is checked, "a senator" is interpreted specifically on the reading in question; if the "exists" box is checked, "a senator" is entailed by that reading to "exist" or to have a referent; if the "transparent" box is checked, "a senator" is interpreted transparently on that reading and is therefore entailed to be an accurate description of the (real or imaginary) individual (or type) which it purports to refer to or describe:

(139) The criteria for picking out the six readings of

(136) Tom believes that a senator denounced Catiline.

Readings	specific	"exists"	transparent
1	✓	✓	✓
2	✓	✓	
3	✓		✓
4	✓		
5			✓
6			
(*7)			(✓)
(*8)			

The six readings can be distinguished from each other by expanding (136) as follows (appended to the representation of each reading is a possible continuation of (136) which would bring out the intended interpretation):

- (136) - 1. There is someone who is accurately described as "a senator" such that Tom believes that he denounced Catiline (. . . but Tom doesn't realize he was a senator).
- (136) - 2. There is someone who Tom considers to be accurately described as "a senator", and he is such that Tom believes that he denounced Catiline (. . . but I don't think he was a senator).
- (136) - 3. Tom thinks that there is someone who is such that Tom believes that he denounced Catiline, and if he existed, he would be accurately describable as "as senator" (. . . but I don't think he exists).
- (136) - 4. Tom thinks that there is someone who is such that Tom believes that he denounced Catiline, and Tom thinks that he is accurately describable as "a senator" (. . . but I don't think that any such person exists, and if he did, I wouldn't describe him as "a senator").
- (136) - 5. Tom believes that someone is such that he denounced Catiline, and the sort of individual who Tom believes to have denounced Catiline is (in fact) accurately describable as "a senator" (although Tom doesn't

think that that sort of individual is accurately describable as "a senator").

- (136) - 6. Tom believes that someone is such that he both denounced Catiline and is accurately describable as "a senator" (. . . but the sort of individual who Tom believes to have denounced Catiline is not in fact accurately describable as "a senator").

Of the six readings of (136), only one - the first - allows, by existential generalization, the inference of (137), since only this reading satisfies all three conditions on the validity of this rule as we have defined it.

In our justification of the claim that (136) has six readings, we will begin with the non-specific readings, and then continue with the specific readings, which are more central to our theme. If the indefinite NP a senator of

(136) Tom believes that a senator denounced Catiline is read as non-specific, it is understood that Tom believes that Catiline has the property of having been denounced by someone who may or may not be accurately describable as "a senator" - but there is not necessarily, given a non-specific reading of (136), any particular individual of whom it is true that Tom believes that he denounced Catiline (although there may be such an individual). Two writers who have discussed the problem of non-specifically interpreted noun phrases in referentially ambiguous contexts, Heringer (1969) and Fodor (1970), disagree as to whether we can distinguish two non-specific readings for a sentence like (136). Heringer says we cannot: He claims that if the indefinite NP of

(140) John wants to marry a witch

is interpreted as non-specific, the sentence has no reading on which substitutivity of identicals necessarily preserves truth, so that (140) has only one non-specific reading, an opaque one. As evidence, he claims that an inference such as

(141) John wants to marry a witch (non-specific)

All witches are hunchbacked

Therefore, John wants to marry a hunchback

is not a valid inference since "a witch" is interpreted "attributively;" because of the failure of the substitution criterion, (140) must be interpreted opaquely if it is interpreted non-specifically. However, this argument is open to criticism on two grounds: First, the substitutivity test is not, strictly speaking, available for distinguishing between opaque and transparent readings when the crucial NP is non-specific. Substitutivity of identicals as a test for transparency depends on our being able to substitute, for an NP which refers to or accurately describes an individual, a different but co-referential NP. That is, the second premise of a substitution inference says that the same individual that can be accurately described by one NP is also accurately describable as another. But on the non-specific reading of (140), there is no individual about whom it can be in question whether she is accurately describable as "a witch" (or, for that matter, as a "hunchback"), so the substitutivity test does not apply to this case and the inference rule cannot be proved to be invalid on the basis of the invalidity of (141). Second, although substitutivity of identicals

is not relevant to non-specific cases, a similar test does apply, in which the identity premise of the inference is replaced by a conditional - which for (140) would be

(142) Anything which is accurately describable as "a witch" is also accurately describable as "a hunchback," and conversely.

By this analogous test, (140) does have a non-specific transparent reading, on which it, in conjunction with (142), entails

(143) John wants to marry a hunchback on its non-specific transparent reading. That is, (140) on this reading means that John wants to marry someone (presumably anyone) who (in fact) has a certain property, that of being a witch. But if all witches are hunchbacks, and all hunchbacks are witches, the sort of individual John has in mind as a future wife must also have the property of being a hunchback, so it must be true (transparently and non-specifically) that John wants to marry a hunchback. But if (140) is interpreted opaquely (as well as non-specifically), it is not necessarily true that "a witch" is a proper description of the type of person John wants to marry. That is, on this reading John wants to marry a woman (presumably any woman) who has certain characteristics, the sum of which would, in his opinion, constitute grounds for describing such a person as "a witch." But it may in fact be false that this sort of person is accurately describable as "a witch" (although this would be merely a terminological mistake on John's part as to the meaning of "witch" and not, as in the specific cases, a matter of whether or not a particular person has such properties as would justify her being des-

cribed as "a witch"). In this case (the non-specific opaque reading of (140)), the truth of (142) does not lead us to the conclusion that

(143) John wants to marry a hunchback

(on any reading): Since the sort of person John wants to marry cannot in fact be described as "a witch" (or at least it is not necessary that this type of person be so describable on an opaque reading), the truth of (143) does not guarantee that this sort of person is accurately describable as "a hunchback." Thus (140)-t entails, via (142), (143)-t; but (140)-o does not entail (143)-o or (143)-t either.

Heringer frames most of his discussion of indefinite NP's in referentially ambiguous contexts in the terminology of "responsibility for the description," with the speaker being responsible on transparent readings, and the referent of the subject of the sentence being responsible on opaque readings. Since he claims that "Attributive [i.e., non-specific] noun phrases in referentially opaque [i.e., referentially ambiguous] contexts can only be construed opaquely," he therefore holds that the description contained in the non-specific NP "must be considered the responsibility of the subject of the sentence" (p. 92). However, we showed that even if the description of a type of individual (i.e. the descriptive NP is interpreted non-specifically) rather than of a specific individual, there may still be a disparity between those descriptions which are "in fact" accurate and those which the referent of the subject of the sentence would consider accurate. Assuming that the speaker of such a sentence as (140) is in possession of "the facts," he may well take "responsibility for the description" if his notion of

an accurate description differs from the subject's. For example, if I utter (140) - meaning "a witch" to be interpreted non-specifically - my assertion may be based on John's having expressed a desire to marry a certain sort of a woman - a sort of woman who I would describe as "a witch." Assuming John's expression of desire was sincere, my assertion is transparently true, even if John would not agree that this sort of person is describable as a witch. In this case, it is I, not John, who is responsible for the description. I think Heringer merely confuses the issue of non-specific NP's by pointing out that

an attributive noun phrase in an opaque context cannot be supplied by the speaker of the sentence if the description it gives is not at least pre-supposed in the subjects' belief world by the description the subject originally gave, or, more precisely, if the speaker does not assume that such a connection exists in the belief world of the subject. (p. 92)

What he means here (I think) is that if, for example, John expresses the desire to marry a witch, a "speaker" has the right to substitute "hunchback" for "witch" and assert

(143) John wants to marry a hunchback -

non-specifically and opaquely - only if it is clear that John considers all witches to be hunchbacks.³¹ That is, Heringer is pointing out that certain special kinds of substitutions of descriptions do preserve truth from one opaque reading to another which contains a different NP in the crucial context. This has nothing to do with non-specific noun phrases, however - the following inference is also valid if the first premise and the conclusion are interpreted opaquely:

(144) John wants to meet the author of Shakespeare's sonnets.

John thinks that Bacon is the author of Shakespeare's sonnets.

John wants to meet Bacon.³²

Fodor (1970), who claims (with me and contrary to Heringer) that non-specific NP's in referentially ambiguous contexts can be interpreted transparently, gives an example (p. 226) in which a disagreement between the speaker and the subject as to the accuracy of a description is not merely a terminological disagreement about the meaning of the term employed. She points out that the non-specific reading of

(145) Charley wants to buy a coat like Bill's
is compatible both with a situation in which Charley has seen Bill's coat and admired it, expressing his intention of buying a similar one (opaque reading), and with a situation in which Charley has described to someone the sort of coat he wants to buy, not realizing that this is the same kind of coat that Bill has. The other person might then assert the non-specific transparent reading of (145), in which he and not Charley has the responsibility for the description "a coat like Bill's." This non-specific transparent reading of (145) could be true without Charley ever having heard of Bill or his coat.

The distinction between the transparent and the opaque sub-readings of the non-specific reading of our original example,

(136) Tom believes that a senator denounced Catiline,
is rather awkward to justify because of the nature of the crucial term "senator" (since it would be rather far-fetched for Tom and the

speaker of (136) to disagree as to what sort of person the description "a senator" applies to. However, we can construct situations analogous to those for (140) to show that epistemic predicates as well as emotive ones create contexts in which a non-specific noun phrase can be interpreted either transparently or opaquely.³³ For example, consider

(146) Tom believes that John married a witch,
on its non-specific reading. On this reading, Tom believes that John married someone who has certain characteristics, although he may not know who in particular John married (that is, on the non-specific reading of (146) there need not be anyone of whom Tom believes that John married her). As in the cases of (140), etc., if Tom and the speaker disagree as to whether someone with those characteristics counts as "a witch" - i.e. if Tom is confused as to the meaning of the word "witch," so that "a witch" is not in fact an accurate description of the sort of individual Tom had in mind when he indicated that (146) was true - it is possible to interpret the non-specific reading of (146) as either true or false, depending on whether the non-specific NP is read transparently or opaquely. That is, two non-specific readings can be distinguished for (146), and - on the assumption that it is conceivable for a terminological disagreement to arise over what type of person with what sorts of characteristics is describable as "a senator" - for (136) as well.

* * *

We turn now to those readings of sentences like (136) on which the indefinite noun phrase in the referentially ambiguous context is

understood to be specific. Again, we will concentrate our discussion on an emotive case with the main verb want, since our conclusions are based on those of other writers who used want in their paradigms. (We will omit the argument that our comments apply to (136) as well as to (140), for the sake of brevity.)

Fodor (1970) and Heringer (1969) disagree also about the number of specific sub-readings of a sentence containing an indefinite lexical NP. Fodor (p. 228) says that there are only two specific readings one transparent and one opaque. Heringer suggests (p. 93) that

(140) John wants to marry a witch

has three specific readings corresponding to the first, second and fourth readings we claimed for (136). These (numbered correspondingly) are:

(140) - 1. A transparent reading on which existential generalization is valid and "a witch" is presupposed to have a referent.

(140) - 2. An opaque reading on which "a witch" is presupposed to have a referent but whose lack of transparency invalidates existential generalization.

(140) - 4. An opaque reading on which there is no presupposition (or entailment) that "a witch" has a referent.

Heringer implies that the classical position would be that (140) has only two specific readings,³⁴ (140)-1 and (140)-4. That is, in this view (140) has a specific transparent reading out of which existential generalization is valid and a specific opaque reading out of which

existential generalization is invalid: "The description question [transparency/opacity] and the existence question [whether or not the crucial noun phrase necessarily has a referent] are assumed to be equivalent in most discussions of referential opacity [ambiguity]" (Heringer, p. 93).³⁵ Disagreeing with this position, Heringer claims that a third reading must be accounted for (the one we represented above as (140)-2). He writes (p. 93):

[The] ambiguity of sentences containing referential [specific] indefinites in opaque [referentially ambiguous] contexts does not result solely from the question of who is responsible for the description expressed by the indefinite, but also from the question of who is presupposing that the referent exists. This existence is not meant to be taken as existence in the real world, but rather as belief-world existence. Thus the second question really amounts to the question of whose belief world the referent is presupposed to exist in.

To understand what he means by this, recall first that (as we argued in Chapter I, Section 2) the expression "the speaker presupposes" is misleading and should be replaced (consistently with Heringer's reformulation in the last sentence of this quotation) by "the sentence (on a given reading) presupposes." The "question of who is presupposing that the referent exists" should thus be interpreted as the two questions of whether or not the sentence presupposes that the crucial NP has a referent and of whether or not the sentence presupposes that the referent of the subject believes the NP to have a referent. In Heringer's terminology, when someone (the speaker or the referent of the subject) "presupposes" that a certain NP "exists," this means that a referent for this NP "exists" in the "belief world" of that person. In our terminology, when the sentence presupposes (or entails) that the crucial NP "exists," it means that this NP has a referent in the "real" (including the fic-

tional and legendary) world; when the sentence presupposes or entails only that the subject believes the NP to "exist," it allows the possibility that such a referent exists only in the imagination ("belief world") of the subject.³⁶ However, although Heringer claims that there are two "existence questions" (with respect to the speaker and the subject) - which, he points out, together with the "description question" would give $2^3=8$ "logically possible [specific] readings," (p. 94),³⁷ - one of these existence questions must be answered positively if any interpretation of a sentence like (140) is to be true: At least the subject must believe that the crucial NP exists. For example, for (140) to be true on any specific reading at least John must believe the specific NP "a witch" to have a referent. That is, it is impossible to speak of John as wanting to marry an individual whom he himself considers to be imaginary; in this case, we could only assert something like "John would want to marry a certain witch if he believes she existed." (Although it is conceivable that he might want to marry someone who does not in fact exist, if he, at least, mistakenly believes that she does exist.) Therefore, according to Heringer, only one of the two "existence questions" is significant in distinguishing among the specific readings of (140); "Either the referent exists only in the belief world of the subject, . . . or the referent exists in the belief worlds of both speaker and subject" (p. 94). There should, then, be four specific readings for (140), depending on whether or not "a witch" is interpreted transparently; this is what we have claimed. However, Heringer rules out one of these four readings, the one corresponding to (136)-3 in Chart (139) - in which "a witch" is interpreted

transparently but it does not necessarily have a referent except in John's imagination. Heringer's claim (p. 94, quoted by me at the end of Section 2b.i) that a person (the speaker or the referent of the subject of a sentence) must believe that a crucial NP has a referent if he is to be considered responsible for the description contained in that NP, constrains him to exclude the combination of criteria exemplified by (136)-3 and the corresponding (140)-3. However, I think that the arguments we advanced in favor of a non-specific transparent reading for (140) (and also those in favor of a transparent reading for a sentence like (124) ("Tom believes that Cicero denounced Catiline"), on which the definite NP in the crucial context ("Cicero") is not entailed to have a referent) apply, in a slightly different form, in favor of a specific transparent reading of (140) on which there is not presupposed or entailed to be a referent for "a witch." As in the non-specific case, one situation in which such a reading could be true can be characterized as a terminological disagreement. For example, take a situation in which John has in mind a particular individual whom he wants to marry - an individual with certain characteristics. Suppose he describes her to me (but without describing her as a witch), and, as he does, I become aware that (1) he is describing an imaginary individual who exists only in his own mind, but (2) the characteristics of this imaginary individual are such that if she existed, she would be accurately describable as "a witch." In such a situation, I could truly assert (140) on its specific-transparent- "witch exists" - reading (i.e. reading (140)-3): If John does not realize that the (imaginary) woman he told me about is accurately describable as "a witch" (or at least she would be so describable, if she existed), he might even deny that the girl he

wants to marry is a witch, so in this case I would be taking the responsibility for the description, even though there is no referent for this description in my belief world. (This is essentially the same situation as the one used by Fodor (quoted directly below) as evidence for her claim that the speaker must take responsibility for a description in an ambiguous context, whether or not he believes the description to have a referent. Here I am using it rather to show that the speaker may substitute what he considers to be a correct description of an imaginary individual.)

Since Heringer seemed to be suggesting that the failure of other writers to recognize a (140)-3 reading for (140) (in which "a witch" is (1) specific, (2) a correct (or "speaker's") description (interpreted transparently), but (3) not necessarily possessed of a real-world (speaker's belief world) referent) might be attributable to their identifying the "description question" with the "existence question," it is interesting to note that Fodor, who explicitly rejects a necessary connection between the two, does not distinguish such a reading. Furthermore, she does not view the conditions on the truth of an opaque reading as being necessarily satisfied whenever the description inherent in the crucial NP is considered by the referent of the subject to be accurate. She writes (pp. 248-249):

Linguists have assumed . . . that . . . on the opaque reading the speaker is merely taking over a description from the subject of the opaque verb, saying what would count, in his opinion, as a description of the object in question from the point of view of that subject. This assumption, I shall argue, is incorrect. The assumption that the source of the description, or the responsibility for it, is always either the speaker

(on the transparent reading) or the subject of the opaque verb (on the opaque reading) is embodied in the proposed representations that we have been considering. . . . I shall maintain that these two alternatives are not mutually exclusive and that in fact the speaker is always responsible for the descriptions that he employs, even if he is also attributing them to the person whose beliefs, hopes, etc., he is reporting. . . . The contrast between the two readings is not a matter of whether the speaker or the subject of the verb is responsible for the description; the speaker is always responsible, and the ambiguity is a matter of whether or not he is also ascribing responsibility to the subject of the opaque verb.

In our analysis, based on Heringer's paper, we claimed that in a situation in which "a witch" is understood as specific, we could conclude from someone's assertion of (140) either that he (but not necessarily John) believes this person to be a witch (transparent reading) or that John (but not necessarily the speaker) believes that she is a witch (opaque reading). Fodor, on the other hand, would conclude from such an utterance either that the speaker (but not necessarily John) believes this individual to be a witch, or that both the speaker and John believe that she is a witch. She would have to say that an opaque reading of (140) on which the speaker believes that "a witch" refers, but not to a witch, could not exist independently in the sense that if it is true the transparent reading is true as well.

Fodor's evidence for this claim seems to be based on what it would or would not be possible to say under certain circumstances. For example, she asks us to

suppose . . . Charley tells me that he is off to catch an animal that he is convinced is eating the tulips and that he refers to this animal as a unicorn. In telling me about it, however, he gives me a perfect description of a griffin. (p. 259)

In this case, she maintains, she would rather assert

(her 45) Charley wants to catch a certain griffin
than

(her 46) Charley wants to catch a certain unicorn,
because

the speaker certainly does have a responsibility to
correct terminological errors that he detects. (p. 260)
. . . Whenever I . . . realise that Charley has used an
inappropriate word or expression to say what he meant to
say, then I must change this to an appropriate word or
expression when I report what he believes, hopes, etc.,
even though not when I report what he said. (p. 262)

Applying this reasoning to the case of (140), it follows that Fodor
would have qualms about reporting (140) if she did not consider "a
witch" to be an accurate description of the individual in question,
since she would then feel compelled to correct what she would consider
an error on John's part. Thus she could never say

(147) John wants to marry a witch, but I don't think she's
a witch,

but only something like

(148) John wants to marry someone who he thinks is a witch.

But this is akin to a claim of mine, stated earlier, that if John doesn't
believe that the individual referred to as "a witch" exists, I cannot
report "John wants to marry a witch," but only something like "John
would want to marry a (certain) witch, if he believed she existed."
This was my only evidence that (140) had no interpretation on which John
did not necessarily believe "a witch" to refer; it was evidence based on
an intuitive grammatical judgment. This leads us to suspect that Fodor's

presumed rejection of (147) (in the face of Heringer's and my acceptance of it), and all that this entails, is likewise based on an intuitive judgment on her part, and not on a difference between the way the two of us have analyzed referentially ambiguous utterances. If this is the case, we are not forced to choose between her analysis and mine (or Heringer's), since they are based on different data.³⁸

However, the difference between Fodor's and my criteria for the truth of a transparent reading does not explain why she (unlike Heringer and myself) has only two specific readings for a (140)-type sentence. In this case we might again say that the discrepancy is based on differing intuitions, but it is more likely to be due to a difference in theory - the theoretical problem being a matter of definition of ambiguity. That is, Heringer and I consider the question of whether or not the crucial noun phrase is presupposed (or entailed) to have a referent to be a basis for separating the specific opaque reading of (140) into two sub-readings (and I argue further that if this duality results in two opaque sub-readings it must also break up the specific transparent reading of (140) into two sub-readings). Fodor, on the other hand, would consider both the opaque and the transparent readings of (140) to be neutral as to whether or not "a witch" has a referent (as long as "a witch" is specific); the truth of either reading is compatible with this individual's being either real or imaginary (pp. 92-100). For her, then, the question of whether or not "a witch" exists does not add an extra dimension of ambiguity, only a "vagueness." Since none of us is yet in possession of a foolproof definition of ambiguity (vs. vagueness), this matter cannot be settled by argument (so we have settled it by assumption).³⁹

2b.iii. Readings of sentences containing indefinite pronouns embedded under non-factive predicates.

The opaque/transparent ambiguity disappears when a referentially ambiguous context contains a pronoun instead of a lexical indefinite noun phrase; that is,

(149) Tom believes that someone denounced Catiline

(150) John wants to marry someone

have only three readings apiece: The readings of (149) can be charted as

(151) Criteria for picking out the readings of (149)

#	Specific	"someone" exists
1	✓	
2	✓	
3		
(*4)		(✓)

(The starred reading (149)-4 is out because if Tom's belief is not about any specific "someone," there can be no question as to whether such an individual exists.) Naturally, existential generalization is valid only out of reading (149)-1. When we compare (151) with Chart (139) of the readings of

(136) Tom believes that a senator denounced Catiline,
we find that:

Reading (149)-1	} of (149) corresponds to readings	(136)-1 and (136)-2 of (136)
Reading (149)-2		(136)-3 and (136)-4 of (136)
Reading (149)-3		(136)-5 and (136)-6 of (136)

That is, each of the three readings of (149) corresponds to a pair of readings of (136), each of which pairs consists of two readings which are distinguished by the opaque/transparent distinction but which are alike according to the other two criteria. Since the transparency criterion does not apply to (149) and (150), they have half as many readings as their counterparts (136) and (140).

To see that this distinction does not apply to sentences containing pronouns in an ambiguous context, recall that transparency depends on the validity of the rule of substitutivity of identicals - a reading is transparent when, if the crucial NP is replaced by a different but co-referential NP, the resulting proposition necessarily follows from the original one and is true whenever the original one is. Now "someone" can, in a sense, "refer" to an individual - suppose that the specific reading of (150) is true, on the grounds that John wants to marry Anne. Then it seems plausible that the result of substituting any definite or indefinite NP which accurately describes Anne for the NP someone in (150) will be a true proposition, if interpreted transparently. But this does not mean that (150), when interpreted specifically, entails the transparent reading of

(152) John wants to marry Anne,

or that of

(153) John wants to marry my next door neighbor

(if that is an accurate description of the woman John wants to marry). For if we supposed that the specific reading of (150) entailed (152)-t, then, since (152)-t clearly entails the specific reading of (150), this would imply that the two have the same meaning, which is of course not the case. Thus there is no way to make sense of the substitutivity criterion as a means of distinguishing between transparent and opaque readings of (150). Or, from the point of view of "responsibility for the description," note that such responsibility in the case of (149) or (150) would merely entail committing oneself to the proposition that the individual who constitutes evidence for the truth of the specific reading of such a sentence is human. But the use of a sentence like (149) or (150), on a specific reading, commits the speaker not so much to the proposition that a certain individual is human as to the grammatical appropriateness of the use of someone as the subject of denounce or the object of marry. That is, any disagreement between the speaker and the subject of this sort of sentence as to the acceptability of the pronoun someone in this context will be a matter of syntax, not of description or terminology.⁴⁰ Naturally, the same arguments apply to the impossibility of subdividing the non-specific reading of a sentence like (149) or (150) into two readings, as could be done with (136) and (140). Thus sentences containing an indefinite pronoun under a non-factive predicate have only three readings, one non-specific reading and two specific readings, which are distinguished by the criterion of whether or not the individual who makes the reading true - the "someone" who Tom thinks denounced

Catiline or who John wants to marry - exists in the real world or only in the mind of the referent of the subject.

2b.iv. Readings of sentences containing indefinite noun phrases, lexical and pronominal, embedded under factive predicates.

We now restrict our attention to sentences with factive main verbs, e.g.

(154) Tom knows that a senator denounced Catiline.

(154) has only four readings; it does not have readings corresponding to readings (136)-3 and (136)-4 of

(136) Tom believes that a senator denounced Catiline

(see Chart (139)). That is, (136) has specific readings, (136)-3 and (136)-4, on which "a senator" does not necessarily have a referent, these readings asserting that Tom believes of a certain (possibly imaginary) individual that he denounced Catiline. But (154) cannot have such a reading: When (154) is interpreted as specific, it means that someone is such that John knows that he denounced Catiline; i.e. someone, who may or may not be accurately described as "a senator," is both such that Tom believes that he denounced Catiline and such that he did in fact denounce Catiline.⁴¹ Therefore, any specific reading of (154) must entail that the individual described in that sentence as "a senator" does "exist," since the NP "a senator" must have a referent within some real or fictional framework in order for it to be true in that framework that the individual described as "a senator" did denounce Catiline. Thus (154) cannot have a reading corresponding to (136)-3 or (136)-4 because the factivity of know and the specificity of a senator

would cause such a reading to entail that a certain individual, who may have been imaginary, did in fact denounce Catiline, which is of course absurd. (154) does, however, have readings corresponding to the other four readings of (136), distinguishable from each other by the two criteria of specificity and transparency. As Heringer points out⁴² (p. 94),

Factives with object complements work just like the verbs involved in referential opacity [ambiguity] (i.e. non-factives with object complements) with regard to the ambiguity of who is presupposed to supply the description given by the referential [specific] noun phrase. Where these verbs differ is in whether or not there is a presupposition that the speaker necessarily believes in the existence of the referent of the referential noun phrase in the complement.

The two specific readings of (154) can be paraphrased exactly as the two specific readings, transparent and opaque, of (136), which have the existential entailment (i.e. (136)-1 and (136)-2), with an added clause indicating that the individual who Tom believes to have denounced Catiline (and who may or may not be accurately describable as "a senator", depending on whether we have the transparent or the opaque reading) did in fact denounce Catiline. That is, the factivity of know assures us that

(155) $(\exists x)(x \text{ denounced Catiline and Tom believes that } x \text{ denounced Catiline}),$

but it does not assure us that "a senator" is in fact a correct description of the individual of whom the quantified formula of (155) is true.⁴³ In other words, while the factivity of know assures us (by virtue of (155)) that Tom's belief about a certain individual that he denounced

Catiline is correct, it does not guarantee that Tom's belief (which he is entailed to have by the specific opaque reading) that this individual is describable as "a senator" is correct, so that with "a senator" interpreted specifically, (154)-o can be true and (154)-t false. On the other hand, (154)-t can be true and (154)-o false if the individual who Tom has in mind (and who did in fact denounce Catiline), is not in fact accurately described as "a senator," although Tom thinks that he is. Since both specificity and transparency conditions must be met in order for existential generalization to be valid from a statement, it is clear that only (154)-1, the specific transparent reading of (154), entails $(\exists x)(x \text{ is a senator and Tom knows that } x \text{ denounced Catiline})$.

My claim that transparent and opaque sub-readings can also be distinguished for (154) when "a senator" is read non-specifically is supported by a suggestion that these two sub-readings be interpreted as (136)-5 and (136)-6 respectively with an added clause on each interpretation to the effect that someone, who is or is not necessarily describable as "a senator" (depending on whether we have the transparent or the opaque reading), denounced Catiline. The possibility of the non-specific transparent reading of (154) being true and its non-specific opaque reading being false, or vice versa, is, as in the case of the non-specific readings of (136), based on the possibility of a disagreement between Tom and the speaker of (154) as to the meaning of the word "senator" (within the context of the sentence), or of the constitution of the class of senators. Admittedly this latter possibility,

and therefore the former, is remote. Consider, however:

(156) Tom knows that Mary married an alcoholic

a. . . .but he doesn't know who it was. (non-specific)

b. . . .but Tom doesn't realize he is an alcoholic

(he thinks she married someone who only has three
drinks a day). (transparent)

c. . . .But I don't agree that whoever she married is
an alcoholic (I think it was someone who only has
three drinks a day). (opaque)

The transparency/opacity distinction, as well as the question of
existence of a referent for the indefinite NP, ceases to trouble us
when we consider

(157) Tom knows that someone denounced Catiline,

a sentence which differs from the indirect-question-containing sentence

(158) Tom knows who denounced Catiline

only in that (158) includes an exhaustiveness condition on its truth,
to the effect that all and only these individuals whom Tom believes
to have denounced Catiline also have the property of having in fact
denounced Catiline. Since (157) contains a pronoun instead of a lexi-
cal noun phrase, we cannot distinguish between opaque and transparent
readings of it; and since the possibility is not allowed, when someone
in (157) is interpreted as specific, that the individual, of whom Tom's
belief that he denounced Catiline provides evidence for the truth of
(157), does not "exist," two of our three criteria for distinguishing
among the readings of a sentence containing an indefinite NP in embedded
position are no longer applicable. There are thus only two readings for
(157): One specific reading, on which "someone" is assumed to have

a referent, and one non-specific reading. Neither reading can be characterized as either transparent or opaque, and of course, existential generalization is valid only out of the specific reading. Since, as we pointed out (in footnote 33), the specific transparent readings of

(136) Tom believes that a senator denounced Catiline
entail the non-specific transparent reading of (136), and likewise for its opaque readings, and since the same is true of

(154) Tom knows that a senator denounced Catiline
(the factivity of know in (154) does not change these entailments since the non-specific reading of (154) has the same factive presupposition as its specific reading), we would also expect that the single specific reading of (154) entails its single non-specific reading, which is the case.

Section 3: Some semantic interpretation rules which apply to sentences containing indirect questions with the right result if we assume that wh-words in factive complements are derived from specifically interpreted indefinite pronouns.

The major elements of the deep structure of a sentence containing an indirect question are, from a semantic point of view, the main predicate, the wh-complementizer, and the embedded indefinite noun phrase (these last two combine in surface structure to make the wh-word).

Each of these is responsible for some aspect of the semantic interpretation of the sentence; that is, each of these "triggers" some entailment or presupposition, these logical consequences being derived from the deep structure of a sentence by generalized semantic interpretation rules (schemata) of the sort described in Chapter I, Section 3. The main predicate of a sentence, if it is factive, triggers the factive presupposition by the rule

$$(159) \quad X - \left[\begin{array}{c} V \\ +\text{factive with} \\ \text{respect to} \\ \text{COMP}_i \end{array} \right] - \text{COMP}_i - S - Y$$

presupposes S.

Rule (159) applies to sentences containing interrogative and declarative complements alike. It assumes a deep structure representation for indirect questions like the ones we gave in Section 2a.i, in which the question is represented as the complementizer wh plus a sentence containing an indefinite pronominal NP. (It is also assumed that to and ing complements are full sentences in deep structure, with subjects and tenses marked.) If the main verb of a sentence containing an indirect question is a non-factive "question" verb, (159) does not apply. The wh-complementizer in the deep structure of a sentence containing an indirect question triggers an exhaustiveness condition on the truth of such a sentence (or its negation); all sentences containing indirect questions have exhaustiveness constraints, regardless of the factivity of the main predicate. We will discuss this presupposition in Chapter III. The indefinite pronoun, if it is marked as [+specific] with respect to the main verb, triggers the corresponding

existential entailment.

3a. Corresponding existential entailments.

We observed in Section 1 of this Chapter that

- (160) (= (29)) a. John knows who won the election
 b. John doesn't know who won the election
 c. John is surprised at who won the election
 d. John is not surprised at who won the election

entail, respectively,

- (161) (= (30)) a. ($\exists x$) (John knows that x won the election).
 b. ($\exists x$) (John doesn't know that x won the election).
 c. ($\exists x$) (John is surprised that x won the election).
 d. ($\exists x$) (John isn't surprised that x won the election).

If we assume the indefinite pronoun underlying the wh-word in each of (160)a-d to be marked [+specific] with respect to the main predicate, it is easy to write a rule deriving the deep structures of entailments (161)a-d from the deep structures, respectively, of (160)a-d. The rule simply substitutes a that-complementizer for the wh (so that in the surface structure of each existential entailment the indefinite pronoun is preserved in its non-wh form. The rule is

$$\begin{array}{ccccccc}
 (162) & X - & \left[\begin{array}{c} V_0 \\ +factive \text{ with} \\ \text{respect to } \underline{wh} \end{array} \right] & - & S_1 [\underline{wh} - Y - & \left[\begin{array}{c} NP \\ -definite \\ +PRO \\ +specific \text{ with} \\ \text{respect to } \underline{wh} \end{array} \right] & - Z] \\
 & 1 & & & 2 & & 3 & 4 & & 5 & & 6 \\
 & & & & & & \text{entails: } 1-2-\underline{\text{that}}-4-5-6.
 \end{array}$$

We are assuming that there are "logical rewriting rules" which turn deep structures containing certain semanto-syntactic features into "well-

formed formulae" written in standard logical notation, and it is in this form that propositions expressed by sentences are dealt with by the semantic component. For instance, we assume that the deep structure of the corresponding existential entailment of (160)a,

(163) John $\left[\begin{array}{c} \text{knows} \\ +\text{factive} \end{array} \right]_S$ [that $\left[\begin{array}{c} \text{someone} \\ +\text{specific} \\ \text{with respect} \\ \text{to } \underline{\text{know}} \end{array} \right]$ won the election].

(where (163) is the result of applying rule (162) to the deep structure of (160)a), enters the semantic component as a quantified formula along the lines of (161)a. (If the someone of a deep structure like (163) were marked [-specific with respect to know], the corresponding logical formula would be "John knows that $(\exists x)(x$ won the election).") Presumably there are similar rules to turn conjunctions into logical connectives, etc.⁴⁴

Since

(161)a $(\exists x)(\text{John knows that } x \text{ won the election}),$

which represents the specific reading of

(164) John knows that someone won the election,

entails the non-specific reading of (164),

(165) John knows that $(\exists x)(x \text{ won the election})$

(see footnote 33), and since the entailment between (161)a and (165) is a fact about sentences containing indefinite NP's embedded under epistemic predicates (i.e. the rule accounting for this entailment would have to be in the grammar even if we didn't have to deal with indirect questions), entailment (165) of (160)a is also easily derived from its deep structure through an assumption that the wh-word of

(160)a is marked as [+specific], since entailment is a transitive relation. Note also that (160)b-d do not have non-specific entailments corresponding to (165): Certainly

(160) b. John doesn't know who won
does not entail

(166) John doesn't know that $(\exists x)(x \text{ won the election})$ -
i.e. "John doesn't know that there was a winner." (As Fodor points out (p. 123-124), when there is an entailment from the specific to the non-specific reading of a sentence containing an embedded indefinite noun phrase, there is no such entailment from the specific reading of the negation of this sentence to the non-specific reading of the negation. But there is an entailment the other way around, from the non-specific reading of the negation to the specific reading of the negation. For example,

$$[(161)a, (\exists x)(\text{John knows that } x \text{ won})] \rightarrow [(165), \text{John knows that } (\exists x)(x \text{ won})]$$

is valid, while

$$[(161)b, (\exists x)(\sim \text{John knows that } x \text{ won})] \nrightarrow [(166), \sim \text{John knows that } (\exists x)(x \text{ won})]$$

(with "~" to be read "it is false that") is not valid. But

$$[(166), \sim \text{John knows } (\exists x)(x \text{ won})] \rightarrow [(161)b, (\exists x)(\sim \text{John knows that } x \text{ won})]$$

is valid.) Thus by representing the NP someone in the deep structure of (160)b as [+specific], we can prevent the unwanted non-entailment (166)

from being "read off" the deep structure of (160)b as (165) is read off that of (160)a. Similarly, the fact that (160)c and d do not entail, respectively,

(167) a. John is surprised that $(\exists x)(x \text{ won the election})$

b. \sim John is surprised that $(\exists x)(x \text{ won the election})$

can be accounted for in terms of the fact that (161)c and d do not entail these either (since the specific-to-non-specific entailment holds only for epistemic predicates in "positive" environments).

3b. Transparent entailments.

Our definition of existential generalization, and the fact that it is valid out of the specific reading of

(157) Tom knows that someone denounced Catiline,
suffice to explain why

(168) Tom knows who denounced Catiline, but he doesn't know
that {^{Tully}
a senator} denounced Catiline

is not necessarily contradictory. Existential generalization from (157) asserts that there is a "real" individual such that Tom believes of him that he denounced Catiline. It is clear that if the individual who Tom has in mind as having denounced Catiline is in fact correctly described as "Tully" (or as "a senator"), the transparent reading of

(169) Tom knows that {^{Tully}
a senator} denounced Catiline

is true. However, the truth of the specific reading of (157) does not under these circumstances assure us of the truth of the opaque reading of (169), for (169)-o has an extra truth-condition that Tom must

consider "Tully" (or "a senator") to be an accurate description of the individual who he knows to have denounced Catiline. Consequently, it is not inconsistent to assert (157) while denying (169)-o. Nor is it inconsistent to assert

(158) Tom knows who denounced Catiline
while denying (169)-o (as is done by (168) when the but-clause is interpreted opaquely); although the exhaustiveness condition on (158) assures us (in part) that "Tom knows that x denounced Catiline" is true of every individual x such that x in fact denounced Catiline, and it necessitates that

(170) Tom knows that D(x) denounced Catiline
is true transparently for every description or designation D(x) which accurately refers to any individual who in fact denounced Catiline, it does not assure us that (170) is true opaquely of any particular D(x). Therefore, (168) and sentences such as

(111) Mary knows who won the election, but she doesn't
know that John won
and

(118) Mary knows who won the election, but she doesn't know
that the world's foremost authority on the boat-tailed
grackle won

are contradictory - the but-clause in each case violates the exhaustiveness constraint on the truth of the first conjunct - only if the but-clause is read transparently. They are consistent if the but-clause in each case is read opaquely.

3c. Existential entailments and presuppositions of belief.

Existential entailments of belief can be "read off" the deep-structure representations of factive sentences containing indirect questions by quite simple rules if we assume that the wh-words of the indirect questions are derived from indefinite pronouns which are marked as [+specific] with respect to the factive main predicate.

Any sentence of the form

$$(171) \quad X - \left[\begin{array}{c} V_0 \\ +\text{factive with} \\ \text{respect to} \\ \text{COMP} \\ +\text{emotive} \end{array} \right] - Y - {}_S[\text{COMP} - Z - \text{NP}_1 - W]$$

(where either X or Y contains the "logical subject" NP_0 of the sentence⁴⁵) presupposes

$$(172) \quad \text{NP}_0 \text{ knows that } {}_S[Z - \text{NP}_1 - W]$$

and any sentence of the form

$$(173) \quad X - \left[\begin{array}{c} V_0 \\ +\text{factive with} \\ \text{respect to} \\ \text{COMP} \\ +\text{epistemic} \end{array} \right] - Y - {}_S[\text{COMP} - Z - \text{NP}_1 - W]$$

(where $X-V_0-Y$ is a "positive" upper sentence) entails (172). If we assume that the wh-words of factive indirect-question-sentences are derived from specific NP's, then since deep structures of the form

$$(174) \quad X - \left[\begin{array}{c} V_0 \\ +\text{factive with} \\ \text{respect to } \underline{\text{wh}} \\ +\text{emotive} \end{array} \right] - Y - {}_S[\underline{\text{wh}} - Z - \left[\begin{array}{c} \text{NP}_1 \\ +\text{PRO} \\ +\text{specific with} \\ \text{respect to } V_0 \end{array} \right] - W]$$

and

$$(175) \quad = (174) \text{ except that } V_0 \text{ is } [+epistemic] \text{ and not } [+emotive]$$

fit the schemata (171) and (172) respectively, these rules tell us that a sentence of the form (174) presupposes, and a sentence of the form (175) entails, that

$$(176) \quad NP_0 \text{ knows that } S[Z - \left[\begin{array}{c} NP_1 \\ +PRO \\ +specific \\ \text{with respect} \\ \text{to } \underline{\text{know}} \end{array} \right] - W],$$

i.e.,

$$(177) \quad (\exists x) (NP_0 \text{ knows that } S[Z - x - W]),$$

or

$$(178) \quad (\exists x) (Z - x - W \text{ and } NP_0 \text{ believes that } S[Z - x - W]).$$

For example,

$$(179) \quad \text{John is amazed at who won the election}$$

presupposes

$$(180) \quad (\exists x) (x \text{ won and John believes that } x \text{ won})$$

and

$$(181) \quad \text{John found out who won the election}$$

entails (180). Thus the marking of the indefinite pronoun which underlies the wh-word of an indirect question in a factive sentence as [+specific] gets us the proper existential entailments and presuppositions of belief and knowledge for those sentences. We can also write a rule deriving the correct belief entailments for non-factive sentences containing indirect questions if we assume that in such sentences as

$$(182) \quad \text{John wonders who won the election,}$$

the indirect-question clause, in deep structure, exists beside the

"upper" clause, rather than being embedded under it. Then in the sentence underlying the indirect question, which for (182) is "wh+someone won the election," the indefinite pronoun is (as is ordinarily the case with indefinites in non-embedded position) "neutral" and neither [+specific] nor [-specific] with respect to wonder. The rule says that a sentence of the form

$$(183) \quad X - \left[\begin{array}{c} V_0 \\ \text{-factive with} \\ \text{respect to } \underline{wh} \\ \text{+epistemic} \end{array} \right] - Y - S[\underline{wh} - \left[\begin{array}{c} NP_1 \\ \text{+PRO} \end{array} \right] - W]$$

entails, on the condition that $X-V_0-Y$ is "positive,"

$$(184) \quad NP_0 \text{ believes that } "Z - NP_1 - W."$$

(The quotation marks indicate that " $Z - NP_1 - W$ " is to be taken as a whole as a statement which is being claimed to be believed by NP_0 , as opposed to a dependent clause in which the indefinite NP_1 must be marked as either [\pm specific] with respect to believe.) By this rule, (182) entails

(185) John believes the proposition "Someone won the election" which is certainly an entailment of (182), since John could not wonder who won if he did not believe that the election had a winner. (There is no existential entailment of belief for a sentence of the form (183) in which $X-V_0-Y$ is "negative": Although

(186) John doesn't wonder who won the election is compatible with

$$(187) \quad (\exists x)(\text{John believes that } x \text{ won the election}),$$

(186) entails neither (187) nor (185), since it may be true in a situation in which John neither knows, believes, nor cares anything about the election or its outcome.)

Footnotes to Chapter II

1. i.e., the emotive factives - as defined below.
2. Although not all of them take all sorts of indirect questions - for example, as pointed out earlier, the factive emotives do not take whether-questions (we will shortly consider the reasons for this). In particular, regret and resent are oddly limited as to the interrogative complements they will allow:

John regretted who he had voted for
 what he had drunk
 *why he had spilled the beans
 ?where he had spent his vacation

I resent how you treat me
 ?where we have to meet
 ?*when you came home last night
 *who you invited.

Another enigma is the ability of the factive prove to take indirect questions when its subject is an inanimate thing, or a declarative or interrogative clause, but not when its subject refers to a person:

His tracks prove where he went.
His diary proves why he did it.
His having asked for a raise proves what he thinks of the boss.
How he behaves will prove whether or not he is guilty.

but:

*John proved where Bill went.
*I will prove what he did.

Perhaps there are two separate senses to prove, based on the agent-instrument distinction with respect to its subject; however, this would not explain the contrast above, since both senses must be regarded as factive:

John	}	proved that she was lying (*but in fact she hadn't been).
Her nervousness		
The way she hesitated		

3. Presumably the statement of the embedded clause in (17)a should be interpreted in the future, since the time of "John go" is later than the time of "John decide," and also since (17)a is synonymous with "John decided that he would (or should) go to Paris." But (17)a does not presuppose "John would (or should) go to Paris," while (17)b does presuppose "John would (or should) go somewhere."

4. Lauri Karttunen has suggested (personal communication) that my distinction between "wh-factives" and "non-factives which take indirect questions" could be revised in terms of his "Plugs" vs "Holes" analysis (see Chapter IV, footnote 31). This revision would involve (i) stating that the wh of indirect questions, like that of direct questions, triggers the existential presupposition to the effect that there is a (true) answer to the embedded question, (ii) dropping the notion "wh-factive" and classifying tell, teach, decide, etc. as non-factive, and (iii) stipulating that wonder, ask, be a mystery, etc. - the "verbs of questioning" - are "Plug"-predicates which block off those presuppositions triggered by elements within their complements, so that sentences containing indirect questions under these verbs do not have the presupposition triggered by wh (referred to in (i) above), but (iv) stipulating that tell, teach, decide, etc. - which I called "wh-factives" - are "Hole"-predicates (as are all factives and "indifferent" predicates) which allow presuppositions of their complement clauses to be presuppositions of the sentence as a whole. Thus sentences containing indirect questions under "Hole"-predicates, whether factive or non-factive, have the existential presupposition triggered by wh. I have not had time to explore this promising-looking approach.
5. In deep structure, the missing indirect object of sentences like (20) might be identifiable with the personal pronoun one, deletable because one does not appear in the dative in American English (compare (23) below).
6. The expression "logical subject" refers to the personal indirect object of such predicates as be well-known and be surprising, as well as to the (syntactic) subject of predicates like know and be surprised at. The point is that the semantic claim about "existential entailments of belief" applies regardless of whether the wh-clause is subject or object of the main predicate, but we are fudging the issue of how the analogical relationship between, say, the subject of know and the indirect object of is well-known can be captured in the deep structure representation of sentences containing an indirect question, it being understood that "logical subject" means "the subject" if the main predicate is one which takes object-complements and "the indirect object," if the main predicate takes subject-complements.
7. Readers unfamiliar with the specific/non-specific distinction among indefinite NP's may refer to Section 2a.i.
8. Actually, it is not quite that simple - when we speak of someone being able to reply to a question, should he be asked it, there is always the issue of how closely he must specify the individuals, (times, places, etc.) which (in the replier's opinion) constitute the answer to the question. Thus under certain circumstances, if we asked "Who won the election?" and the reply was "The Republican candidate," we would give the replier credit for "having an opinion as to the answer" (and, if the Republican candidate was in fact the winner, one would say that this "reply" was in fact the (correct)

"answer," so that the answerer not only had an opinion as to, but knew the answer), even if he was unable to come up with the name of the Republican candidate. But under different circumstances we might judge this reply as being insufficiently "informative" as an answer to the question, and if the replier could not specify the winner more closely we would not give him credit for "having an opinion as to the answer." "Informativeness" constraints on answers to direct questions (and as truth-conditions on sentences containing indirect questions) are discussed briefly in Chapter III, Section 1a.

9. Actually factive predicates, except for the verbs of saying among them - see footnote 11) also trigger existential entailments or presuppositions of knowledge when they take declarative complements:

(i) John found out that Bill won

entails

(ii) John knows that Bill won,

and

(iii) John is surprised that Bill won

presupposes (ii), so this is not really just a fact about sentences containing indirect questions. However, semi-factives like remember trigger the entailment of knowledge only when the complement is interrogative:

(iv) John remembers who won

entails

(v) John knows who won,

but

(vi) John remembers that Bill won

does not entail (ii) (although it is of course compatible with it), since (vi) does not necessitate "Bill won."

10. By "when positive (negative)" we mean "when appearing in a positive (negative) sentence" - a negative sentence being one containing a negative element such as not, no or none, or a negative verb like forget or unknown. A positive sentence either lacks such elements or has two which cancel each other out, as in "No one forgot." This positive-negative criterion is essentially that of Klima (1964) and is not quite foolproof but will serve for obvious cases.

11. There is a class of exceptions to all these generalizations - the "verbs of saying." In general, verbs of saying do not trigger any entailments or presuppositions with regard to the beliefs of the subject. This exception applies across-the-board and so it is not relevant to my classification of indirect-question predicates. For example, sentences containing indirect questions under the following verbs have no existential entailments of belief or knowledge: apologize (which is factive), announce (which is "indifferent"), and predict (which is wh-factive). Similarly, although sentences containing indirect questions under wonder entail (as we point out below) that the subject lacks an opinion as to the answer, when the main predicate is a non-factive verb of saying, such as ask or inquire, there is of course no entailment that the asker lacks an opinion as to the answer (since we may ask a question whose answer we already believe that we know). I am grateful to Lauri Karttunen for pointing out to me this class of exceptions.
12. However, we do refer to these derivations, so I quote them below for reference (Ross (1970b), p. 4). The conjunctive indirect question in (i)d is derived from the conjunction of that-clauses in (i)a; the disjunctive indirect question in (ii)d is derived from the disjunction of whether-questions in (ii)a.

- (i) a. That Milt gave brownies to Don and that Milt gave honey slide to Don is significant.



Factoring

- b. That Milt gave what to Don and that Milt gave brownies to Don and that Milt gave honey slide to Don is significant.



Question formation (Obligatory?!?)
delections

- c. What Milt gave to Don - brownies and honey slide - is significant.



Rule X

- d. What - brownies and honey slide - Milt gave to Don is significant.

- (ii) a. Whether Milt gave brownies to Don or whether Milt gave honey slide to Don is unclear.



Factoring

- b. Whether Milt gave what to Don or whether Milt gave brownies to Don or whether Milt gave honey slide to Don is unclear.



Question formation (Obligatory (?!?!))
deletions

- c. What Milt gave to Don - (whether) brownies or (?whether) honey slide - is unclear.



Rule X

- d. What - (whether) brownies or (?whether) honey slide - Milt gave to Don is unclear.

13. But this is not an exclusive distinction, as Ross points out that some conjunctive question predicates can take disjunctive indirect questions given certain modifications in the main clause (see below).
14. The sense of determine which is intended here is equivalent to "find out for sure." There is also a sense of determine which means, approximately, "necessitate," as in "whether or not you go to heaven is determined by how often you go to church;" a third sense means "make up one's mind," as in "I immediately determined to act." Perhaps this three-way lexical split renders determine a bad choice for Ross's paradigms, but in any case, all three senses allow indirect questions and all three appear to behave the same way with respect to his conjunctive/disjunctive criteria.
15. (58) is a better interpretation since (57), although it is logically valid in that it is true when either disjunct is true, it is logically odd in that if one disjunct is true, the other necessarily lacks a truth value. (58) avoids this problem.

The entailment from (57) to (58) can be proved as follows:

Let us represent

- (i) John knows that Bill won

as the conjunction of

- (ii) Bill won

and

- (iii) John believes that Bill won.

Similarly,

- (iv) It is false that John knows that Bill won

will be represented as the conjunction of

- (ii) Bill won

and

(v) It is false that John believes that Bill won.

Thus if we let

A = Bill won,

B = John believes A

C = John believes $\sim A$ (not-A)

we can represent (57) logically as

$(A + B) \text{ or } (\sim A + C)$

("+" is conjunction, "or" is disjunction). To show that (57) entails (58) note that (57) is equivalent to

$\sim(A+B) \supset (\sim A+C)$ (\supset = implies)
or
 $\sim(\sim A+C) \supset (A+B)$

which is equivalent to

$(A \text{ or } \sim C) \supset (A+B)$

Then since the following are tautologies:

$\sim A \supset \sim(A+B)$

$(\sim A+C) \supset C$

$A \supset (A \text{ or } \sim C)$

$(A+B) \supset B,$

we have

$\sim A \supset \sim(A+B) \supset (\text{by (57)}) (\sim A+C) \supset C$

and

$A \supset (A \text{ or } \sim C) \supset (\text{by (57)}) (A+B) \supset B$

that is, if (57) holds, A implies B and not-A implies C; Thus from (57) and the tautologies can be concluded

If Bill won (A), then John believes that Bill won (B).

If Bill didn't win ($\sim A$), then John believes that Bill didn't win (C).

But if Bill won (A), then John's belief that Bill won is evidence (given our interpretation of "knowing that") that John knows that Bill won; similarly, if Bill didn't win and (therefore, by $\sim A \supset C$) John believes that Bill didn't win, John knows that Bill didn't win. Thus (58) can be derived from (57). Using the same notation (57) can also be deduced from (58).

16. NB: Baker himself does not interpret (59) as (60); he does not consider this possibility since, as we noted early in this chapter, he does not recognize the factive emotives as question-embedding predicates at all.
17. This somewhat obsolete auxiliary occurs only under the command of an "Affective" - NEG, Q, only, etc. (see below)

He need not go.
Need he go?
He need only ask.
*He need go.

Since the auxiliary need does not appear in questions other than yes-no questions (*Who need he speak to? *Where need he go?), we would expect that the only indirect questions which permit it are whether-questions, which turns out to be the case:

I wonder whether I need go.
?I don't know whether you need bring any books.
*John asked who(m) he need speak.
*I wonder why I need leave.

18. Of course, disjunctive appositions are allowed, even when the sentence entails that the speaker knows the answer to the question, in the special case in which the answer itself is a disjunction. If John is expected to arrive either Thursday or Friday, it is possible to say

I know when John is expected - either Thursday or Friday,
in contrast with the "bad" examples of (65).

19. What sort of an answer counts as "informative" varies with the situation. In general, an informative answer to a who-question contains an NP of such a nature as to satisfy us that the utterer of the answer actually knows what the answer is. The name or title of an individual would ordinarily suffice as a significant answer to this question, and thus as evidence for the truth of (90); something like "The man who won was the man who received the most votes" ordinarily would not. See Chapter III, Section 1 a.

20. Thus when we speak (sloppily) of an indefinite noun phrase as [+specific], we should be understood to be claiming that the NP is being interpreted as [+specific] with respect to the main predicate of the sentence in which it appears.
21. This generalization of Baker's should, however, be limited to indirect questions embedded under factives:

It's no mystery to John who Mary is engaged to because he thinks it's Tom - but he's wrong.
22. We will deal with this analysis of factives, and of know in particular, more thoroughly in Chapter III.
23. In practice, these exhaustiveness conditions do not always hold (which is why I modified my claims above with "strictly"); how completely they must be met depends upon how many components there are to a complete and correct answer, or to a "significant" answer (see Chapter III, Section 1a).
24. Readers unfamiliar with the opaque/transparent distinction will find a definition of it in Section 2b.i.
25. Fodor (p. 1) uses the term "opaque" for ambiguous as well as purely opaque contexts, and Heringer (p. 91) similarly calls ambiguous contexts "referentially opaque," but it seems less confusing to reserve these terms for unambiguously (purely) opaque contexts.
26. Fodor has a slightly different formulation in which, on an opaque reading, the speaker as well as the subject must consider the description to be accurate; see below.
27. "Externally quantified" means that the quantifier is placed to the left of the verb. That is, the sentence expressing P' is derived from the one expressing P by replacing the NP in question with the appropriate indefinite pronoun - someone, something, etc. - this indefinite to be interpreted as specific if it is in embedded position. When an embedded indefinite NP is interpreted as specific with respect to the main verb, it is represented in logic by a variable x and an existential operator ($\exists x$) ("There is") which is written to the left of the upper clause. The specific reading of "John believes that someone won" is written " $(\exists x)$ (John believes that x won)," while the representation of the non-specific reading of such a sentence has the existential operator after the main predicate, as in "John believes that $(\exists x)$ (x won)." Unambiguous sentences containing indefinite NP's are externally quantified: "John saw someone" is expressed as " $(\exists x)$ (John saw x)." Of course, existential generalization may be valid for a proposition with respect to one definite term occurring in it but not with respect to another (e.g. if one is interpreted as transparent with respect to the main verb and the other is opaque), but we shall ignore this complexity and make it clear by our examples which, among a number of possibilities, is the crucial NP.

28. I am fudging the issue of just what is involved in a claim that an object "exists," a not unpardonable offense, considering the complexity of this problem and the extensiveness of the literature on the subject - cf. Berkeley (1713), Descartes (1637), Cervantes (1605, 1615), Plato (-500), etc. Seriously, though, I would like to point out that fictional or legendary individuals are often spoken of as though they "existed," in the sense that the propositions

(i) Don Quijote lived in La Mancha

(ii) Achilles had a bad temper

have the same existential presuppositions with respect to Don Quijote and Achilles as

(iii) De Gaulle was bald

has with respect to De Gaulle. The reader is referred to Fodor (1970) for a discussion of the problem of "referents" for fictional individuals. (There is also of course a separate issue (irrelevant to linguistics) of whether a given individual did in fact exist or is merely fictional - King Arthur, for example, or the kings of the Old Testament.) The kind of disagreements as to the "existence" of an individual (i.e. of a referent for NP) which we will be dealing with below are based on a conflict between a belief (by one person) that some individual exists and a belief (by another person) that this individual does not really exist except in the other person's mind ("belief world," according to Hintikka (1969) and others).

29. Since I am adopting Quine's formulation of existential generalization, I should perhaps point out that I do not, on the other hand, accept his analysis of all the examples I have borrowed from him - in particular, he implies that sentences like (124) and (129) cannot be interpreted transparently, and are unambiguously opaque (1961, p. 147).
30. Actually, it is not clear whether, when the existence (reference) entailment does hold, it should be considered a presupposition - that is, an entailment of the negation as well; this depends on how the negation is read. For example, if

(124) Tom believes that Cicero denounced Catiline

is interpreted transparently and so that "Cicero" is entailed to have a referent, its negation

(i) It is false that Tom believes that Cicero denounced Catiline

can be read as

- (ii) Tom is such that it is false that he believes that Cicero denounced Catiline

or as

- (iii) Cicero is such that it is false that Tom believes that he denounced Catiline.

That is, if (124) is "about" Cicero, its negation is read as (iii), and "Cicero" is presupposed, and not only entailed, to have a referent; if (124) is not about Cicero but rather about Tom's beliefs, so that its negation is read as (ii), then the negation does not entail

- (iv) "Cicero" has a referent

and therefore (iv) is only an entailment and not a presupposition of the reading in question of (124).

- 31. For this to be true, we really need to add that John must in addition consider all hunchbacks to be witches. That is, even if it is true (opaquely and non-specifically) that John wants to marry a witch, and also true that John thinks that all witches are hunchbacks, it does not necessarily follow that (non-specifically and opaquely) John wants to marry a hunchback - only that he wants to marry a hunchback who is also a witch.
- 32. Heringer further confuses the issue by illustrating this true but irrelevant claim solely with examples in which the substitution for a (non-specifically and opaquely interpreted) indefinite noun phrase is by an analytically identical NP - e.g., the substitution of "an unmarried person" for "a bachelor." But this is only a special case, and furthermore, as Fodor (1970) points out (p. 293),

"It is widely accepted that the substitution, within an opaque context, of one expression for another with which it is synonymous does not affect the truth value of the sentence. . . . The kind of substitution that differentiates opaque and transparent readings is the substitution of one expression for another that, as a matter of fact [i.e. in the speaker's opinion], is co-extensive with it, not the substitution of synonymous expressions."

- 33. That is, we showed that this ambiguity existed when a non-specifically interpreted NP is embedded under the emotive verb want; we will now show that it exists when the verb is an epistemic one like believe. We discussed the case of (140) first because the studies we were quoting from had want in their paradigms, but we must consider epistemic cases as well since these are the ones that are most relevant to factive indirect questions (on account of existential entailments of belief and knowledge, etc.). And we cannot assume

that what we have said about the examples with want is also true of examples with believe, since a non-specific NP is interpreted somewhat differently when it is embedded under an epistemic predicate from when the main predicate is emotive. For example, the non-specific reading of

(136) Tom believes that a senator denounced Catiline

can be represented (assuming no disagreement as to descriptions) as

(i) Tom believes that there is a senator such that he denounced Catiline,

but the non-specific reading of

(140) John wants to marry a witch

does not mean the same thing as

(ii) John wants there to be a witch such that he marries
(?will marry) her.

Another difference is that the specific reading of (136) entails its non-specific reading (that is, its specific transparent readings each entail its non-specific transparent reading and its specific opaque readings each entail its non-specific opaque reading), while the specific readings of (140) do not entail its respective non-specific readings. Thus if there is a senator who is such that Tom believes that he denounced Catiline, then Tom must believe that Catiline was denounced by some (non-specific) senator. But if there is a particular witch whom John wants to marry, it is not clear that he wants, in general, to marry a witch, since the latter (the non-specific reading of (140)) seems to imply that "witch-ness" is an essential characteristic that any woman must have in order that John should want to marry her, whereas on a specific reading of (140) it is merely claimed that a certain individual, who is such that John wants to marry her, happens to have that characteristic. For a discussion of the relation between the specific and non-specific readings of referentially ambiguous sentences with different sorts of main verbs, see Fodor (1970), pp. 113-129).

34. We should point out that although we said that Fodor (1970) also claims only two specific readings for a sentence like (140), she too, like Heringer, deviates from this "classical position," as indicated by the quotation in Section 2b.i from p. 8 of her thesis, in which the independence of transparency and existential generalization was asserted. Her two readings for such a sentence do not correspond exactly to (140)-1 and (140)-4.

35. This is the same point as the one made by Fodor (1970), p. 8, which we quoted in Section 2b.i. Her "almost all discussions of opacity" and Heringer's "most discussions of referential opacity" are both probably references above all to Quine (1960, 1961). It is not absolutely clear that Quine identified these two questions, but it isn't absolutely clear that he didn't either.
36. It should be mentioned (although Heringer does not address this problem) that it is not clear whether the propositions

(i) "A witch" in (140) has a referent

(ii) John considers "a witch" to have a referent

are presuppositions or merely entailments of the relevant readings of (140); there is the same issue here as the one we brought up in footnote 30 with respect to definite noun phrases. If the specific transparent reading of (140) on which "a witch" necessarily has a referent is represented as

(iii) $(\exists x)(x \text{ is a witch and John wants to marry } x)$,

then the corresponding reading of the negation of (140),

(iv) John doesn't want to marry a witch,

should be represented as

(v) $(\forall x)(\sim x \text{ is a witch or } \sim \text{John wants to marry } x) -$

that is, "For all x , either it is false that x is a witch or it is false that John wants to marry x ," or "There is no one of whom it is true both that she is a witch and that John wants to marry her." In this case the negation of this transparent reading of (140) can be read so as to transform the specific NP of (140) into a non-specific, so that (iv) is not about any particular witch and the "existence question" is vacuous. By this reasoning (140) on reading (iii) only entails and does not presuppose (i). On the other hand, analogously to what we found in the case of definite noun phrases, (140) can be viewed, on its specific readings, as being "about" a certain (real or imaginary) individual (who may or may not be accurately describable as "a witch"). If so, we can express the specific transparent reading of (140) on which "a witch" is presupposed to have a referent as

(vi) A certain witch is such that John wants to marry her

and the negation of this reading as

- (vii) A certain witch is such that it is false that John wants to marry her;

in this case the question does arise as to whether this witch really exists, exists in John's imagination, etc. Thus if the negation of the specific readings of (140) on which "a witch" necessarily exists is read as (vii), those readings which entail (i) will also presuppose (i), and likewise with (ii).

37. Heringer's eight "logically possible" specific readings for

(140) "John wants to marry a witch" can be tabled as follows:

#	transparent	presupposes that "a witch" exists	presupposes that John be- lieves that "a witch" exists
1	✓	✓	✓
2		✓	✓
3	✓		✓
4			✓
5	✓	✓	
6		✓	
7	✓		
8			

Readings 1-4 correspond to the four specific readings, respectively, which we claimed for (136); Heringer claims that (140) can be read specifically only as 1, 2 or 4. We both agree that (140) cannot be interpreted specifically as 5-8.

38. There are cases of the sort under discussion in which my dialect agrees with Fodor's; for example, I must concur with her rejection of "Charley thinks that a certain book of mine belongs to him, but I don't know whose it is" (p. 256). Obviously, a lot more analyzing and intuition-searching must be done before we can come up with a solution which describes all the facts of each person's dialect. But the fact that I cannot make any sense of a (140)-3 reading for "Charley thinks that a certain book of mine belongs to him" does

not invalidate the fact that, in my dialect, there is such a reading for (140).

39. A possible start at a definition of ambiguity might be derived from a frequently-stated definition of paraphrase: Keenan (1970) p. 37) states that in order for two sentences to be considered paraphrases they must have the same "valid argument structure" - that is, they must be entailed by the same set of propositions and they must have the same set of logical consequences. If this much is accepted, it follows that two sentences which are paraphrases necessarily entail each other, since every proposition is a (trivial) logical consequence of itself. Contrapositively, we can conclude that if it is not true that two readings of a sentence both entail each other, these two readings cannot be synonymous, in which case we must assign them separate semantic representations which reflect this difference in their entailments. But this is not really much help: Naturally (140)-3 may be true and (140)-1 false, and (140)-4 may be true and (140)-2 false - since we have defined (140)-1 and (140)-2 to include an entailment which the other two lack. But this demonstration of the lack of entailment between each of two pairs of readings does not show that four separate readings can be distinguished, since it assumes (circularly) that there are four readings.
40. However, it does seem possible for there to be disagreement between the speaker and the subject over the choice of pronoun when the humanness feature on the pronoun is not determined by the embedded verb, as in

(i) Mary is looking for someone.

(That is, the choice of pronoun in (149) and (150) is determined by their respective subordinate verbs: denounce requires a human subject and marry requires a human object. But look for (or want to find) places no restriction as to its object.) For example, suppose that someone told Mary to look for Rover, who she thinks is a dog but who is in fact a human being. Then it does seem possible to separate (i) (assuming that it is read specifically and that Rover is "real" or "existing") into a transparent sub-reading (which will be true, since there is in fact someone, i.e. a particular human being, namely Rover, who is such that Mary is looking for him) and an opaque sub-reading (which will be false, since Mary can sincerely and consistently deny that there is any human being that she is looking for). Quine (1960) claims that such a distinction cannot be made for sentences analogous to (i); in discussing the sentences (his numbers)

(2) The commissioner is looking for the chairman of the hospital board

and

(3) The commissioner is looking for the dean,

he claims that

"The treatment that would count (2) as true and (3) as false [assuming that "the chairman" and "the dean" designate the same individual] makes the truth value of such statements depend on what epithet is used in designating the sought person; and such a distinction is inapplicable in 'The commissioner is looking for someone,' where the sought person is not designated at all"

(p. 146). (This treatment would be possible on the opaque reading of Quine's (2) and (3), where the commissioner does not know - or disbelieves - that "the chairman" and "the dean" are the same person.) But he is talking here about a discrepancy between the case of a definite NP and an indefinite pronoun; in his account, the reason (I think) that someone does not "designate" anybody is because it is indefinite (although possibly specific), not because it lacks descriptive lexical content. We reject this point of view: we do speak of an indefinite NP "referring to" or "designating" someone, or as "having a referent" - which it does if it is interpreted specifically and there is a "real" as opposed to merely imaginary individual of whom the quantified formula of the specific reading is true. But this is a murky area; if (i) really can be divided into transparent and opaque sub-readings, while (149) and (150) cannot, and this is due to the "human subject" and "human object" features on denounce and marry respectively, and the lack of any such restriction on the object of look for, it might be helpful to look at other languages to see what differential features can be placed on indefinite pronouns regarding gender, animateness, etc.

41. That is, any specific reading of

(154) Tom knows that a senator denounced Catiline

entails

($\exists x$) (x denounced Catiline and Tom believes that x denounced Catiline),

just as the specific reading of

(88) John knows that someone won the election

entails

(108) ($\exists x$) (x won and John believes that x won)

(see Section 2a.ii).

42. Heringer attributes this point to Lakoff (oral communication) (but it is not a quotation from Lakoff).

43. Although the factive presupposition of (154),

(i) $(\exists x)(x \text{ is a senator and } x \text{ denounced Catiline}),$

does assure us that "a senator" is an accurate description of at least one person who denounced Catiline, the individual who satisfies condition (i) on the truth of (154)-t, read specifically, need not be the same as the individual who fulfills condition (155), if more than one individual denounced Catiline.

44. These are of course meant as heuristic rules, allowing us to deal with logical phenomena in logical terms. They are not rules in the sense of models for how the human brain interprets the deep structure of a sentence.

45. i.e. X contains this NP_0 if V_0 takes object complements and human subjects and Y contains the personal indirect object of V_0 , which constitutes the "logical subject" NP_0 of the sentence, if V_0 is a predicate (such as be surprising, be odd, be unknown) which takes subject complements. (We assume that this "logical subject" is present in the deep structure of the latter type of sentence in the form of an indirect object even if it does not appear in surface structure.)

CHAPTER III - THE EXHAUSTIVENESS CONSTRAINT AND OTHER TRUTH-CONDITIONS
ON SENTENCES CONTAINING INDIRECT QUESTIONS

The President is aware of what is going on in Southeast Asia.
That is not to say that there is something going on.

. . . Ronald Ziegler, White House
Press Secretary, quoted in
Newsweek, February 15, 1971.

In this chapter we attempt to formulate, in standard logical notation, the truth-conditions on sentences containing indirect questions. We will examine paradigmatic sentences with factive epistemic and emotive main verbs, conjuring up various sorts of situations and considering whether in each situation a given proposition of the type under discussion is true, false, or neither true nor false. We will generalize from such evidence to semantic interpretation rules which will derive from the deep structure of a reading of a sentence the deep structures of the presuppositions and entailments of the sentence on that reading. Some of these rules will be of a more or less ad hoc character but we will try to show that many of the representations, terminologies and rules we are introducing apply (or can be modified so as to apply) to a larger area within the semantic component in which the analysis of indirect questions and sentences containing them is only a special case. We will be concentrating our efforts on factive (including semi-factive) sentences, but we will have something to say at the end of the chapter about indirect questions under non-factive "question" predicates.

We begin by listing the logical consequences (entailments and presuppositions) which we have already claimed to follow from factive sentences containing indirect questions:

the factive presupposition (rule (159) in Chapter II)

the corresponding existential entailment (rule (162) in Chapter II)

the existential entailment or presupposition of knowledge (rules (174)-(176) and (175)-(176) in Chapter II) .

Immediately below we list explicitly all the logical consequences we are claiming to follow from four paradigmatical sentences containing indirect questions embedded under factive predicates. (In what follows, know is representative of all factive and semi-factive epistemic predicates, be surprised of all factive emotive predicates. And and or are logical conjunction and disjunction respectively.)

(1) John knows who won the election

ASSERTS: $(\exists x)(x \text{ won and John believes that } x \text{ won})$

(2) John doesn't know who won the election

ASSERTS: $(\exists x)(x \text{ won and } \sim \text{John believes that } x \text{ won})$

(1) and (2) PRESUPPOSE:

$(\exists x)(x \text{ won})$

$(\forall x)(x \text{ won} \longleftrightarrow \text{John believes } x \text{ won}) \text{ or } (\forall x)(x \text{ won} \rightarrow \sim \text{John believes } x \text{ won}).$

(3) John is surprised at who won

ASSERTS: $(\exists x)(x \text{ won and John expected } x \text{ not to win,}$

(4) John is not surprised at who won

ASSERTS: $(\exists x)(x \text{ won and } \sim \text{John expected } x \text{ not to win})$

(3) and (4) PRESUPPOSE:

$(\exists x)(x \text{ won})$

John knows who won

$(\forall x)(x \text{ won} \longrightarrow \sim \text{John expected } x \text{ to win}) \text{ or } (\forall x)(x \text{ won} \longrightarrow$

$\sim \text{John expected } x \text{ not to win}$

Note that in each case the "assertion" is equivalent to the corresponding existential entailment with its factive main verb broken up into non-factive and "truth" clauses (see Section 1c); the first presupposition of each pair is the factive presupposition and the last presupposition expresses the exhaustiveness constraint. The rest of this chapter is devoted to justifying these logical analyses. But before we begin to do this, I want to point out that each of (1) - (4) have an additional entailment which I didn't include in the above formal statement of the logical consequences of these sentences because in each case the extra entailment can be derived from other logical consequences which were explicitly stated. These are the "exhaustiveness entailments" as follows:

(5) Exhaustiveness entailments

(1) ENTAILS $(\forall x)(x \text{ won} \longleftrightarrow \text{John believes that } x \text{ won})$

(2) ENTAILS $(\forall x)(x \text{ won} \longrightarrow \sim \text{John believes that } x \text{ won})$

(3) ENTAILS $(\forall x)(x \text{ won} \longrightarrow \sim \text{John expected } x \text{ to win})$

(4) ENTAILS $(\forall x)(x \text{ won} \longrightarrow \sim \text{John expected } x \text{ not to win})$

Note that the exhaustiveness entailment of (1) is the same as the left disjunct of the exhaustiveness presupposition of (1)-(2), and so on; we will sometimes speak of the "positive" and "negative" disjuncts, respectively, of the exhaustiveness presupposition of a sentence, where

the positive disjunct of this presupposition is identical with the exhaustiveness entailment of the positively expressed proposition and the negative disjunct is the same as the exhaustiveness entailment of the negation of the sentence. If we assume that each exhaustiveness constraint¹ holds, along with the factive presupposition, as presuppositions of (1)-(4), we can show that the entailments claimed in (5) are valid. For example, suppose that

(6) $(\forall x)(x \text{ won} \leftrightarrow \text{John believes that } x \text{ won}),$

the exhaustiveness entailment of

(1) John knows who won,

is false, and that the two presuppositions of (1)-(2), the factive presupposition and the disjunctive exhaustiveness presupposition, are true.

Since (6), the positive disjunct of the exhaustiveness constraint on (1)-(2), is false, the negative disjunct of this constraint,

(7) $(\forall x)(x \text{ won} \rightarrow \sim \text{John believes that } x \text{ won}),$

must be true, and since $(\exists x)(x \text{ won})$, it is necessary that

(8) $(\exists x)(x \text{ won and } \sim \text{John believes that } x \text{ won}),$

the assertion of (2), is true. But since the assertion of (2) and the factive and exhaustiveness presuppositions of (1)-(2) are the only necessary conditions on the truth of (2) (we are ignoring "adequate grounds" conditions; see Section 1c), (2) is true. Therefore (6) is an entailment of (1) by the rule for testing entailments (the converse of rule (4) in Chapter 1): Since the conjunction of the negation of (6) with the presuppositions of (1) entails (2), the negation of (1), (1) entails (6). Similarly, suppose that the presuppositions of (1)-(2) hold and that (7), which we have claimed to be an entailment of (2) is false. But then both the assertion

(9) $(\exists x)(x \text{ won and John believes that } x \text{ won})$

of (1), as well as both its presuppositions, is true, so the conjunction of the negation of (7) with the presuppositions of (1)-(2) entails (1), the negation of (2). This establishes that (7) is an entailment of (2). Obviously the same holds for (3) and (4) and their respective exhaustiveness entailments. Actually, the claims that (6) and (7) are entailments of (1) and (2) respectively, as long as the disjunction of (6) and (7) is given as a presupposition of (1)-(2), are also obviously true, but I thought it necessary to justify them formally as entailments in order to provide a contrast with an alternative analysis which is apparently less complex but which turns out to be inadequate. In this alternative, the "obvious" possibility is considered: Drop the presuppositional disjunctive exhaustiveness constraint on (1)-(2) and state that (1) and (2) each entail, in addition to their respective corresponding existential entailments (their assertions), their respective existential entailments, (6) and (7). But this analysis is inconsistent since the falsity of (1) is not necessitated by the conjunction of the negation of (7) and the factive presupposition; nor can (2) be derived from the negation of (6) together with this presupposition. This is because the negation of (7), which is (9), can be true (i.e. the assertion of (1) can be true), along with the factive presupposition, without (1) being true, since there is nothing to assure us that (6), the exhaustiveness condition on (1), is true; and similarly with the negation of (6) and (2). Therefore, (6) and (7) cannot be entailments of (1) and (2) respectively. This demonstration indicates that (6) and (7), of which it is intuitively clear that they are entailed by (1) and (2) respect-

ively, can be shown to be entailments of these sentences if and only if (1) and (2) are in addition assumed to presuppose the disjunction of (6) and (7).

Section 1: The exhaustiveness constraint on sentences containing indirect questions.

1a. Exhaustiveness, "significance," and "informativeness."

Before we go on to discuss in detail the content of the exhaustiveness constraints on sentences containing indirect questions, we will pause to consider just what ground, intuitively, this condition is designed to cover. We will do this somewhat indirectly by citing one kind of apparent violation and one kind of real violation on exhaustiveness constraints.²

When it is true that

(1) John knows who won the election,
the exhaustiveness entailment tells us that all and only those who won are such that John knows that they won. In actual conversation, however, there are circumstances under which an utterance of a sentence like (1) might be appropriate without this condition being true. For instance, take

(10) John knows who was at the party;
suppose that a friend of mine is giving a party and he invites Jane Fonda and Paul Newman - and suppose that, to everyone's astonishment,

they actually show up. Then if I say to Joh, "Do you know who was at the party?" and he replies "Yes! Jane Fonda and Paul Newman!", I can, on the basis of the knowledge which John has just demonstrated that he has, truly report (10). Thus, if some parts of the answer to a question are more "significant" than others, it is possible to say that John knows the answer to that question as long as he knows the "significant" parts of the answer, whether or not he knows the rest.

Clearly, the exhaustiveness condition on sentences containing indirect questions is based on the exhaustiveness constraint on replies to direct questions, which states what must be the case in order that a reply constitute a correct and complete answer (i.e. "the" answer) to a question. It is true that John knows the answer to a given question if and only if it is true that John would be able to give a correct and complete answer to that question, should he be asked it (this is also a necessary and sufficient condition on John's being aware of, having found out, etc. the answer, and it is a presupposition of John's being surprised at the answer, finding the answer amusing, etc.). But exhaustiveness constraints are sometimes relaxed for direct question-answer pairs: A partial answer counts as "complete" in most situations as long as it gives the asker all the information he was seeking in asking his question. And in asking a question, one is not always asking for a strictly complete answer³ - if I ask

(11) Who was at the party?,

I might just want to find out who was there who is worth gossiping about. In general, when a question is asked to which a strictly complete answer would have more than one conjunct, it is often understood between the

asker and the answerer that only those conjuncts which are relatively "significant" must be mentioned in giving a reply. (Of course, the answerer and the asker may be on different wave lengths and the answerer may fail to satisfy the asker with an answer which is complete in that it includes all the "significant" conjuncts if the two do not assume the same criterion of "significance" to be appropriate to that question and the situation under which it was asked.) Clearly, the issue of just how much information or what sort of information a person is seeking when he asks a given question - which sub-conjunction of the strictly complete answer will satisfy him - is not a matter of grammar but of conversational analysis. We can keep the two areas separate by defining the exhaustiveness constraint on answers to direct questions in terms of an undefined (in the grammar) predicate of "significance": Let $\{a_1, a_2, \dots, a_q\}$ be the set of the conjuncts of the strictly complete (and correct) answer to a question Q . Suppose that the conjunction of a certain finite subset of these, $a_{i_1} + a_{i_2} + \dots + a_{i_n}$, constitutes the (relatively) "significant" part of the answer to Q . Then a reply to Q , consisting of $r_1 + r_2 + \dots + r_m$, is a "complete" or "exhaustive" answer to Q , considered to satisfy the exhaustiveness condition on answers even though it is not a strictly complete answer, if every r_j is true and $\{a_{i_1}, a_{i_2}, \dots, a_{i_n}\}$ is a subset of $\{r_1, r_2, \dots, r_m\}$.⁴ Thus we can state it as a semantic constant that an answer is "exhaustive" (although not necessarily strictly complete) if it includes all "significant" elements, and this is the case for all replies to questions no matter what circumstances they are uttered under. It is left to the conversational "component" to determine, for a given question asked in

a given situation, what the criterion of "significance" will be, on the basis of the meaning of the question and the beliefs, affects, etc. of the speaker and the addressee.

Clearly the "significance" amendment to the exhaustiveness constraint on answers to questions applies to that on sentences containing indirect questions as well. This can be accounted for by rewriting the exhaustiveness entailment of

(10) John knows who was at the party

as

(12) $(\forall x)(x\text{'s having been at the party was "significant" } \longrightarrow$

John believes that x was at the party) and $(\forall x)(\text{John believes } x \text{ was at the party } \longrightarrow x \text{ was at the party}).$

In this formulation, $(\forall x)(x \text{ was at the party})$ corresponds to $\{a_1, a_2, \dots, a_n\}$ in the last paragraph; $(\forall x)(x\text{'s having been at the party was "significant"})$ corresponds to $\{a_{i_1}, a_{i_2}, \dots, a_{i_n}\}$, and $(\forall x)(\text{John believes that } x \text{ was at the party})$ corresponds to $\{r_1, r_2, \dots, r_m\}$. Exhaustiveness entailments of other positive and negative sentences containing indirect questions should be changed accordingly. (However, for the sake of simplicity of exposition we will, once out of this subsection, ignore the "significance" amendment and state all exhaustiveness entailments and presuppositions without it. That is to say, we will assume in the coming discussion of the content of exhaustiveness conditions that all the conjuncts of the answer to any given question are equally "significant.") With this amendment, the exhaustiveness constraint on "John knows the answer" is not violated by John's not knowing any "insignificant" part of the answer.

There is a slightly different way in which exhaustiveness constraints on answers to who-questions (and on sentences containing such questions as complements) can in addition be weakened; When the answer to a question consists of a list of discrete individuals, and all these individuals are assumed to be of equal "significance" as components of the answer, the exhaustiveness constraint is sometimes weakened so as to be considered to be satisfied on answers which list most but not all of these individuals. What percentage counts as "most" is of course dependent on the question, the situation, and the magnitude of a strictly complete answer. For example, suppose that John is able to identify all but two of the people who were at a certain party. Then - assuming that the presence of these two at the party was no more "significant" than that of the other guests - if there were six hundred people at the party, one would probably feel entitled to assert

(10) John knows who was at the party.

On the other hand, this list would be unsatisfactory as an answer to "Who was at the party?", and (10), given John's limited knowledge, would be untrue, if there were only three people at the party. There are two ways we can deal with this weakening of the exhaustiveness constraint under certain circumstances: We can do as we did in the case of the "significance" amendment, and introduce a formal undefined term "most of", changing the exhaustiveness conditions on answers to who-questions and sentences containing these questions to read (in the case of (10)):

"Most of" the people who were at the party are such that John believes they were there (and all of the people who John believes to have been at the party were in fact at the party).⁵

This new quantifier "most of" would be interpreted by conversational rules to determine what percentage (from 50% to 100%?) of the equally significant components of a strictly complete answer must be present in order for the answer to be considered complete for all practical purposes. In this framework, if John could identify all but two of six hundred people who were at a certain party (10) would be true. If he could identify all but two out of three - i.e. if he could identify only one - (10) would be false.⁶ The other way of dealing with this weakening of the exhaustiveness constraint would be to refrain from amending the constraints, so that the two out of six hundred party guests whom John cannot identify constitute counter-examples to the exhaustiveness entailment of (10) and to the constraint on answers to

(11) Who was at the party?

In this case (10) would not be true unless John knew of everybody who was at the party, without exception, that they were there. But some extragrammatical rule would stipulate that there are situations in which it is appropriate to assert (10) even if it is not exactly true; certainly this would be only one of many types of exaggerations which it is possible for someone to utter without strictly believing them to be true and yet without being insincere. It is a fact about usage that in some situations it is more appropriate to exaggerate than in

others; the utterance of (10) as an exaggeration, with reference to a party which six hundred people attended, is one of these.

To return to the "significance" amendment we have made on the rule generating exhaustiveness constraints on answers to questions and on sentences containing indirect questions: The need for such an amendment becomes more apparent when we consider questions whose wh-words are derived from NP's which, rather than referring to individual people or objects, are comprised of prepositional phrases or underlying verb phrases. For example, the exhaustiveness-constraint paradigm as we originally stated it certainly would not apply to:

(13) Mary knows what John was doing last night.

That is, (13) cannot have as a truth-condition the proposition that Mary knows of everything John did last night: For instance, we would want to say that (13) is true if Mary is aware of everything that John did last night except for the fact that he scratched his nose at 10:45 p.m., unless John's scratching his nose had some unusual significance on this occasion. Clearly, then an absolutely strict exhaustiveness condition is not placed upon (13), since actions, unlike people or things, are continuous rather than discrete. Thus the set of "things" that John was doing last night is effectively infinite, making it physically (if not logically) impossible for Mary to ever reproduce this set in her words or her thoughts. If we suppose that the exhaustiveness constraint on (13) applies literally, then not only must Mary know that John scratched his nose last night in order for (13) to be true, but she must also know that John lifted his arm last night (which he pre-

sumably must have done in order to scratch his nose). If he had to move his hand a distance of 18 inches to reach his nose, then some of the other things John might have been doing last night were: moving his hand a distance of 1, 7 and 15 inches, moving his elbow a distance of 9 inches, moving his fingernail a space of one-half inch over his nose, etc. Clearly the list is potentially infinite. For this reason, we must insist (as a truth-condition on (13)) that Mary's reply (spoken or hypothetical) to the question "What was John doing last night?" be exhaustive not with respect to the set of activities which John actually performed last night (since this set is infinite), but with respect to a finite subset of John's activities which the speaker of (13) is referring to without actually naming them. A "significance" amendment must therefore be formulated for the exhaustiveness entailment of (13) which indicates that this entailment is satisfied if all of John's "significant" activities of last night are such that Mary knows about them (that is, the entailment is satisfied if this is true and it is in addition true that Mary has no false beliefs about what John was doing).

Thus, exhaustiveness entailments on answers to direct questions (and on sentences containing indirect questions) are not violated by the omission from a reply of elements which are judged to be relatively "insignificant" components of a strictly complete answer. Clearly this applies to indirect questions embedded under emotive predicates as well as to those with epistemic main verbs: If Jane Fonda and Paul Newman came to my friend's party, and John was, as he well might be, amazed that each of them was there, this could well be grounds for the truth

of (i.e. the satisfaction of the exhaustiveness entailment of)

(14) John was amazed at who was at the party,
even if there were others at the party whose presence there did not
particularly amaze John, as long as their presence was not "signifi-
cant."

There is another amendment which must be made on the exhaustive-
ness constraints as truth-conditions, in order to account for a type
of violation of them which does constitute a counterexample and which
thereby renders an answer incomplete or a sentence containing an indi-
rect question under an epistemic predicate untrue. The satisfaction of
the exhaustiveness entailment of

(10) John knows who was at the party.
as it now stands, implies that John would be able to specify each indi-
vidual of whom it is true (and "significant") that he was at the party.
But the question arises of how closely John must be able to identify
each person in order for it to be true that John knows that that person
was at the party. Or, from the point of view of direct questions and
answers, how much information does a reply to

(11) Who was at the party?
have to provide about each of the people who was there (assuming - as we
will from this point on - that no one's presence there was more "signifi-
cant" than anyone else's) in order to satisfy the asker? This, of
course, depends on how much the asker already knew when he asked his
question, and on how much more he was seeking to discover by means of
asking it. We will not go deeply into this question here; for the pur-

poses of the formal representation we will assume that the exhaustiveness constraint on answers to direct questions is modified so as to include a stipulation that each component of the answer is "informative" - that is, it serves to identify the individual or thing, or pinpoint the time or place, to the satisfaction of the asker. (However, this new term "informative," unlike "significant," is merely a device to take the place of a set of rules which I do not intend to attempt to formulate explicitly. The use of this "undefined" term should not be taken as a claim that the analysis of "informativeness" constraints on answers is a task which is outside the realm of semantics. On the contrary, see footnote 7.) For example, the answer to a who-question such as (11) need not always contain a separate definite description for or proper name of every individual who was at the party; a reply to (11) of "All the department members and their respective spouses" will probably (assuming it is a true and complete answer) satisfy the asker, since given this description of the set of people who came he will ordinarily be able to ascertain their identities more exactly, if he wishes. But a reply of "Everyone who was invited" will not satisfy the asker of (11) unless he knows just who was invited. If he does not, this reply might not provide him with any more information than he already has about who came to the party. (Similarly, the uttering of such a reply does not ordinarily constitute evidence that the replier knows the answer to the question.) Whether or not an asker is satisfied by a reply (assuming the reply is "complete" or "exhaustive" as well as true) thus depends (as in the above examples) on how much the asker already knows. It depends also on how much the asker cares to know: Suppose that the doorbell rings at my

house and someone gets up and goes to answer it, returning after a few seconds. If I then ask him, "Who was at the door?" and he answers "A salesman," I will normally consider him to have answered this question to my satisfaction, although no particular person has been uniquely identified. In this situation, in which there is only one component to the complete answer, the reply need not even contain a definite description of the person who was at the door - an indefinite NP is a sufficiently informative answer. (On the other hand, if the reply to my question had merely been "A man," I would normally not take this to be an informative enough answer.)

The "informativeness" constraint applies the same way to answers to when- and where-questions, which consist most often of a single component. For example, if Mary's husband is a travelling businessman, and we ask Mary where her husband is, we will probably accept her reply of "He's in Japan" as a perfectly good answer to our question, assuming that we don't particularly care exactly where in Japan he is. On the other hand, suppose that Mary expects her husband home at six one evening and he doesn't show up until four the next morning; when she asks him "Where were you last night?" she expects a more explicit reply than "I was in the United States." In this case, although he has answered the question truly, he has probably not answered it sufficiently informatively to satisfy the asker; likewise, although it is true that there is a place such that Mary knows that her husband was in that place last night, it would not (irrespective of any exhaustiveness condition) be appropriate to assert that "Mary knows where her husband was last night."

In our discussion of exhaustiveness constraints on sentences containing indirect questions in the coming sections, when we speak of someone's knowing of a given individual (or place, etc.) that that individual is a component of the answer to a question, it is to be understood that we mean that he would be able to identify that individual "informatively" as a component of the answer - that is, having taken note of the necessity of including an "informativeness" stipulation on exhaustiveness constraints in a complete account of the truth-conditions on sentences containing indirect questions, we will from now on be "factoring out" the problem of "informativeness" from our consideration.⁷

lb. Baker's interpretation of sentences containing indirect questions.

Baker (1968) proposes a convention for interpreting sentences containing indirect questions as follows (p. 50):

(15) John knows whether or not Bill won the election
is interpreted as

(16) Either John knows that Bill won the election or John
knows that Bill didn't win the election,

and

(1) John knows who won the election
is first interpreted as

(17) $(\forall x)$ (John knows whether or not x won the election),
and then expanded (by the rule which derived (16) from (15)) to

(18) $(\forall x)$ (John knows that x won the election or John knows
that x didn't win the election).

Baker's arguments in favor of the analysis of (1) as (18) are that it accounts for the exhaustiveness constraint on the truth of (1), and that it captures the fact that know has basically the same meaning when it takes indirect questions as complements as when it takes that-clauses. I concede the latter point; I too have analyzed (1) in such a way as to bring out the similarity of wh-complements to that-clauses under the same predicates. But I disagree that (18) is a correct formulation of the exhaustiveness condition on (1). I will show that (18) is too strong to be an entailment of (1), and that, furthermore, worse problems crop up when we attempt to apply Baker's interpretive convention to other sorts of factive sentences containing indirect questions, which are not absolutely parallel in meaning to (1).

Before we begin, the reader should recall that (18) is, by virtue of its form, logically equivalent to

- (19) $(\forall x)(x \text{ won the election} \longrightarrow \text{John knows that } x \text{ won the election})$
and $(\forall x)(\sim x \text{ won the election} \longrightarrow \text{John knows that } \sim x \text{ won the election})$

(this equivalence was justified in footnote 15 of Chapter II). Thus although we will be talking about Baker's interpretation (18) of (1), our arguments as to the meaning of (18) and how it is different from the meaning of (1) will often follow indirectly from (18) through (19).

Baker regards (18) as a paraphrase of (1): If this were the case, (1) and (18) would entail each other. It is perhaps a quibble to point out that (18) does not entail (1) - this is obviously so since (1) has the factive presupposition $(\exists x)(x \text{ won the election})$, and has zero

truth-value if no one won, but (18) does not have "someone won" as a necessary condition on its truth: If no one won, (18) is true if John knows of everybody ("all x") that they did not win. But of course, this difficulty could be overcome by analyzing (1) as the conjunction of (18) and $(\exists x)(x \text{ won the election})$, so the real issue is whether or not (1) entails (18). I say it does not: Consider the two truth conditions on (18):

(20) $(\forall x)(x \text{ won the election} \longrightarrow \text{John knows that } x \text{ won the election})$.

(21) $(\forall x)(\sim x \text{ won the election} \longrightarrow \text{John knows that } \sim x \text{ won the election})$.

Clearly, (20) is a necessary condition of the truth of (1). But (21) is not; "all x" is just too strong. It makes no sense to say that John knows of a certain individual that he didn't win the election if John never heard of that individual; as we pointed out in Chapter II, Section 2b.i, the subject of a referentially ambiguous sentence expressing a belief or desire must consider the noun phrase in the ambiguous context of that sentence to "exist" or "have referents" if the sentence is to be true on any reading (except on readings on which a crucial NP is not meant to refer because it is a non-specifically interpreted indefinite). But surely John cannot consider someone to "exist" whom he has never heard of. Thus (18) implies that "all x" are such that John knows something about each of them (namely, either that they won or that they didn't win the election), which is surely not a part of the meaning of (1); for (1) to be true the only people John need know anything about are the people who won.⁸ We can attempt to modify (18) so as to make it an entailment of (1) by replacing it with (20) plus a

stipulation that John is of the (correct) opinion that anyone who is not among those whom he knows for sure to have won the election did not win the election. If (1) is true, (20) is true, and John has this correct opinion, then we must concede (21) to be true as well. The idea is that if John thinks he knows who won - and he's right - then we can make a case for anyone who is not among those known by John as a winner being such that John knows he is not a winner. (For example, if John knows who won and he has the correct opinion that no one else won, I can ask him if my uncle from Brooklyn won, and he will correctly answer "no." In this situation, in which it is felt that John has the hypothetical ability to identify all non-winners as non-winners, it does not seem too outlandish to say that John knows of my uncle from Brooklyn that he did not win, even if John never heard of my uncle from Brooklyn.) Thus although know does not ordinarily allow not-hopping from the upper sentence to the complement, the inference from the former to the latter is valid when the complement to know is an indirect question, if some extra premises are added. However, this is not the case with many other factive epistemic predicates: For example, if

(22) John found out who won the election

is true, it does not follow that it is true of any person who is not among those about whom John found out that they won that John found out that that person didn't win. (Even if John can correctly answer my question as to whether my uncle from Brooklyn was a winner, so that we can give him credit for knowing that that person did not win, there is not necessarily any point in time at which any event occurred consisting of John's finding out that he did not win.)

Although the foregoing shows that

- (21) $(\forall x)(\sim x \text{ won the election} \longrightarrow \text{John knows that } \sim x \text{ won the election})$

is not a condition on the truth of

- (1) John knows who won the election

(so that Baker's paraphrase, which includes (21) as conjunct when it is expressed as (19), is too strong), it is also the case that

- (20) $(\forall x)(x \text{ won the election} \longrightarrow \text{John knows that } x \text{ won the election})$

(the other conjunct of (19)) alone does not express the exhaustiveness entailment on (1). That is, there are two kinds of situations - other than one in which there was no winner - in which (1) would fail to be true. The first is a situation in which not all of the winners are known to John to be winners; (20) as an entailment of (1) provides that (1) cannot be true under such circumstances. But (1) is also untrue in a situation in which (20) holds but there are individuals of whom John falsely believes that they are winners. This, rather than a situation in which John does not know of some non-winners that they did not win, is the second kind of circumstance under which (1) will fail. So instead of (21) we have

- (23) $(\forall x)(\sim x \text{ won the election} \longrightarrow \sim \text{John believes that } x \text{ won the election}).$

Note that it is impossible to express this conjunct of the exhaustiveness entailment of (1) in terms of the factive predicate know itself. Rather we must break up the notion of "knowing" into that of "truly believing" or "correctly opining." We can regard the exhaustiveness

entailment of (1) as expressing

- (24) John has all possible true opinions and no false opinions
as to who won the election;

if (20) is violated, there is someone such that John is lacking a true opinion that he won, and if (23) is violated, there is someone such that John has a false opinion that he won. If we analyze knowledge as "correct opinion" (see the next Section), we can write (20) as

- (25) $(\forall x)(x \text{ won the election} \longrightarrow \text{John believes that } x \text{ won the election}).$

so that the conjunction of (20) and (23) can be expressed as

- (26) $(\forall x)(x \text{ won the election} \longleftrightarrow \text{John believes that } x \text{ won the election}).$

(We can assume that $(\sim x \text{ won} \longrightarrow \sim \text{John believes that } x \text{ won}) = (\text{John believes that } x \text{ won} \longrightarrow x \text{ won})$, since both formulae represent sentences with the same presuppositions, namely the single presupposition that the NP filling the x slot has a referent.) (26) is, of course, the exhaustiveness entailment of (1) as we originally formulated it.

Another problem with Baker's interpretation for sentences containing indirect questions is that it does not account for the exhaustiveness constraint which obviously holds on such sentences when the upper sentence is "negative" (as is (2)) as well as when it is "positive" (as in (1)). That is, in order for

- (2) John doesn't know who won the election,
i.e. "It is false that John knows who won the election," to be true,

it must be the case that John does not know of any of the winners (at least not any of the "significant" winners) that they won. There would be two possible ways of attempting to adapt Baker's convention so as to apply to (2), and neither produces a paraphrase of (2). First, we could treat "not know" as a unit (as if it were a negative lexical item like forget), so that (2) would be represented as

(27) $(\forall x)(\text{John doesn't know that } x \text{ won or John doesn't know that } x \text{ didn't win}).$

But (27) is equivalent to

(28) $\sim (\exists x)(\text{John knows that } x \text{ won and John knows that } x \text{ didn't win}),$ and (28) is a proposition which is true regardless of whether or not John has any opinions, correct or incorrect, as to who won: obviously there is no x such that the quantified statement of (28) is true, for if there were this x would be both such that he won and such that he didn't win. Since (28) is trivially true, it is not a paraphrase of (2). The other possibility for adapting Baker's convention to a negative case would be to suppose that since

(18) $(\forall x)(\text{John knows that } x \text{ won or John knows that } x \text{ didn't win}),$ Baker's representation for (1), is meant to be a paraphrase of (1), the corresponding paraphrase of (2), which is the negation of (1), would be the negation of (18):

(29) $\sim (\forall x)(\text{John knows that } x \text{ won or John knows that } x \text{ didn't win}) \equiv (\exists x)(\sim \text{John knows that } x \text{ won and } \sim \text{John knows that } x \text{ didn't win}).$

But since we showed that (18) is not a paraphrase of (1), we would not expect (29) to be a paraphrase of (2), and of course it is not:

(29) is trivially false for the same reason that (28) is trivially true: if there were an x which satisfied the quantified formula of (29), then, since know is factive, x would have to have both won and not won.

Baker did not of course intend his interpretive convention to apply to sentences containing indirect questions under non-factive "question" verbs which do not allow that-complements. He also did not intend it to apply to such sentences having emotive factives as their main predicates, since he does not consider such sentences grammatical (see Chapter II, Section 1a). Since we do consider these grammatical, we may observe that

(30) $(\forall x)(\text{John is surprised that } x \text{ won or John is surprised that } x \text{ didn't win})$

is not an accurate interpretation of

(3) John is surprised at who won;

surely (3) does not entail

(31) $(\forall x)(\sim x \text{ won} \longrightarrow \text{John is surprised that } x \text{ didn't win}),$

since (3) could be true and (31) untrue if John is not surprised that my uncle from Brooklyn, who was not even running, and whose existence is possibly unknown to John, did not win. ((31) is rather an entailment of "John is surprised at who didn't win.") The reasoning is the same as in the case of (1), but here it would be even more difficult to make a case for it being a truth-condition on (3) that John expected all those who turned out to be losers to win. We will argue in Section 1d that it is also not the case that

(32) $(\forall x)(x \text{ won} \rightarrow \text{John is surprised that } x \text{ won})$
is an entailment of (3).

The situation is just as bad for Baker's projected representation of

(33) John predicted who would win the election.

Of course, Baker's convention would fail as a paraphrase of (33) for the same reason it failed in the other cases - here it would imply that in order for (33) to be true John must have made predictions about everybody as to whether they would win or not. But it fails in a different respect as well: Since predict is factive with respect to wh, (23) has a factive presupposition and a factive entailment, so that (33) entails that John was right about everyone about whom he made a predication. But this would not be reflected in Baker's interpretation: since predict is a wh-factive - and thus not factive with respect to that - the result of applying this convention to (33) would be a proposition which lacks the factive presupposition and entailment, and which merely asserts that John made predictions about who would win, without claiming that any of these was necessarily correct.

1c: On the need for non-factive elements in the analysis of factive sentences containing indirect questions.

In his discussion of answers to direct questions, Baker (Chapter III) points out that a correct and complete answer to a question must be "the truth, the whole truth, and nothing but the truth." In his representation of

(1) John knows who won the election,

he attempts to express the analogous constraint on sentences containing embedded questions, since the conjunct which states that

(20) $(\forall x) (x \text{ won} \longrightarrow \text{John knows that } x \text{ won})$

says that in order for (1) to be true, John must know "the whole truth" about who won the election; and it is the notion of "nothing but the truth" that Baker means to capture with the conjunct which states

(21) $(\forall x) (\sim x \text{ won} \longrightarrow \text{John knows that } \sim x \text{ won}).$

But, as we pointed out, the crucial condition, other than (20), on (1) is not that John know nothing but the truth - since the factivity of know makes it impossible for someone to "know" anything which is not "the truth" - but rather, that John believe nothing but the truth about who won the election. That is, the "nothing but the truth" part of the exhaustiveness entailment of (1) cannot be expressed in terms of the factive predicate know but instead must be expressed in terms of a non-factive predicate like believe. In general, in order to express the exhaustiveness conditions on sentences containing indirect questions under factive verbs, we must introduce a non-factive elements into the representation.

However, we want to avoid the presence of the lexical verb believe in the formal representation of the meaning of (1),⁹ since this would suggest an analysis of believe as sort of the "non-factive version" of know, implying that the only semantic distinction between the two is the feature [\pm factive]. But know is not merely a composite of believe plus "truth;" various philosophers have argued that the meaning of "knowledge" is not merely "true belief," but "justified true belief." In order for John to "know" a proposition, from this point of view, not only

must the proposition be true and John believe it, but John must have "adequate grounds" for his belief of the proposition. The idea is that it might be an accident that "John believes P" coincides with "P is true," in which case we cannot really say that John knows P. There are other problems, too, in representing the meaning of know in terms of the lexical predicate believe plus the semantic feature [+factive] - how strongly must someone believe something in order to be said to "know" it? How "sure" must he be of what he believes? It seems to me that it is only one sense, one shading of the meaning of "believe" or "believe on adequate grounds" which coincides with the "non-factive aspect" of the meaning of know as it is used in a sentence like (1) - the sense we tried to capture in Chapter II, Section 1b, with our use of the expression "to have an opinion as to the answer."

Rather than try to specify just what sense of the lexical predicate believe is involved in our representation of the truth-conditions on (1), we will assume that the "believe" which appears in this representation is not a lexical predicate but a universal non-factive epistemic pro-verb which appears also in the semantic representation of a sentence containing any epistemic predicate. We assume that the meanings of all epistemic predicates, factive and non-factive, consist of embellishments on this epistemic pro-verb. Some of these embellishments are of a sort already descriptably - e.g. in terms of factivity, or causality (which is an aspect of the meaning of teach), or inchoativeness (as in discover). We will need other semantic and stylistic features to give a full account of the meaning of each epistemic predicate (presumably it would be a stylis-

tic, rather than a semantic, feature which would distinguish remember from recall, discover from find out, etc.); these will not concern us here. The substance of our present claim is merely that the "believe" which appears in our statement of the logical consequences of (1) and (2) is not the lexical verb believe but rather the universal epistemic non-factive pro-verb; we must make such a claim in order to forestall objections that the verb know is semantically more than simply a "factive version" of the verb believe. We are, however, retaining "believe" in these representations for the purposes of exposition, on the grounds that believe comes closest among English predicates to expressing the meaning of this stripped-down epistemic pro-verb; also, we will find it useful to appeal to intuitive inferences from what John "believes" - in this special sense of "having an opinion" - to what John knows.

Our argument that, since it is necessary to introduce a non-factive element into the semantic representation (in terms of logical consequences) of (1), we must postulate the existence of an epistemic "pro-verb" because no lexical predicate corresponds exactly to the non-factive part of the meaning of know, applies also to the other epistemic factive predicates, like find out and be aware. That is, if we assumed the "believe" which appears in our representation of the exhaustiveness condition on (1) to be a lexical verb, we would have to assume as well that each epistemic factive predicate can be paired with a corresponding non-factive such that the only semantic distinction between the two members of each pair is the feature [\pm factive]; clearly any attempt at such a pairing would be highly artificial. A more viable

alternative to my framework would be to suppose that a set of non-factive pro-verbs exist, corresponding to each epistemic factive predicate, which could be expressed as [$\begin{smallmatrix} \text{find out} \\ \text{-factive} \end{smallmatrix}$], [$\begin{smallmatrix} \text{be aware} \\ \text{-factive} \end{smallmatrix}$], etc., and that these are what appear in the representations of the logical consequences of sentences (such as "John found out who won") which are analogous to (1). At this point I see little evidence bearing on a choice between my hypothesis and this alternative, other than the greater complexity of the latter.

Our claim that factive epistemic predicates should be analyzed as a combination of a universal epistemic pro-verb, plus the feature [+factive], plus, in each case, various other features and "embellishments" which we do not specify, is similar to claims made by Baker (1968) and Fillmore (1971a and b) which I will mention briefly here. Baker suggests (p. 107) that a large class of the predicates which take indirect questions can be analyzed in terms of the verb know - thus

discover = come to know,
remember = $\left\{ \begin{array}{l} \text{come to know again} \\ \text{continue to know,} \end{array} \right.$
teach = cause to come to know,
etc.

This is similar to the possibility, which I rejected, of analyzing know in terms of (the lexical item) believe, and the other epistemic factives in terms of corresponding lexical non-factives, and it is inadequate for a similar reason: teach, for example, does not mean exactly the same thing as "cause to come to know," nor are the two expressions used under

exactly the same circumstances. Also, Baker analyzes learn (as well as a number of other verbs) as come to know; how are these to be semantically distinguished from discover? Fillmore's system of analyzing predicates in the context of the arguments (subject, objects and complement) which they take is, unlike Baker's, consistent with mine. For example, in his account of one sense of the verb blame (the non-verbal sense), a sentence in which someone blames someone else for a situation "means" (i.e. asserts, as opposed to presupposes) that the blamer "thinks" that the blamee is "responsible" for the situation (1971a, p. 285). Fillmore capitalizes "THINK" and "RESPONSIBLE" in his exposition to emphasize that these are not lexical predicates but grammatical operators; his THINK is approximately equivalent to the "believe" in my statement of the exhaustiveness constraint on (1) and (2). A question which neither Fillmore nor I address is how many such pro-forms will be necessary in an account of all the semantic aspects of grammar, and how these will be chosen.

Analogously to the case of (1), I have stated the exhaustiveness entailment of

(3) John is surprised at who won the election

in terms of the non-factive predicate "expect," trading on the similarity of "be surprised that P" and "have expected that not-P, although P." But it is not clear whether there can be a pro-form whose meaning is supposed to represent what is common to the non-factive parts of the meaning of all the factive emotives. Perhaps a pro-verb which means approximately "would be natural" could serve this purpose for most of the "adversative" (see Appendix 2) factive emotives, e.g. be odd and be fantastic. My con-

jecture is that there are several such pro-verbs for the factive emotives, so that the expression "expected not" in the statement of the logical consequences of (3) should be considered to stand for whichever of the emotive pro-verbs forms the basis for the non-factive aspect of the meaning of be surprised.

ld. Justification of the content of the proposed exhaustiveness constraints on paradigmatical factive sentences containing indirect questions.

We begin with the exhaustiveness presupposition of

(1) John knows who won the election

(2) John doesn't know who won the election,

which we restate as

(34) $(\forall x)(x \text{ won} \leftrightarrow \text{John believes that } x \text{ won}) \text{ or } (\forall x)(x \text{ won} \rightarrow \sim \text{John believes that } x \text{ won}).$

In what follows, we will refer to the "positive" and "negative" disjuncts of (34), which are the exhaustiveness entailments of (1) and (2) respectively.

It is clear that the conditional on the positive disjunct of (34) must go both ways; if there are people whom John falsely believes to have won, then, even if John also believes of all the real winners that they won, (1) cannot be true. The condition is the same as the one on the answer to the direct question "Who won?", which must be not only "the whole truth" but "nothing but the truth" as well. Of course, in the case of (1) it would be quite unusual for John to think that there

were more winners than there actually were (and so render (1) untrue because the conditional on the first disjunct of (34) is valid in only one direction), but consider

(35) Who was at the party?

If I ask (35) of John, and he replies that the people at the party were just those who were invited - let's assume that we both know just who was invited, so this counts as an "informative" answer - then even if it is the case that not all of those who were invited actually showed up, as long as no one was there who was not invited, John has succeeded in answering my question completely; he has, in effect, told me of everyone who was at the party that they were there. But he not, in this situation, given me the correct answer to my question (35), since part of his answer was incorrect (i.e. he said of some people who were not there that they were there). By the same token, we would not say in this situation that

(36) John knows who was at the party

is true. And by making the entailment of the positive disjunct of the exhaustiveness entailment of (36) read right-to-left as well as left-to-right, we capture the fact that such a situation constitutes a violation of the truth-conditions on (36).

The positive disjunct of (34) says that John has true opinions about all those who won that they won, and no false opinions about those who did not win. (It does not, like Baker's interpretation of (1), claim that for (1) to be true John must have true opinions about about everyone as to whether or not they won.) The negative disjunct

of (34) - which is a truth-condition on (2) - says that John has no true opinions about those who won. But unlike the positive disjunct, it does not specify any conditions on John's opinions of those who did not win, as to whether or not they won. That is, the entailment of the negative disjunct of (34) reads only left-to-right, not right-to-left. Clearly, we need the left-to-right conditional; if it is not true that John believes of none of the winners that they won - i.e. if there is a winner who John believes (and therefore knows) to have won - then it is not strictly true that John doesn't know who won¹⁰ (although it is of course untrue as well that John knows who won if he doesn't know of all the winners that they won).¹¹ But a right-to-left conditional is not necessary - that is, (2) does not entail

(37) $(\forall x) (\sim \text{John believes that } x \text{ won} \longrightarrow x \text{ won})$

$\equiv (\forall x) (\sim x \text{ won} \longrightarrow \text{John believes that } x \text{ won}).$

In order for (2) to be true, it is not necessary for him to lack true opinions about everybody - only about the people who won. It surely does not contradict (2) if John has a true opinion of my uncle from Brooklyn that he did not win; (2) is also obviously compatible with John's having no opinions about my uncle from Brooklyn who did not, in fact, win. Notice, by the way, that the negative disjunct of (34) says of John that it is false that he believes that x won, for each x who in fact won. This means that for each x who won, either John disbelieves that x won or John has no opinion as to whether or not x won. This is not the same as saying that (2) entails

(38) $(\forall x)(x \text{ won} \longrightarrow \text{John believes that } \sim x \text{ won});$

(38) is a stronger condition than the negative disjunct of (34). That is, John's not knowing who won is true whenever John lacks an opinion of each person who won that he won; it does not matter for any winner whether John lacks this opinion that that person won because he holds the contrary opinion that that person lost, or whether he simply lacks any opinion, correct or incorrect, as to whether that person won.

We move on now to the exhaustiveness constraint on

(3) John is surprised at who won

(4) John is not surprised at who won,

which we restate as

(39) $(\forall x)(x \text{ won} \longrightarrow \sim \text{John expected } x \text{ to win}) \text{ or } (\forall x)(x \text{ won} \longrightarrow \sim \text{John expected } x \text{ not to win}).$

Recall that "have expected not" represents the purely assertive (as opposed to the presuppositional) aspect of the emotive predicate be surprised; this predicate is represented the same way when it takes declarative complements:

(40) John is surprised that Bill won

asserts

(41) John expected Bill not to win

and presupposes "Bill won."¹² Later, we will show that in order for (3) to be true, there must have been at least one winner who was such that John expected him not to win (this is the "assertion" of (3));

however, the exhaustiveness entailment on (3) is stated not in terms of "expect not" but of "not expect." That is, the positive disjunct of (39) does not require everyone who won to be such that John is surprised that they won - it does not require

(42) $(\forall x)(x \text{ won} \longrightarrow \text{John expected } x \text{ not to win})$

(although the truth of (3) does require, as we just pointed out

(43) $(\exists x)(x \text{ won and John expected } x \text{ not to win}).)$

This is an "intuitive" judgment on my part; for those who do not agree the rule for generating exhaustiveness constraints can be modified without doing violence to my general thesis. It seems to me that if there were a certain number of winners of the election in question, and we suppose that at least one of these was such that John expected him not to win (i.e. (43) is true), then as long as none of the winners were such that John expected them to win (i.e. the positive disjunct of (39) is true), we can assert (3) truly. That is, I take (3) to mean not "The people who won were such that John was surprised that they won" but rather "Of the people who won those who John had expectations about as to whether or not they would win were such that John was surprised that they won - i.e. he expected them not to win." If John had expectations about most of the people who turned out to be winners, to the effect that they would lose, then the fact that he did not have any expectations, positive or negative, about the rest of those who turned out to be winners does not keep him from being surprised at who won. He would, in this situation, only be prevented from being surprised (through a violation of the exhaustiveness entailment on (3)) if one of those winners, who John did not expect to lose, was such that John

expected him to win. In this case John could be neither surprised nor not surprised at who won, since some of the winners were such that John was surprised that they won (he expected them to lose) and others were such that John was not surprised that they won (since he expected them to win). Thus the exhaustiveness entailment of (3) should require merely that John had no expectations about any of those who turned out to be winners to the effect that they would win; it is not a truth-condition on (3) that necessarily John had expectations about all of those who turned out to be winners to the effect that they would lose.

This establishes that the positive disjunct of (39) is a necessary condition on (3), as I interpret (3). It should be clear that the converse of this conditional,

$$(44) \quad (\forall x) (\sim x \text{ won} \longrightarrow \text{John expected } x \text{ to win})$$

$$\equiv (\forall x) (\sim \text{John expected } x \text{ to win} \longrightarrow x \text{ won}),$$

is not a truth-condition on (3). For example, (3) is certainly compatible with John's not having expected my uncle from Brooklyn (who wasn't even running, and whom John possibly never heard of) to win, when my uncle, predictably, did not win; i.e. the fact that John is not surprised that my uncle didn't win (since John probably had no expectations as to whether my uncle would win or not, my uncle's not winning could not be surprising to John) is not inconsistent with the fact that John is surprised at who did win. In this way, the positive disjunct of (39) is more like the exhaustiveness entailment on (2) than that on (1), where the conditional goes both ways. We can parallel John's having a "positive belief" about someone - i.e. an opinion to the effect that that person

won - with John's having had a "positive expectation" about someone - to the effect that that person would win; likewise with "negative beliefs" and "negative expectations" about whether someone won or would win. Then:

For (1) to be true, John must have positive beliefs about all those who won, and no positive belief about anyone who didn't win.

For (2) to be true, John must have no positive belief about anyone who won (regardless of which, if any, kinds of beliefs he has about those who didn't win).

For (3) to be true, John must have had no positive expectation about anyone who won (regardless of which, if any, kinds of expectations he had about those who didn't win).

By rejecting (44) as a condition on (3), we are saying that it is not necessary, in order for (3) to be true, for John to have had positive expectations about all those who did not win - not necessary for him to have expected everyone to be a winner who in fact turned out to be a loser.¹³ Later, in the section on "assertions" (corresponding existential entailments) of factive sentences containing indirect questions, we will show that it is neither a necessary nor a sufficient condition on (3) that John had positive expectations about any of the people who did not in fact win.

Let us now consider the negative disjunct of (39),

(45) $(\forall x) (x \text{ won} \rightarrow \sim \text{John expected } x \text{ not to win}),$

which is a necessary condition on

(4) John is not surprised at who won.

(45) says that all the winners are such that John did not expect them to lose. This is a weaker condition than one which says that all the winners are such that John expected them to win, since (45) is true in a situation in which some or all of the winners were such that John had no expectations about whether they would win or lose, and (4) is also true (assuming the factive presupposition is met) in this situation: Who the winners were would not surprise John if he had no expectations as to whether those people would win or lose. Note that the conditional in (45), like those of the exhaustiveness entailments of (2) and (3), goes only from left-to-right; this means that the truth of (4), like the truth of (3), depends in no way on which, if any, kinds of expectations John had about the people who turned out to be losers. In terms of "positive" and "negative" expectations, we can state that:

For (4) to be true, John must have had no negative expectations about anyone who won.

Thus the only kind of counterexample to the exhaustiveness entailment on (4) would be a situation in which one of the winners was such that John expected him to lose - then John is surprised that that person won, so it cannot be the case that John is not surprised at who won.

Section 2: The "assertions" of factive sentences containing indirect questions.

The technique of analyzing sentences into (one) assertion and (possibly several) presuppositions is very helpful to the investigator

and is often encountered in contemporary linguistic literature (e.g. Lakoff (1971c), Langendoen and Savin (1971), Horn (1969), and Fillmore (1971a and b), in which the "assertion" is referred to as the "MEANING" of the sentence). I am not aware, however, of any explicit statement of the explanatory implications, if any, of this sort of terminology (i.e. what claims are being made about the human linguistic apparatus by an assumption that sentences are, at some stage of their derivation or interpretation, separated into these two distinct levels?). Nor have I seen a definition of "assertion" - clearly the "assertion" of a sentence must be an entailment of that sentence (or of the proposition it expresses), but equally clearly we cannot label just any entailment of a sentence as "an assertion" or "the assertion" of the sentence, as opposed to its presuppositions. For instance, "I wrote a paper on commutative groups" entails "I wrote a paper on algebra," and also "I wrote a paper on mathematics" and "There exists a paper of mine," etc.; none of these are what we would want to call the "assertion" of this sentence. Perhaps a loose characterization might be that "the assertion" is that entailment of a sentence which expresses the meaning of the sentence without having any of its presuppositions - actually, this is modified in practice so that the assertion is allowed to retain some of the presuppositions of the sentence in order to focus on the others - for example, the assertion of "John accused Bill of x," which is "John said that Bill did x" (Fillmore (1971a)), lacks the presupposition that John judges x a "bad" thing to do, but it retains the presupposition that "John" and "Bill" have referents.

My statement of the "assertions" of (1) - (4), however, does not fit this characterization, and it is different in this respect from similar assertion-presupposition analyses by other writers: Under the assumption that the assertion of a sentence is "stripped" of the relevant presuppositions of that sentence (that is, the assertion has no presuppositions excepting possibly some of a sort not under investigation, e.g. if we are studying presuppositions triggered by verbs the assertion may still contain presuppositions triggered by definite NP's), it follows that when the presuppositions under discussion are those triggered by the main predicate, the main predicate of the assertion must be one which means approximately the same thing as the main predicate of the sentence but which does not trigger the presuppositions triggered by that predicate.¹⁴ For example, accuse in a sentence corresponds to claim in its assertion (in Langendoen and Savin (1971)), since claim, unlike accuse, does not presuppose that the action described in its predicate is objectionable. We have already spoken of the inappropriateness of an assumption that each presupposition-triggering predicate corresponds to a predicate which differs from it only by being non-presupposition-triggering in the special case of predicates which trigger the factive presupposition; this assumption is probably untenable in the general case for similar reasons. Rather, we should assume, as Fillmore does, that the assertions and presuppositions both are constructed out of non-lexical elements which are universal in the sense that all predicates can be built up by "embellishing" them. Such elements (I have proposed one, "believe" (as opposed to believe); Fillmore (1971a) proposes several: THINK, SAY, GOOD, BAD, RESPONSIBLE,

etc.) are themselves non-presupposition-triggering. However, my statement of the "assertions" of (1)-(4) does not conform to this convention. As I wrote these conditions, they contain non-presupposition-triggering elements - represented by non-factive verbs - as main predicates: e.g.

(1) John knows who won the election

is said to assert

(46) $(\exists x)(x \text{ won and John believes that } x \text{ won})$.

But because of the "x won" clause in (46), (46) is equivalent to

(47) $(\exists x)(\text{John knows that } x \text{ won})$,

the corresponding existential entailment of (1). That is, I argued that the "x won" clause is part of the assertion (rather than of the factive or any other presupposition) of (1): the "rightness" of John's opinions is part of the "meaning" of (1), just as the "wrongness" (or non-existence) of John's opinions is part of the meaning of the negation of (1). But neither "rightness" nor "wrongness" is a part of the conditions on the "appropriateness" or on the logical property of (1) or its negation. This means that contrary to the convention we cited it is not possible to express the assertion of a factive sentence containing an indirect question in terms of a non-factive main predicate, whether lexical or symbolic - or if we do so express it, as in (46), we find that the representation is equivalent to one with a factive main predicate. This violates the convention because although the extra clause in (46) represents what we have called the "factive entailment" of a sentence containing a specifically-interpreted indefinite NP under a factive verb (in the case of (1), this entailment says that whoever

John believes to have won did in fact win), know triggers the same factive presupposition in (47) as it does in (1). That is, (47), which contains a factive verb, is not, as is usually assumed to be necessary in an "assertion," "stripped" of the relevant presuppositions of (1). This is because (47) is the specific reading of

(48) John knows that someone won the election,
and this reading, like the non-specific reading of (48), presupposes that $(\exists x)(x \text{ won the election})$, which of course is the factive presupposition of (1). (However, (47) is "stripped" of the presupposition of (1) which is triggered by the wh of that sentence, namely the exhaustiveness constraint.)

Until we have a definition of the "assertion" of a sentence my departure from this current convention is not really critical. The only alternative, as I see it, which would conform to the convention without contradicting my analysis, would be to assume that among the two entailments of (1), the corresponding existential entailment which we have claimed as its assertion, and the exhaustiveness entailment, we should choose rather the exhaustiveness entailment of (1) as its assertion. Thus (1) would be analyzed as asserting

(49) $(\forall x)(x \text{ won} \longleftrightarrow \text{John believes that } x \text{ won})$

and presupposing the factive and exhaustiveness presuppositions. The fact that (1) also happens to entail

(46) $(\exists x)(x \text{ won and John believes that } x \text{ won})$

would be derivable from this representation, since (49) and $(\exists x)(x \text{ won})$

together entail (46). The deciding factor in the choice between this analysis and mine was for me the relative syntactic naturalness of my analysis, in which the someone underlying the who of (1) is represented as a specifically interpreted indefinite pronoun.¹⁵

Since the assertion of (1) has already been discussed in most of the paradigmatical arguments about assertions of sentences containing indirect questions under factive verbs in general, we will concentrate now on the proposed assertions of (2)-(4). In each case we will suggest alternatives or modifications and explain why these should not be adopted.

We claimed that the assertion of

(2) John doesn't know who won
is

(50) $(\exists x)(x \text{ won and } \sim \text{John believes that } x \text{ won}),$
or, equivalently,

(51) $(\exists x)(\sim \text{John knows that } x \text{ won}).$

This means that it is a necessary condition on (2) that there be someone who won the election and of whom John either thinks that he lost or has no opinion as to whether or not he won. An alternative to (50) as the assertion of (2) is suggested by the following considerations: Since the assertion of (1),

(46) $(\exists x)(x \text{ won and John believes that } x \text{ won}),$
is the negation of the exhaustiveness entailment of (2), the negation of (1) - i.e. since (46) is the negation of

(52) $(\forall x)(x \text{ won} \longrightarrow \sim \text{John believes that } x \text{ won}) -$

perhaps the assertion of (2) should be, correspondingly, the negation of the exhaustiveness entailment of (1), the negation of (2). The exhaustiveness entailment of (1) is

(49) $(\forall x)(x \text{ won} \longleftrightarrow \text{John believes that } x \text{ won});$

the negation of this would be

(53) $\sim [(\forall x)(x \text{ won} \longleftrightarrow \text{John believes that } x \text{ won})]$

$\equiv (\exists x) \sim (x \text{ won} \longleftrightarrow \text{John believes that } x \text{ won})$

$\equiv (\exists x) \sim [(x \text{ won} \longrightarrow \text{John believes that } x \text{ won}) \text{ and}$

$(\sim x \text{ won} \longrightarrow \text{John believes that } x \text{ won})]$

$\equiv (\exists x) [\sim (x \text{ won} \longrightarrow \sim \text{John believes that } x \text{ won}) \text{ or } \sim (\sim x \text{ won} \longrightarrow \sim \text{John believes that } x \text{ won})]$

$\equiv (\exists x) [(x \text{ won and } \sim \text{John believes that } x \text{ won}) \text{ or } (\sim x \text{ won and } \text{John believes that } x \text{ won})],$

so by this reasoning, (53), or, equivalently, the disjunction

(54) $(\exists x)(x \text{ won and } \sim \text{John believes that } x \text{ won}) \text{ or } (\exists x)(\sim x \text{ won and John believes that } x \text{ won})$

should be the assertion of (2), rather than (50), which consists only of the left disjunct of (54). But the analogy does not hold. Although it is the case that in order for (1) to be true, the exhaustiveness entailment on (2) must fail (i.e. (1) entails the falsity of (52)), the parallel necessary condition on (2) is not merely that the conditional of the exhaustiveness entailment on (1) must fail to be valid for some x , but rather, that, for some x , the left-to-right conditional must fail. (The two-way conditional itself will fail if it fails in either direction for some x - in which case (54) would be true - but in order for the

left-to-right conditional to fail the stronger condition (50) must be met.) If we assume, counter to this, that the mere falsity of the exhaustiveness entailment of (1) is what is required by the truth of (2), i.e. that only (54), and not (50), is the assertion of and therefore an entailment of (2) - it would be possible for (2) to be true in a situation in which John knows of all the winners that they won, but he also (mistakenly) believes one of those who in fact lost to be a winner - this would be a situation in which (50) would be false but (54) would be true. However, (2) surely cannot be true in such a situation;¹⁶ (2) thus entails not only (54) but, also the stronger condition (50), and (54) is therefore inadequate as the assertion of (2), since it can be true when the exhaustiveness constraint on (2) is violated.

We now look at the assertion we have proposed for

(3) John is surprised at who won,
which is

(55) $(\exists x)(x \text{ won and John had expected } x \text{ not to win})$
or, equivalently, " $(\exists x)(\text{John was surprised that } x \text{ won})$." It is clear that (55), and not merely the weaker condition

(56) $(\exists x)(x \text{ won and } \sim \text{John expected } x \text{ to win}),$
is a necessary condition on the truth of (3). For, if (3) entailed only (56) and not (55), (3) could be true when John had no expectations at all about anybody as to whether they would win or not - but John must have expected somebody to lose in order to be surprised about who won.

I wish to argue also against an alternative to (55) which would interpret (3) as asserting that John was surprised at the election results in general - that John had expectations as to its outcome which were not fulfilled. In this case, a positive expectation of John's which turned out false would, as well as a negative expectation which turned out false, would be grounds for (3). That is, (3) would be held to assert not necessarily (55) but only the weaker disjunctive condition

(57) $(\exists x)(x \text{ won and John expected } x \text{ not to win}) \text{ or } (\exists x)(\sim x \text{ won and John expected } x \text{ to win}).$

But, again, if we assume that (55) is false, then even if (57) holds by virtue of the truth of its second conjunct, (3) is not true: If (55) is false, if no one who won was such that John expected him to lose, then we certainly cannot report that John was surprised at who won, even if there was someone such that John was surprised that that person didn't win. Thus (3) entails (55) as well as the weaker condition (57), so the former should be the "assertion" of (3). (Of course, in a situation in which (3) is true, it will almost always be the case that the right disjunct of (57) is true as well as its left disjunct (which is necessarily true when (3) is true). That is, if John had expectations of certain individuals that they would lose, it is quite likely that he also expected of other individuals that they would win. But in a situation in which John had only positive expectations which turned out wrong, and no negative expectations, it is never true that John is surprised at who won. What might be true in such a situation is the statement

(58) John is surprised at who didn't win,¹⁷
of which the right-hand disjunct of (57) is the assertion. The disjunctive (57) itself is the assertion of "Either John was surprised at who won or (i.e. and/or) John was surprised at who didn't win."

Our remarks about the assertion of

(4) John is not surprised at who won,
which is

(59) $(\exists x)(x \text{ won and } \sim \text{John had expected } x \text{ not to win})$,
follow from our remarks about the other sentences we have discussed.

(59) expressed the meaning of (4) better than

(60) $(\exists x)(x \text{ won and John expected } x \text{ to win})$
(n.b. (60) is the negation of the exhaustiveness entailment of (3), the negation of (4), just as (55), the assertion of (3), is the negation of the exhaustiveness entailment of (4)), because (60) has a truth-condition which (3) lacks, namely that John had expectations about who would win. But John's having had no expectations as to who would win does not invalidate (4) but rather implies that it is true (as long as its presuppositions hold); therefore (4) does not entail (and so does not assert) (60) but only the weaker condition (59). As was the case with (3), (4) asserts (entails) (59) rather than merely the weaker condition,

(61) $(\exists x)(x \text{ won and } \sim \text{John expected } x \text{ not to win}) \text{ or } (\exists x)(\sim x \text{ won and } \sim \text{John expected } x \text{ to win})$,
since if only the second disjunct of (61), and not the first (which = (59)), were true, the truth of (4) would be impossible - although

"John was not surprised at who lost" would be true, given the truth of its presuppositions. But again, even though it is usually the case that the right disjunct of (61) is true - i.e. at least one of those who lost was such that John did not expect him to win - whenever (4) is true (so that if John is not surprised at who won he is probably not surprised about who lost, either, or at least he probably wasn't surprised about all of those who lost), neither the fact that some loser was such that John was not surprised that he lost, nor the fact that John was not surprised at who lost in general, is sufficient evidence for John's not being surprised at who won (while on the other hand (59) does entail (4), assuming that the presuppositions of (4) are true).

Section 3: Implications of the analysis for non-factive sentences
containing indirect questions.

As it stands, my analysis of the logical consequences of sentences containing indirect questions is applicable only to those sentences with wh-complements under factive (including semi-factive) predicates. The rules suggested by the paradigms do not apply to indirect-question sentences with non-factive main verbs, since these rules analyze embedded questions in terms of that-complements, but the non-factive predicates which take indirect questions are pure "question"-verbs which never allow that- or any declarative complements. However, as I pointed out, "question"-verbs - at least those which are not "verbs of saying" - can be construed as epistemic predicates; thus not unexpectedly we find that sentences containing indirect questions under these verbs have

entailments about the beliefs of the subject of the verb (or of the specified or understood indirect object, if the main predicate is one which takes subject complements). Below I will informally outline an analysis of such sentences in terms of their epistemic entailments and presuppositions.

First, I would like to point out that it is not helpful to reduce the analyses of all kinds of indirect questions under non-factive predicates to the general case of universally quantified whether-questions - e.g. to consider

(62) John wonders who won the election

to be a paraphrase of

(63) $(\forall x)$ (John wonders whether or not x won the election).¹⁸

This is because (63) implies that nobody is such that John doesn't wonder whether or not that person won - but of course (62) is often true in a situation in which there are many people who are such that John doesn't wonder whether they won, since he is quite sure that they didn't win; what he is not sure of, but wants to find out (if (62) is true) is who did win. Moreover, whenever (62) is true it is certainly always true as well (without, however being entailed by (62)) that many non-winners were such that John never heard of them (my uncle from Brooklyn, for instance). Since it is impossible for John to wonder whether or not a person won if John is unaware of that person's existence, (63) is, while logically possible, never factually true, so it cannot be a paraphrase of the quite ordinary (62).

(62), like (1)-(4), has an exhaustiveness entailment which, paralleling those of (1)-(4), specifies a condition on what kinds of beliefs John must have or lack in order for (62) to be true. As we pointed out in Chapter II, Section 1b, (62) means that John lacks an opinion as to who won; in the language of the present chapter, we say that (62) has an exhaustiveness entailment which states

(64) $(\forall x)(\sim \text{John believes that } x \text{ won})$.

The difference in form between (64) and the exhaustiveness entailment of a sentence like

(2) John doesn't know who won,

which contains an indirect question under a negative factive epistemic upper sentence, is based on the lack of factivity of wonder. The exhaustiveness entailment of (2) says that John has no true opinions as to who won; thus it must refer to "the truth" as well as to John's beliefs or lack of them. But (64), the exhaustiveness entailment of (62), says rather that John has no opinion - correct or incorrect - of anyone to the effect that that person won. Therefore, (64) merely states an exhaustiveness condition on John's beliefs (namely that he must not have any as to who won). The fact that sentences containing indirect questions under non-factive predicates have the same sort of exhaustiveness entailments as similar sentences with factive main predicates indicates that the rule which interprets sentences containing indirect questions as presupposing an exhaustiveness constraint (and as entailing exhaustiveness entailments) should be written so as to indicate that the crucial element of the deep structure which triggers these logical con-

sequences is that element which is common to the deep structures of all sentences containing indirect questions, namely the wh-complementizer (as opposed to the factivity and specificity features which are present in the deep structures of only a subclass of these sentences). However, it is clear that this rule must be made sensitive to the factivity of the verb, to account for the "x won" conditionals in the exhaustiveness entailments of factive indirect-question sentences which is lacking when the main predicate is non-factive. (This extra conditional in the exhaustiveness entailments and presupposition of sentences containing indirect questions under factive verbs is, along with the "factive entailment" (e.g. the extra "x won"-clause in the assertions of (1)-(4)), an aspect of factivity which is not accountable for in terms of the defining characteristic of the factive predicate, namely the factive presupposition which it triggers.)

By saying that (64) is an entailment of

(62) John wonders who won,

we have accounted for only part of the meaning of (62). In order for (62) to be true, not only must it be the case that John has no opinions as to who any of the winners were, but it must also be true that John is in some sense interested in finding out who the winners were. Thus (62) entails, in addition to (64), a proposition which we express roughly as

(65) John is interested in knowing who won.

In addition to the claim that (62) entails (65), the analysis I envision will claim that if a sentence containing an indirect question

means, by virtue of the meaning of its non-factive main verb, that the subject is "interested" in the answer to the embedded question, the sentence has an entailment which is derived from its deep structure by replacing the question-verb phrase with a two-level verb phrase consisting of a factive epistemic predicate in complementation to (and having the same subject as) an emotive non-factive. For example, "John inquired who won" ought to be said to entail, parallel to (65), "John tried to find out who won." Some sentences with indirect questions under non-factive verbs do not have this "interestedness" implication. For example, the meaning of

(66) It's a mystery to me who won the election

is apparently exhausted by its exhaustiveness entailment. But sentences which do have this implication can be analyzed as (that is, we are claiming that they are paraphrases of) the conjunction of their respective exhaustiveness and "interestedness" entailments: e.g. (62) entails (and is entailed by) the conjunction of (64) and (65).

(This statement of the analysis of (62) would, in a more formal representation, be modified so that neither the "believe" of (64) nor the "want to know" of (67) would be taken as an actual lexical item. Again, this expression in terms of abstract predicates is necessary since the English expression "wants to know" is not an exactly accurate representation of the "interestedness" aspect of the meaning of (62), and in claiming that many indirect-question sentences with non-factive main predicates have an entailment like (65), we are not claiming that there is for each predicate which carries the "interestedness" implication an actual lexical expression, consisting of a non-factive

emotive verb dominating a factive epistemic, which exactly expresses this aspect of the meaning of such sentences.)

Let us now consider

(67) John doesn't wonder who won the election.

We noted (in Chapter II, Section 1b), in connection with the existential entailments of belief of sentences containing indirect questions, that (67), as a paradigm case of such a sentence with a "negative" non-factive upper sentence, is neutral between indicating that John doesn't wonder who won the election because he thinks he knows who won, and indicating that John doesn't wonder who won merely because he is not interested in the question. Thus (67) can be expressed logically by the following disjunction: Either

(68) John thinks that he knows who won

or

(69) John is not interested in knowing who won,
since the truth of either (68) or (69) is grounds for the truth of (67).

Although (62) and (67) are not factive sentences, the argument for expressing the exhaustiveness constraint on them both as a presupposition consisting of the disjunction of their respective exhaustiveness entailments holds here as it did for (1)-(4). This is because the exhaustiveness entailments of both (62) and (67) are expressed in terms of the universal quantifier; that of (62) is (64) and that of (67) includes the exhaustiveness entailment of "John knows who won." Thus if we represent (62) as the conjunction of its exhaustiveness entailment

(64) and its "interestedness" entailment (65), and (67) as "(68) or (69)," i.e. as the disjunction of the negation of (64) and the negation of (65), we do not succeed in expressing (67) as the negation of (62). That is, (62) is untrue if either (64) or (65) is untrue, but the untruth of (62) does not, according to the analysis under discussion, entail (67), since (62) could be untrue as long as John had an opinion as to who one of the winners was (this would falsify (64)); but (67) would not necessarily thereby be true if there was, as in the general case, more than one winner, since the falsity of (64) does not imply that John has opinions as to who all the winners were - and this is a necessary condition on

(68) John thinks he knows who won.

Thus it is possible for (62) to be untrue by virtue of (64)'s being false, without either (68) or (69) necessarily being true; consequently we cannot show that (64) is an entailment of (62) (i.e. it is not necessarily so that (62) is false whenever (64) is false) unless we assume that (62) and (67), in addition to their respective entailments already mentioned, presupposed the disjunction of (64) and (68). If we assume the existence of this presupposition for (62) and (67), we may regard

(70) $(\forall x)(\sim \text{John believes that } x \text{ won})$ and John is interested in
knowing who won,

the conjunction of (64) and (65), as the assertion of

(62) John wonders who won,

and

(71) Either John thinks he knows who won or John is not interested
in knowing who won,

the disjunction of (68) and (69), as the assertion of the negation of (62),

(67) John doesn't wonder who won.

The fact that the assertion of (62) is expressed in terms of a universally quantified formula, while that of sentences containing indirect questions under factive predicates is expressed by an existential quantification, reflects our claim that the wh-words of factive indirect questions are derived from specifically-interpreted indefinite pronouns. The existential quantifier in the logical analysis of these sentences corresponds to the specifically interpreted indefinite in their respective underlying representations. On the other hand, we assumed that the indefinite pronouns underlying the wh-words of indirect questions under "question"-verbs are, like those underlying the wh-words of direct questions, neutral as to the specific/non-specific distinction(see Chapter II, Section 3). The fact that all sentences containing indirect questions have an exhaustiveness constraint in common can be accounted for by assuming this logical consequence to be triggered by the wh which appears in each of their underlying representations.

Footnotes to Chapter III.

1. The term "exhaustiveness constraint" or "exhaustiveness condition" (on a sentence or proposition containing an indirect question) will in this work consistently refer to the disjunctive exhaustiveness presupposition which we claim is a logical consequence of every indirect-question sentence and its negation, never to the exhaustiveness entailment either of the sentence or of its negation. Hopefully this will not cause any confusion since the truth of either exhaustiveness entailment (of the sentence or of its negation) is sufficient for the truth of the exhaustiveness presupposition, and since only one disjunct can be true at a time, it should be clear from the context of the discussion which disjunct is being assumed to be true when the constraint is said to hold for a given (positive or negative) sentence.
2. My observations about the exhaustiveness constraint on answers to direct questions and on sentences containing indirect questions, and my claim that the constraint must be weakened with a "significance" amendment, apply also to all other cases of exhaustiveness truth-conditions on sentences. For example, definite plural (or collective) noun phrases and generic noun phrases trigger exhaustiveness constraints, as in

(i) The peasants are rising.

(ii) The audience is bored.

(iii) Cats like tripe.

See Fodor (1970) on the subject of exhaustiveness constraints on the truth of sentences like these.

3. Some terminological specifics, to clarify the discussion:

A "reply" is a response to a question which provides a "possible answer" (see Chapter I, Section 1b) to that question,

A reply consists of one or more "components" or "conjuncts" which should strictly be viewed as complete sentences - e.g. a reply to

(11) Who was at the party?

might be "John was at the party and Bill was at the party and..." Sometimes, however, we will speak of these conjuncts as NP's - i.e. we will assume the reply to be given in an abbreviated form.

A conjunct (in sentential form) of a reply to a question is "a (correct) conjunct of the answer" to that question if it is true.

A reply consisting wholly of true (correct) components of the answer is "strictly complete" if it includes every correct component of the answer.

A "part of the answer" is the conjunction of the members of a subset of the components of the strictly complete answer.

We argue in this section that the exhaustiveness constraint on answers to direct questions, and, by extension, on sentences containing indirect questions, must be weakened so as to be considered satisfied in certain situations even if the reply is not strictly complete. The term "complete" or "exhaustive" as applied to conjunctions of true components of an answer will mean "satisfying the modified exhaustiveness constraint."

(N.B. We will sometimes use the term "answerer" to refer to the utterer of a reply to a question which is not necessarily a correct and "complete" answer.)

4. This definition allows an appropriate answer which is "exhaustive" (with respect to whatever criterion of "significance" is being employed) to contain relatively "insignificant" elements as well - it is not clear whether such answers are always appropriate (and considered to be exhaustive) or whether their appropriateness varies among situations. Perhaps there are circumstances under which we would want to insist that the two sets $\{a_{i_1}, \dots, a_{i_n}\}$ and $\{r_1, \dots, r_m\}$ are the same.
5. This statement of the exhaustiveness condition implies that the condition that for all x ,

x was there \longleftrightarrow John believes that x was there,

can be weakened in the left-to-right direction but not in the right-to-left direction. Thus it says that

(10) John knows who was at the party

might still be true if the left-to-right conditional does not hold for all x - that is, if

(i) $(\exists x)(x \text{ was at the party and } \sim \text{John believes that } x \text{ was at the party})$;

but it says that (10) can not be true if the right-to-left conditional does hold for all x - if

(ii) $(\exists x)(\sim x \text{ was at the party and John believes that } x \text{ was at the party})$.

I don't wish to press too hard for this claim; it is not clear to me whether the right-to-left conditional should also be weakened. It does appear that John's having a single wrong opinion about an individual who was not at the party, to the effect that the person was there, would not necessarily disqualify John from knowing who was there, especially if there were a great many people at the party. But I do think there is a difference between the effect of truth of (i) on the truth-value of (10) and the way the truth of (ii) would affect (10); we allow greater leeway in the former case. That is, the number of "true opinions" about the people who were there which John can lack (the number of x's for which the quantified formula of (i) holds) before it becomes impossible to assert (10), is greater than the number of "false opinions" John can have about the people who weren't there (the number of x's satisfying the quantified formula of (ii)), with (10) still true. It seems to me that John need have only very few (perhaps no more than one) "false opinions" of this latter sort in order for us to hesitate to assert (10).

6. It is not clear how the modification of the exhaustiveness entailment on "John doesn't know who was at the party" should be written, if this framework is adopted. That is, if the positive part of the exhaustiveness constraint on

(10) John knows who was at the party

is

(i) $(Mx)(x \text{ was at the party} \longrightarrow \text{John believes } x \text{ was at the party})$

(where "(Mx)" means "It is true of "most" x's that"), then the negative part could be

(ii) $(Mx)(x \text{ was there} \longrightarrow \sim \text{John believes that } x \text{ was there})$

or

(iii) $\sim (Mx)(x \text{ was there} \longrightarrow \text{John believes that } x \text{ was there}).$

(ii) seems to imply that of those who were at the party, only a handful are such that John knows that they were there; (iii) means rather that of those who were there, less than half - but maybe as much as 49% - are such that John knows that they were there. My impression is that (ii) comes closer than (iii) to capturing the usual meaning of (10).

7. Fodor (1970) proposes an "informativeness" condition which covers some of the cases we have been considering; following is a brief re-statement of her criterion, which I have relegated to a footnote since I have nothing to add to it. It is based on Donnellan's (1971) distinction between the "referential" and "attributive" uses of a

definite description.

"A speaker who uses a definite description attributively in an assertion states something about whoever or whatever is the so-and-so. A speaker who uses a definite description referentially in an assertion, on the other hand, uses the description to enable his audience to pick out whom or what he is talking about and states something about that person or thing. . . . In the attributive use, the attribute of being the so-and-so is all important, while it is not in the referential use." (p. 102).

Fodor adopts this distinction in a claim that sentences containing definite NP's in referentially ambiguous contexts are ambiguous (independently of the transparent-opaque polarity) between a "referential" and an "attributive" reading. She points out (pp. 194-5) that a sentence of the form "John knows who the ... is" can be true if and only if a sentence of the form "John knows that the ... is the ---" is true, where (a) the same NP fills both dotted blanks and (b) either the NP filling the dotted blank can be taken as referential and the NP filling the dashed blank can be taken as attributive, or vice versa. Therefore, "John knows who won" is true (assuming only one person won), if and only if it is true that "John knows that the person who won is ---," with a referentially interpreted NP filling in the dashes. For example, if all we can say is that John knows that the person who won is the candidate who received the most votes, then ordinarily "John knows who won" will not be true, although it might be true if "the candidate who received the most votes" can be interpreted as picking out or referring to the winner rather than merely giving an attribute which is possessed by whoever happens to be the winner (that is, "John knows who won" is true if John's answer can be interpreted referentially, but it probably will not satisfy the asker of "Who won?" unless he too knows who it was that received the most votes - in which case he would probably not be asking "Who won?"). Fodor suggests that this condition can be weakened so as to count someone as "knowing the answer" even if that person can only supply an "attributive" NP, (which does not directly succeed in picking out the individuals who comprise the correct answer) as long as the person can give an "informative" attributive which would allow someone to derive a reply which answers the question. For example, if John knows that the conservative candidate won the election, we say that he knew who won the election, since even if he doesn't know who the conservative candidate was (i.e. he only knows of him attributively that he won), he could probably find out the person's name, or in some other way ascertain more closely who he was. Note however, that our example of "A salesman" as a reply to "Who was at the door?" was claimed to be a sufficiently "informative" or satisfactory answer to that question (and, on that account, such an answer counts as sufficient grounds for the truth of the statement that the answerer

knew who was at the door), and this fact is not obviously amenable to explanation by Fodor's condition, since an indefinite rather than a definite NP is involved.

8. This problem with (18) as a paraphrase of (1) could not be solved by assuming "all x" in each case to be limited to the set of objects which the speaker or the subject considers to be conceivably true components of the correct answer: For example, in the case of (1) "all x" could be taken to be all the candidates who were running for office in the mentioned election. If the frame of reference is thus restricted, and the number of candidates is not terribly great, it begins to make sense to consider (21) a condition on the truth of (1). But surely this approach is not feasible in general: Take

(i) John knows who Mary met in New York yesterday

for instance - it is conceivably true of any x which is a living human that Mary met him in New York yesterday - and yet the truth of (i) surely is not a guarantee that it is true of all living humans who Mary did not meet yesterday that John knows she did not meet them.

9. That is, the "believe" which appears in our statement of the logical consequences of

(1) John knows who won the election

is not to be taken literally as the lexical verb believe, but rather as a pro-form (see immediately below in text).

10. There is some disagreement over this (empirical) point: some people do not judge

(2) John doesn't know who won

to have an exhaustiveness condition, claiming that one exception to $(\forall x)(x \text{ won} \rightarrow \text{John believes that } x \text{ won})$ - i.e. the existence of one winner who is such that John doesn't know that he won - is a sufficient condition for the truth of (2). I am grateful to Lauri Karttunen for pointing this out to me; but I have not, in this chapter, attempted to account for "dialects" other than my own.

11. This claim - that John cannot know of any of the winners that they won in order for

(2) John doesn't know who won

to be true - is exactly analogous to Fodor's claim (1968, pp. 162ff.) that

(i) ?The boys we met are not orphans, although some of them are

is self-contradictory. That is, just as in order for

(ii) (=her (67)) The boys we met were orphans

to be true, all of the boys must have been orphans, so in order for (ii) to be false, none of them can have been orphans:

A simple definite noun phrase in the plural . . . does not . . . admit the possibility that the sentence might be true of some but not all things of the kind described. . . . There is a presupposition that the sentence is true either of all, or of none, of the things that fall under the description contained in a plural definite noun phrase. Treating this as a presupposition will permit us to say that sentence (67) [our (ii)] is not true if not all the boys we met are orphans, but it is not false either. We can say that in those circumstances the sentence is neither true nor false.

Fodor's claim that (ii) has a disjunctive exhaustiveness presupposition was, of course, the inspiration for my similar claim about sentences containing indirect questions. But more than that, my claim may be a special case of hers. Although we insist that the wh-words of questions, direct and indirect, are derived from indefinite NP's, the factive presupposition, which for

(1) John knows who won

is

(iii) $(\exists x)(x \text{ won}),$

assures us that the set $\{x|x \text{ won}\}$ - the set of winners (where "|" means "such that") - is non-empty. Therefore it is legitimate to express certain logical consequences of (1) in terms of this set. For example, if (1) is true, then it is true of the set of people who won that every member of that set is believed by John to have won; i.e. (1) entails

(iv) The people who won are such that John believes that they won.

Similarly,

(2) John doesn't know who won

entails

(v) The people who won are such that it is false that John believes that they won.

But (iv) is a proposition of the same form as (ii), containing a predication on a plural definite noun phrase, so Fodor's presupposition formula applies to it: (iv) (which differs irrelevantly from (1) by its lack of the "nothing-but-the-truth"-condition) presupposes that John believes either of all or of none of the winners that they won. Thus (iv) (and consequently (1) as well) must have an exhaustiveness presupposition which is a disjunction of universal quantifications for the same reason that (ii) has this presupposition.

Note, by the way, that unlike (ii), the proposition

(vi) All the boys we met were orphans

does not have this disjunctive presupposition. In order for (vi) to be false, it is not necessary (as it is for (ii) to be false) that none of the boys we met were orphans; (vi) is false as long as not all of them were orphans, even if only one was not. One of the places where Baker's analysis of (1) ran into trouble was its assumption that the logical structure of (1) was akin to (vi) rather than to (ii). The contrast between (ii) (whose subject is a plural definite NP) and (vi) (which is a universally quantified formula), and the similarity of (ii) and (1), are evidence for the assumption that the exhaustiveness condition on (1), which is universally, quantified, is not a part of the "assertion" of (1).

12. This negative aspect of (3), due to the "adversative" (see Appendix 2) character of be surprised, results in the analysis of (3) resembling in some ways that of

(2) John doesn't know who won

rather than that of the "positive"

(1) John knows who won.

However, since "expect not" is different from "not expect," the assertive part of (4) is "not expect not" - so (4) is also "negative" and also parallels (2) in its analysis, but in different ways. That is, by analysing be surprised as logically containing a negative we are not claiming that "positive" and "negative" are reversed for this predicate, as they are, say, for forget or be unknown.

13. Incidentally, the weaker (than (44)) condition that John lack negative expectations about all those who lost - i.e.

(i) $(\forall x) (\sim x \text{ won} \rightarrow \sim \text{John expected } x \text{ not to win})$

- is also not an entailment of (3). That is, the fact that John was "right" in some of his expectations about people who turned out to be losers is not incompatible with John's being surprised at who won, since (3) only requires that John be "wrong" in all his expectations about people who turned out to be winners.

14. . . . nor any presuppositions not triggered by the main predicate or the sentence either, for the assertion is meant to be an entailment of the sentence. Actually, the rule that the main verb of the assertion may not trigger any of the presuppositions triggered by the main verb of the sentence is usually relaxed when the main predicate of the sentence triggers a presupposition that the subject (or indirect object) of the main predicate is human, or animate, or intelligent, and so forth - if this is indeed a presupposition - since the assertion in such cases always presupposes this too, by virtue of its main verb.

15. Another alternative would be to assume that

(1) John knows who won

asserts its corresponding existential entailment

(i) $(\exists x)(\text{John knows that } x \text{ won})$

and

(2) John doesn't know who won,

the negation of (1), asserts its exhaustiveness entailment

(ii) $(\forall x)(x \text{ won} \rightarrow \sim \text{John believes that } x \text{ won})$.

This would have the advantage that the assertion of (2) is the negation of the assertion of (1) (just as, for example, the assertion of "John knows that Bill won" is "John believes that Bill won" and the assertion of "John doesn't know that Bill won" is "John doesn't believe that Bill won"), but the disadvantage of syntactic unnaturalness for the representation of (2). (We could also reverse this alternative by assuming that (1) asserts its exhaustiveness entailment and (2) asserts its corresponding existential entailment, with the same advantage and disadvantage.)

16. (2) would of course be zero in this situation, since neither the exhaustiveness entailment of (2) nor that of its negation (1) is true, making their disjunct false and (1) and (2) truth-valueless.
17. That is, (58) is true in this situation if all John's positive expectations turned out to be wrong - in which case the exhaustiveness entailment of (58) would be satisfied, as well as the factive presupposition of (58) to the effect that someone lost.

18. This would be the analysis arrived at by generalizing on the first step of Baker's (1968) convention for interpreting sentences containing indirect questions under factive (or semi-factive) predicates: This first step reduced a sentence containing an indirect question with a wh-word other than whether to a universal quantification of a formula containing a whether-question under the same predicate - e.g.

(i) John knows who won

is reduced to

(ii) $(\forall x)$ (John knows whether or not x won).

This is the same operation we carried out on (62) to produce (63). (The second step of Baker's convention, which reduces whether-questions to disjunctions of factive that-clauses, would of course not apply to (63).) It should be noted, though, that Baker does not himself suggest that (62) be interpreted as (63). Note also that this analysis of (62) - one we will reject on the grounds of its not being a paraphrase of (62) - is not the same as the derivation suggested by Ross (1971b) (see Chapter II, Section 1c). Ross would analyze a wh-question under wonder as a disjunction of whether-clauses, but not as a universal disjunction - so any remarks disparaging (63) do not apply to his proposed derivation. That is, Ross's analysis is only applicable to those situations in which there is assumed to be a single non-conjunctive true answer to the embedded question which is one among a number of explicitly suggested possible answers - e.g. it paraphrases

(iii) What - brownies or honey slide - Milt gave to Don
is unclear

as

(iv) Whether Milt gave brownies to Don or whether Milt
gave honey slide to Don is unclear,

so that it lacks the disadvantages of the "all x " analysis. But no obvious generalization of Ross's derivation suggests itself which would allow it to account for the exhaustiveness entailment of (62), the answer to the embedded question of which might consist of more than one component, and in which no possible answers are mentioned.

CHAPTER IV - PERFORMATIVES AND THEIR SUCCESS-CONDITIONS AND
PRESUPPOSITIONS

The continual discovery of fresh types of nonsense, unsystematic though their classification and mysterious though their explanation is too often allowed to remain, has done on the whole nothing but good. Yet we, that is, even philosophers, set some limits to the amount of nonsense that we are prepared to admit we talk...

...J. L. Austin (1962), How to Do
Things with Words, Lecture I

This chapter is devoted to (1) defining the notions "performative sentence" and "performative utterance" and to (2) defining the notion "presupposition of a performative sentence." When the latter definition is given, the notion of "logically proper" (presupposition satisfaction/failure) which we introduced in Chapter I will range over all syntactic and semantic sentence-types. In order to formulate these definitions, we must first give some background information on the concepts to be defined.

Section 1: Introduction to performatives.

The term "performative utterance," introduced by J.L. Austin (1962), is familiar to linguists through the work of Ross (1970a), Searle, Fraser, and others, so I will be brief in my summary of what Austin apparently meant to denote by it. (It should be kept in mind that nowhere does Austin give an explicit definition of the term, and there are numerous disagreements among philosophers and linguists as to whether or not certain marginal examples are properly considered performatives.) Basically, a performative utterance performs a speech

act, constitutes an action in itself, beyond the mere act of making an utterance, insofar as it performs the act indicated by its main verb. Some examples of sentences, the utterance of which may be performative (that is, uttering them can constitute a performance of the speech act indicated by their respective main verbs)¹, are:

- (1) I promise you that I will be there.
- (2) I sentence you to three minutes in the lions' den.
- (3) I propose that we merge with Consolidated Amalgamations, Inc.
- (4) I accuse you of attempting to overthrow the government by force.
- (5) I insist that you leave immediately.
- (6) I claim that this sentence is ambiguous.

In the later lectures of Austin (1962), the concept of a "performative" is superseded by the concept of an "illocutionary act" - an act which is performed in the uttering of a sentence (as opposed to by uttering something).² Illocutionary acts include all those speech acts which can be performed in the uttering of a performative sentence: Promising, sentencing, proposing, etc. (but some, such as threatening, cannot be performed with a performative utterance). Austin at first made a distinction between "explicit" performatives, like (1)-(6), and "implicit" or "primary" performative utterances, which, while they may also perform illocutionary acts, do not have main verbs corresponding to the acts which they may be used to perform. For example, an utterance of an imperative sentence would be a "primary" performative: To utter a sentence like

- (7) Close the door

may count as performing the act of ordering or requesting as much as if the speaker had said (8) or (9) instead:

(8) I order you to close the door.

(9) I request that you close the door.

But as Austin came to realize, asking a question or even making a statement are likewise illocutionary acts which can be performed either with or without the explicit use of expressions like "I ask you" or "I state that," so that all sentences which are not explicit performatives - including ordinary declarative sentences which can only be used to express statements (assertions, etc.) - turn out to be inexplicit performatives. Thus the concept of an inexplicit performative lapses into vacuity, so when we speak here of "performatives" we will always be referring exclusively to explicit performatives. That is, although explicit performatives cannot be distinguished syntactically from other declarative sentences at the deep structure level, they do form a separate class semantically; we will use the term "performative" as excluding all declaratives which are not explicit performatives, as well as interrogative and imperative sentences. We will, however, refer to individual performances of illocutionary acts as "explicit" - i.e. performed in the uttering of an explicit performative - or "inexplicit" - performed in the uttering of a non-performative sentence. For example, the illocutionary act of promising could be performed explicitly with an utterance of "I promise that I'll be there" and inexplicitly with an utterance of "I'll be there."

We will now discuss various kinds of conditions which are placed on individual performative utterances: The "felicity" conditions of Austin (1962) and the "success" conditions of Searle (1970) and Fraser (1972).³ In Austin (1962), a performative is "felicitous" when the illocutionary act which the speaker purports to perform by uttering it (the act corresponding to its main verb) is thereby effected, completely, correctly and sincerely. There are three categories of "infelicities" to which performatives are subject: Misinvocations, Misexecutions, and Abuses (Austin, Lecture II).⁴ The first class, the Misinvocations, apply only (as far as I can see) to formal acts of the sort I will label "ceremonial" (and which Strawson (1964) calls "essentially conventional," including christening, sentencing, bequeathing, etc.; see Appendix 3).⁵ They are caused by violations of conditions which in general require that the speaker must be authorized, or have a vested right, to perform the act in question by means of uttering the performative. For example,

(10) I name this ship the Mr. Stalin

(Austin, p. 23) is infelicitous and a Misinvocation when the condition is violated that the speaker has been authorized to christen that particular ship with that particular name (at that particular time and place). We argue in Appendix 3 that these "authorization" conditions correspond to truth-conditions on statements which assert that a "ceremonial" speech-act has been performed; that is, sentences beginning "He christened . . .," "He sentenced . . .," "He declared war . . .," etc., entail that the speakers of the performative utterances beginning "I christen . . .," "I sentence you. . .," etc., by which these acts were performed (respectively) were "authorized"-

whatever that implies in each case - to perform that particular act on that occasion. To the extent that my notion of the failure of an authorization condition exhausts Austin's notion of a Misinvocation, these reportive sentences entail that the utterance which performed the indicated act was not a Misinvocation. Austin says less about his second category of infelicities, the Misexecutions, than about the other two. These are situations in which "the purported act is vitiated by a flaw or hitch" in the procedure for performing the act (p. 17, *italics his*). Some Misexecutions (particularly Austin's Class B.1 - the "flaws"⁶) are clearly cases of presupposition-failure (that is, they are among the sorts of phenomena we would like our characterization of a "logically improper performative" to account for). For example, Austin judges "I bet you the race won't be run today" as constituting a Misexecution if it is the case that "more than one race was arranged" (p. 36). This is certainly a case of an utterance being at fault because it contains a definite description which fails to refer uniquely - that is, this infelicitous performative is also what we want to call logically improper. Austin's third category of infelicities, the Abuses, are generally caused by insincerity. "I promise to do X" is abusive if I do not intend to do X; "I thank you," if I do not think you deserve my thanks. We will ignore sincerity conditions of this sort throughout the discussion on the grounds of their linguistic irrelevance; just as the truth-value (or lack of it) of

(11) John promised to telephone Mary

is not affected by whether or not John intended to keep his promise to telephone Mary, so we assume that the logical propriety of

(12) I promise to telephone you

is not affected by the sincerity of the speaker.

Searle (1970) introduced the notion of a "successful and non-defective" performance of an illocutionary act. In his book he states several kinds of conditions on such performances; these are intended to apply to the idealized case of a performance of an illocutionary act in the uttering of an explicit performative, but there is an obvious extension to inexplicit performances of such acts. Searle holds that for each illocutionary act, there is a set of necessary and sufficient conditions on its performance which can be stated as

a set of propositions such that the conjunction of the members of the set entails the proposition that a speaker has made a successful and non-defective promise [request, accusation, etc.] and the proposition that the speaker made such a promise entails this conjunction. (p. 54)

In Fraser (1972), Searle's analysis of these conditions is broken down into four sets of conditions on each act (not counting conditions which apply equally to all acts). These are:

1. Propositional content conditions: these specify "the nature of the proposition expressed in an utterance that is to count as the performance of a particular illocutionary act. For example, the propositional content of a promise must predicate some future act, not necessarily but usually to be carried out by the speaker; for a request, some future act of the hearer [addressee]" (Fraser, p. 11).⁷

2. Preparatory conditions: these specify the pre-utterance requirements on the speaker and hearer in order for the successful and non-defective performance of the act. For promising they include the favorable disposition of the hearer toward the act, and the requirement that it is not obvious to both the speaker and hearer that the speaker will do the act in the normal course of events" (p. 11).
3. Sincerity conditions: when these do not hold, the result is essentially an "Abuse" in Austin's sense.
4. The Essential condition: this "specifies what the speaker intends as the point of the utterance. This condition is the sine qua non of the illocutionary act. For a promise, the essential condition is that the speaker intends the utterance to count as placing him under the obligation to bring about the act specified; for a request, that it count as an attempt to get the hearer to carry out the act specified" (p. 12).

Fraser argues that we can distinguish (although Searle does not, at least not explicitly) between conditions on the successful performance of an illocutionary act, and conditions on the non-defective performance of such an act. He claims that the latter class of conditions "should be accounted for within some larger theory of conversation" (p. 13), not within a linguistic theory of sentence-force pairing. Fraser's claim is that all sincerity conditions and most preparatory conditions are irrelevant to the successful performance of a given act, although they do contribute to its non-defectiveness (pp. 14-15).

Thus Fraser says that there are three kinds of conditions on the successful performance of an illocutionary act by an utterance: Propositional Content, Essential, and Preparatory, although this last class is narrower when it is restricted to success-conditions than it was when it also included non-defectiveness conditions. For example, the preparatory condition on successful promising involves "the favor-

able disposition of the hearer toward the act," but not the condition on the non-obviousness of the promised action being performed. I adopt Fraser's version of Searle's analysis and will refer throughout these last two chapters to these three kinds of conditions on successful illocutionary acts. In Section 3 of the present chapter we relate the essential and preparatory conditions on a given illocutionary act to the truth-conditions on statements which assert that an illocutionary act has been performed. Thus the success-conditions on illocutionary acts should be regarded as part of the semantic component of the grammar, since we must formulate them in any case in order to account for the meaning of (i.e. to generate the logical consequences of the statements expressed by) sentences containing verbs like promise, christen, etc.

Section 2: On defining the notion "performative"

2a. On the linguistic necessity of an explicit definition of "performative sentence."

In this section we attempt to characterize as explicitly as possible the notion "performative" as it applies to sentences, utterances and verbs.⁸ Such a characterization is worth making for the following reasons: First, I maintain that an enlightened native speaker of a language is able to distinguish intuitively between performative and non-performative and that this intuition is a part of his linguistic competence. In fact, it is this ability which has made it possible for the numerous writers on the subject to give an informal description of

the notion "performative," followed by a few examples, and go on to discuss the properties of the class of performative utterances or sentences on the assumption that once the reader understands the ideas involved, he will have a fairly clear conception of just what class of utterances or sentences the author is writing about.⁹ Also, the rather odd role which performatives play in our deductive processes serves to distinguish them from non-performatives. Austin's initial motivation for differentiating between performatives and other (utterances of) declarative sentences was that performatives do not make statements - that is, it makes no sense to speak of them as true or false.¹⁰ Therefore a performative, like a question or an imperative, and unlike a statement, cannot serve as the antecedent or consequent of a logical inference. While it is rather a mystery at present to what extent our ability to make deductions and distinguish valid entailments from non sequiturs is a part of our linguistic (as opposed to logical) competence, it is generally assumed that semantics and logic are not entirely disjoint, and it is at least plausible to claim that the fact that we do not think of performatives as potentially "true" or "false" is a linguistic fact.¹¹

Another, and perhaps more decisive, reason for our insisting on an explicit definition delineating the class of performatives is that performative sentences are, in general, ambiguous to different degrees and along different dimensions from other declaratives. Every sentence which can be used to make a performative utterance can also be inter-

preted as a statement in the "habitual" or "historical" present, although we often need to provide some context in order to "get" these interpretations. An example which forces the habitual interpretation of the performative sentence "I beg you to listen to me" is: "Every day I beg you to listen to me, and you refuse." An example of the disambiguation of a performative in favor of the historical present interpretation is: "So I promise to do you a favor, and then you go ahead and tell me not to bother." Thus performative sentences are (at least) three ways ambiguous between "performative," "habitual," and "historical" readings. But similar declarative sentences in the present non-progressive do not allow this tripartite interpretation. They are, in general, only two ways ambiguous, either between habitual and historical (if the main verb is [-stative]), or between historical and what we may call "simple descriptive present" (if the main verb is [+stative]). In either case both readings express statements and the sentence cannot be used to perform the act corresponding to its main verb. For example,

(13) I write a letter

(which is non-performative with a non-stative main verb) has a "habitual" and a "historical" reading, but the performative interpretation is excluded. (13) lacks a "simple descriptive present" interpretation as well, since the verb write is non-stative, and non-stative verbs allow a "descriptive present" interpretation only when they are in the progressive.¹² To take a stative example,

(14) I know the answer

has ordinarily a simple descriptive present interpretation, but a historical interpretation is also possible; although, since "knowing" is not an act, both habitual and performative readings are automatically ruled out for (14). Therefore, performative sentences must be so identified within the semantic component in order to account for their having a reading which (13) and (14) lack.

The native speaker's ability to distinguish between explicitly performative and non-performative is reflected in the differences between the way in which utterances of these two kinds are respectively reported. In particular, statements expressed by non-performative declarative sentences are ordinarily reported (directly) as "He said:..." or (indirectly) as "He said that...." But an utterance of a performative sentence (on its performative reading) is not normally reported in indirect speech by "He said that" Thus we may report an utterance by John of

(15) I intend to leave

as either

(16) John {^{said}_{says}}; "I intend to leave"

or

(17) John {^{said}_{says}} that he {^{intends}_{intended}} to leave;

if John was telling the truth when he uttered (15), it is also true that

(18) John {^{intends}_{intended}} to leave.

But we would not assert (18) as a report of John's having uttered (15).

On the other hand, when John utters

(19) I promise to leave

we will report this either as

(20) John {^{said}_{says}}: "I promise to leave"

or (whether we believe that he intends to leave or not)

(21) John {^{promised}_{promises} to leave.

We will not usually say

(22) a. John said that he promised to leave.

b. John says that he promises to leave.

(22)a is ordinarily used to report an utterance by John of the statement "I promised to leave;" it might also be used to report John's having expressed the statement expressed by the "historical present" reading of (19). But (22)a cannot be taken to mean that John uttered (19) in an attempt to perform the act of promising. As for (22)b, it ordinarily means that John made a statement to the effect that he (habitually) promises to leave.¹³ (22)b might be used to report an utterance of (19) made by John in an attempt to promise, but only, I think, by someone who wanted to express a doubt as to the "success" of (19) as a promise (maybe nobody wants John to leave) or John's sincerity (he doesn't really mean to leave). (A similar claim is made in Fillmore (1971a), footnote 23.) These contrasts show that we intuitively distinguish between performative and non-performative by ordinarily reporting utterances of statements (including utterances of performative sentences meant to be understood on a non-performative reading) indirectly with "He said that . . ." or the equivalent, while performative utterances are in general not reported this way: A performative sentence of the form "I - V - X," when it is uttered with the intention of performing the act corresponding

to V, is reported in indirect speech not as "He said (stated, asserted, told us, etc.) that he V'ed X" but simply as "He V'ed (or V's) X." Perhaps the reason for this discrepancy has to do with the fact that promise, as opposed to non-performative verbs like intend or jump, is an expression which may be used to report a speech act. The class of such expressions includes, aside from performative verbs, the manner-of-speaking verbs, such as mumble and shout (see Zwicky (1971b)), and also illocutionary verbs such as threaten and praise which cannot be used performatively (see Chapter V, Section 1). This is the class of verbs which can be used to introduce an answer to the question: "What did he say?" Thus it might be redundant to use two of these verbs (for example, say and promise) to report the same speech act. (This redundancy does not occur in (22)a, which is equivalent to "John said: 'I promised to leave'" (or to "John said: 'I (habitually) promise to leave'"), so that say in (22)a introduces the statement attributed to John, and the lower sentence is an indirect-quotation indication of what John said.)

We said that performative sentences have an interpretation which is lacking in non-performative sentences like "I write the letter" and "I know the answer." But the reader will have noticed that while the latter sentence, like all sentences in the present tense with stative main verbs, does not have a performative (or a habitual) interpretation, it in turn has a reading which performatives sentences (like all sentences with non-stative main verbs) lack: The "simple descriptive present." It is important to specify that performative sentences do

not in general have a "simple present" reading, since it happens to be the case that some performative sentences do have this reading, due to the fact that some performative verbs are lexically ambiguous between a [-stative] (performative) and a [+stative] sense. For example, forgive is ambiguous in this way; "I forgive you" can, aside from making a habitual or historical statement, either constitute an (illocutionary) act of granting forgiveness or express the proposition that the speaker is in a "forgiving" state of mind toward the addressee. An utterance of the first (performative) kind, if successful as a performative, would be reported by "He forgave him," and an utterance of the second (stative) kind by "He said that he forgives him."¹⁴ Accuse is similarly ambiguous; it can be used either to predicate a (verbal) act of accusing or an accusatory state of mind. So is find, in the sense of "consider" or "perceive" (this sense takes Noun + Adjective as its complement). Thus an utterance of "I find you guilty" can be either a ceremonial performative, to be spoken by a judge or jury foreman, or a non-performative expression of the speaker's attitude. Two other verbs which contrast a stative, non-performative use with a non-stative, performative use are welcome and recognize. When find, welcome or recognize occurs as the main verb of a performative sentence, its direct object must refer to a human being, but there is no such restriction when these verbs are used non-performatively. Thus, e.g., "I recognize Mr. Jones" (spoken by a chairman) is ambiguous between performative and non-performative, with the former predominating, but "I recognize this cat" and "I recognize your right to dissent" are non-performative state-

ments about the speaker's perceptions or attitude. Sometimes this lexically-based ambiguity is made explicit by the existence of two idioms based on the same verb - e.g. agree to vs. agree with (that),¹⁵ or approve vs. approve of (the first of each pair is [-stative] and performative; the second, [+stative]). Thus "I agree to your proposal can be interpreted performatively, while "I agree with your claim (that your claim is correct)" expresses only a statement about the speaker's attitude toward the addressee's claim, which may or may not be true depending on whether the speaker really concurs with the addressee or whether he is just saying so. I have not looked extensively enough at the subject of the "stative" sense which some performative verbs possess to be able to draw any generalizations which might help to explain why some performative verbs have this extra sense while others do not; we will now bring this digression to a close with a reminder that the non-performative use of these verbs will from this point on be ignored, so that any reference to forgive, welcome, etc. will be to their non-stative, performative senses.

A final reason for the necessity of formulating an explicit definition of "performative sentence" is because we want to define the notion "presupposition of a performative." As I suggested in Chapter I, Section 1b, we need to define "logically proper performative sentence" (i.e. a performative sentence all of whose presuppositions are satisfied) so that we can define "logically proper" for all kinds of sentences and so that we can raise the question of whether elements which trigger presuppositions when they occur in statements, questions, etc. (for

example, definite determiners, accuse, stop, until, etc.) also trigger them when they occur in explicit performatives. (I will argue that they do.) But we cannot raise this question until we first define "performative sentence."

2b. On the impossibility of a syntactic characterization of "performative sentence."

Austin attempted to isolate performative utterances from non-performative ones by listing the features which the former have in common (Lectures V and VI) but he came to conclude (p. 67) that there is "certainly no one absolute criterion . . . of grammar or of vocabulary" which can be relied upon to make this distinction. However, in his discussion of the numerous features which are characteristic of performatives, he considered "inexplicit" or "primary" performatives along with "explicit" ones containing performative verbs. Thus this conclusion was inevitable, since it follows from Austin's conceptualization of "performatives" (including inexplicit performatives) as utterances which perform illocutionary acts that all utterances are performative, since all utterance which are sentences (as opposed to nonsense) can perform illocutionary acts. Our task in this sub-section (at which we shall also fail) is something different: We are attempting to distinguish explicit performative sentences from non-performatives (in particular, from non-performative declaratives). That is, we will make some generalizations about the formal requirements which a sentence must meet if it is to be interpretable as having a performative reading, with respect to tense, restrictions on the subject and main verb, etc.,

and indicate why no combination of these conditions on sentences is necessary or sufficient for distinguishing (explicitly) performative sentences from non-performative sentences.

To begin with, all performatives are in the present tense and non-progressive aspect; this is obvious, since by changing the tense or aspect of a performative we create a sentence the utterance of which describes, or reports, or refers to a performance of the illocutionary act corresponding to its main verb instead of constituting one. The main clause of a performative can contain no modals for the same reason: The sentence "I may promise to give you the money" expresses a statement (actually more than one, since it is ambiguous), but (as I later claim) it is not an explicit promise. (See the discussion of progressive and modal sentences at the end of Section 2c). The agent or deep-structure subject of a performative sentence must be first-person, usually but not always singular - we must refer here to the agent as opposed to the surface-structure subject since some performatives may be passivized, as in "You are hereby authorized...." (The reason that ceremonial performatives are often passivized may be that the use of the passive can be a stylistic feature indicating formal as opposed to colloquial speech, and ceremonial performatives are more often used in "formal" situations.) It should be noted that, as we implied with the use of the term "agent," that the first-person requirement on performatives is semantic rather than syntactic. That is, it is not necessary (although it is usual) for the agent to be grammatically

first-person (that is, I or me), as long as it refers to the speaker. For example, a judge might say "The court finds you out of order," where by "the court" he really means "I, the judge." Monarchs, authors and chairmen also occasionally speak of themselves in the third person, and in doing so may commit performatives (as in "The author insists that the reader be patient with him"). Another requirement for performativeness is that the main verb be [-stative]. Again, it is obvious why this should be so: [+stative] verbs can only be used to attribute states or qualities to the subject of a sentence, so that the combination of subject plus [+stative] verb could never explicitly constitute an action. Thus up to a point we can isolate performative sentences by specifying several formal properties which every performative possesses: The sentence itself must be syntactically declarative; the deep-structure subject (agent) must refer to the speaker; the Aux must be empty (except for Present Tense and possibly Passive); and the main verb must be [-stative]. However, if we used this list as a test for performativeness, we would find that there are non-performative sentences which also meet the conjunction of these conditions; this is because there are many non-stative verbs which never occur as the main verb of an explicitly performative sentence. The following are only interpretable as statements (i.e. they have only a habitual and historical, but not performative readings):

- (23) a. I jump over the brook
b. I scream that the peasants are rising
c. I insult you by calling you a Republican.

Clearly we cannot narrow the filter to shut out these examples by adding

a feature like Ross's [\pm performative] as a condition on the main verb; this would be circular. (Ross's definition of the "performative" feature on verbs is of course not circular, as he assumes the existence of a prior definition of "performative sentence.") The real difference between the sentences of (23) and performative sentences is that the main verbs of the former are not predications of performances of illocutionary acts (even though in (23)b and c verbal actions of different sorts are being predicated of the speaker, screaming and insulting are not, at least not in Austin's sense, "illocutionary acts;" and such sentences are felt to have only a habitual or historical interpretation). But while the notion of a "performative verb" - a verb which may appear as the main verb of a sentence which explicitly performs an illocutionary act - is not necessarily syntactically unmotivated (i.e. such a feature on verbs as [\pm performative] or [\pm illocutionary] may serve to explain why certain syntactic properties of sentences containing certain verbs are related (although this is at issue); see Ross (1971a) for an exhaustive discussion of the syntactic characteristics of performative sentences), it is not an adequate basis for a "syntactic" characterization of performativeness such as we are trying to construct. Furthermore, even if it were possible to characterize the main verb of a performative sentence in terms of purely syntactic features, there is something basically unsatisfying about a definition of "performative" along these lines: It can capture the fact that, say, past-tense or (in general) third-person-subject sentences are not interpreted as performatives, but it says nothing about why this should be so.

Explanatory adequacy is of course not a necessary condition on definitions as this stage of the development of linguistic science - but the inability, in principle, of a definition to explain the relevant observed facts is always a grounds for criticism.

Before closing this sub-section we mention briefly two other attributes which many performatives possess (although unlike the characteristics specified above, these are not always necessary conditions on performativeness). First many performatives have second-person indirect objects, corresponding to the addressee. Often this you is understood, as in "I say (to you) that . . ." or "I apologize (to you)." Other performative verbs do not take personal objects at all: "I move that...", "I consent to your leaving," "I insist on it." Whether or not a sentence can be interpreted as a performative sometimes depends on the person of the indirect object:

(24) I swear to you that I didn't see a thing.

(25) I swear to him that I didn't see a thing.

(26) I promise you that I'll never tell.

(27) I promise him that I'll never tell.

(24) and (26) are performative; they can be used to perform the acts of swearing and promising respectively. But (25) and (27) can only be interpreted as expressing statements in the habitual or historic present. Thus there is some sort of requirement on performatives involving the personal object to the main verb, but if it is to be stated as part of a criterion distinguishing performatives from non-performatives, it would have to be quite complex, since there are verbs which can be interpreted performatively with third- as well as with second-person objects, e.g. accuse in "I

accuse John Smith of being the murderer" or christen in "I hereby christen this child Mary."

Secondly, in Ross (1970a), it is claimed that inserting hereby into a non-performative will produce strangeness or unacceptability; e.g. "*Bill hereby promises you not to squeal." However, the insertability of hereby is not a very good test for performativeness, mostly for what appear to be stylistic reasons. Thus I feel uncomfortable about

(28) ?I hereby say that we ought to tar and feather him,
although it is not as bad as

(29) *I hereby slice this salami.

Also, hereby has a formal ring which is out of place in some performatives:

(30) ?I hereby bet you five bucks that bastard won't last five
more rounds.

(31) ?I hereby warn you that that bull is about to charge.

In addition, Anderson (1968) points out that hereby can be used "anaphorically" in non-performatives: "Jone's reputation as a cricketer is hereby though to have been discredited" (p. 4). Finally, as we suggest in Appendix 3, the insertability of hereby is probably best characterized as a feature of ceremonial performatives, rather than of performatives in general.

Summing up, such characteristics as tense, aspect, person and insertability of hereby do not serve to isolate the class of performative

sentences. We conclude that there is no clear set of syntactic correlates - in terms of morpheme co-occurrence, feature marking, or obligatoriness of syntactic transformations - which apply only to performatives; furthermore, we suggest that a definition cannot be formulated which would explain (rather than just summarize) the performative/non-performative distinction unless recourse is had to the concept of an illocutionary act.

2c: A definition of "performative sentence" in terms of the notion of "corresponding illocutionary act."

In How to do Things with Words, Austin begins by attempting to isolate "performative" utterances from other kinds, but after the first few lectures he concentrates rather on what "explicit" and "implicit" performative utterances have in common. What they have in common is the ability to perform illocutionary acts (see Section 1); however, as linguists, we are interested in sentences as well as in utterances, so we must address ourselves to the differences, as well as the similarities, between explicitly performative sentences and non-performative sentences - since if we are to investigate what performative sentences mean we must say what they are. (In particular, as I pointed out, we must define "performative sentence" so that we can define the notion of "logical propriety" as applied to these kinds of sentences.) As in the previous two chapters, that aspect of the "meaning" of a sentence (on one reading) on which attention will be focused will be its logical consequences. Of course we cannot speak of the "entailments" of explicit performatives; since such sentences do not express

statements (when they are interpreted performatively), so that the properties of truth and falsity cannot appropriately be attributed to them, there can be no such thing as a "condition on the truth of a performative," which is what an "entailment of a performative" would be.¹⁶ On the other hand, we can find out a lot about what performative sentences mean by looking at the logical consequences of statements of the form "Speaker uttered S," where S is a performative sentence. But again, we have no framework within which to investigate the difference in meaning between such statements when S is performative as opposed to when S is non-performative, until we can define "performative sentence." In the previous section I argued that (explicit) performative cannot be characterized in terms of their syntactic form; in the following section, we look at the logical relationship between sentences which report the performance of the corresponding illocutionary act (e.g. between "John said 'I promise...'" and "John promised..."), and conclude that although sentences of the (semantic) form "Speaker uttered S" do have unique kinds of entailments when S is performative, the ambiguity of sentences which report or describe the performance of illocutionary acts, as well as the ambiguity of performative sentences themselves, makes it impossible to give a non-circular definition of "performative sentence" in these terms without bringing in the additional notion of "illocutionary act." Thus although I insist that "(explicit) performative sentence" must be defined and distinguished from other sentences utterances of which may perform illocutionary acts, in order to account for numerous semantic facts, I find it impossible to do this coherently without referring to illocution-

ary acts in general.

As I stated in Section I, I am adopting Fraser's (1972) claim, based on Searle (1970), that there are three kinds of conditions on the successful performance of an illocutionary act by an utterance, propositional content, essential and preparatory, as well as his framework in which these three kinds of conditions are as a group distinguished from sincerity and preparatory conditions on the "non-defectiveness" of a successful performance of an illocutionary act. We will go into the topic of success conditions on illocutionary acts in more detail in Chapter V; for the present we will merely refer the reader to Section I for the definitions of these different types of conditions and illustrate what they are meant to capture by listing tentative formulations of the conditions on the successful performance of the act of promising: (My formulation of the preparatory conditions differs somewhat in content, but not in spirit, from those proposed by Fraser and Searle; the advantages of my formulation over theirs are argued in Section 3b.i of the present chapter.)

Propositional Content Conditions: The utterance must express (as a complement of promise, if the utterance is performative) a statement in the indicate mood and future tense, to the effect that a certain action will be performed or a certain situation will come about.

Essential Condition: "The speaker intends the utterance to count as placing him under the obligation to bring about the act specified" (Fraser, p. 12).

Preparatory Conditions:

1. The addressee would "prefer" the situation's coming about to its not coming about.
2. The addressee would be "affected" by the situation's coming about.
3. The speaker has (real) "control" over the situation's coming about.

We will proceed presently to define "performative sentence" in terms of the notion of "successful performance of an illocutionary act" (by the utterance of a sentence), but first, I must confess that the definition will be inadequate (in the sense of being non-algorithmic) in two ways: First, it relies upon an intuitive rather than a well-defined concept of "illocutionary act" (the difficulty of defining this concept explicitly is noted in Chapter V, Section 1), and second, it will be only a schematic definition, as in order to apply it (to an arbitrary sentence, in order to determine if the sentence fits the definition) it would be necessary to have a complete specification of all the success-conditions on all illocutionary acts, since the fulfillment of the conditions on a given act is the factor which determines whether a sentence whose main verb corresponds to that act is performative. Ultimately, the characterization of "successful" as applied to the performance of an illocutionary act by an utterance must be determined empirically (just as the definition of "grammatically well-formed in English" as applied to a string of English morphemes is, on one level, a statement of the intuitive notion which the term is meant to capture, but on another level, it is the grammar itself). Therefore this second

"inadequacy" in my definition of "performative" is not, like the first, a buck-passing but merely a gap which researchers like Fraser, Searle and myself are beginning to attempt to fill.

Given the aforementioned framework for stating the success-conditions on illocutionary acts, the definition of "performative sentence"¹⁷ can be formulated as follows:

Definition of "Performative Sentence":

A sentence (whose main verb corresponds to an illocutionary act¹⁸) is performative if (1) it satisfies the propositional content conditions on the performance of the illocutionary act corresponding to its main verb and (2) an utterance of it successfully performs that illocutionary act when the essential and preparatory conditions on its successful performance are satisfied.

Two comments on this definition: First, since when referring to "sentences" it is always necessary to distinguish between the sentence itself and its readings (which specify the statements, questions, promises or whatever, which the sentence may be used to express), we should point out that the ambiguity of every performative sentence between performative, habitual, and historical readings can still be accounted for without referring (in the definition of "performative sentence") to the "performative reading" of such a sentence (which would, of course, be circular). That is, not all utterances of performative sentences successfully perform the corresponding illocutionary act; in particular an utterance of a sentence beginning "I promise" may fail to promise successfully because the speaker of it did not thereby intend to make a promise, but rather a statement about his own habitual actions (or, improbably but conceivably, a statement in the histor-

ical present about a past action which he performed); or perhaps he was just reading a line from a play. The fact that an utterance of "I promise" fails to promise successfully under such circumstances does not, however, prevent the sentence "I promise" from being classed by the definition as a "performative" since the "essential condition" on promising - which requires, in effect, that the speaker must intend his utterance to count as a promise - is not fulfilled in these situations. That is, it follows from my definition of "performative sentence" that an utterance of a performative sentence must successfully perform the corresponding act only if that utterance was intended to convey the performative reading of the sentence, for only then is the essential condition satisfied; conversely, even if not every utterance of a sentence is successful in performing the illocutionary act corresponding to its main verb, the sentence will satisfy the definition of "performative" as long as an utterance of it performs the corresponding act successfully whenever, in addition to the preparatory conditions being met, the utterance is intended as an attempt to perform the act.

My second afterthought with respect to this definition of "performative sentence" is that an equally adequate (and inadequate) definition could be constructed along similar lines were one to adopt even a quite different framework for classifying the conditions on the success of illocutionary acts. That is, the definition as it stands is based upon a certain notion of a "successfully performed illocutionary act," and the fact that some success-conditions are conditions on sentences (the propositional content conditions) while others are conditions on the circumstances under which a sentence is uttered, made it necessary for the notion of "success" referred to in the definition to be broken down

into the three notions of "satisfaction of the propositional content conditions," etc. But neither Fraser's notion of "success" nor the classification we used is essential to the definition itself; instead of "successful," we could have spoken in terms of Searle's concept of "successful and non-defective" or Austin's "felicitous," or some other analogous but distinct attribute, defining a sentence as performative if an utterance of it _____ly performs the illocutionary act corresponding to its main verb when all the conditions on its _____ness are met. All these definitions have the same basic flaws, pointed out earlier, but all serve to distinguish, say, "I promise to leave" from the non-performative "I will leave" on the grounds that the latter lacks a main verb corresponding to an illocutionary act, and from "John promised to leave" on the grounds that no utterance of this non-performative can ever successfully perform the illocutionary act of promising. (However, no definition along these lines succeeds in excluding sentences which have all the attributes of performatives except that their main verbs are progressive (e.g. "I am promising to be there"), since the utterance of such a sentence does sometimes successfully perform the illocutionary act corresponding to its main verb. This is a problem, since such sentences can, unlike performatives, be interpreted as expressing non-habitual statements in the present tense, which may be true or false (they also have a "historical present," although not a "habitual" reading). We will deal with modifications in the theory which will account for the difference between these and performatives at the end of this subsection.¹⁹

By definition, an utterance of a performative sentence successfully performs the illocutionary act corresponding to its main verb if and only if all the conditions on the successful performance of that act are met. I would like to introduce at this point the terminology of "performance of an illocutionary act by a performative utterance" (i.e. by an utterance of a performative sentence), as opposed to "successful performance of an illocutionary act" (by any kind of utterance). That is, in speaking of the performance of an illocutionary act by the utterance of a performative sentence, I will distinguish between the successful performance of the act by the performative utterance and the not necessarily successful performance of the act.²⁰ In particular, we will speak of a performative utterance as having "performed" (although not necessarily successfully) the corresponding illocutionary act when the uttered sentence fulfills the propositional content conditions on that act and the essential condition (although not necessarily the preparatory conditions) on the successful performance of that act are met. That is, if all three sets of conditions on the successful performance of an illocutionary act are met, the utterance of a performative whose main verb corresponds to that act "successfully performs" the act; if a preparatory condition is not met, but the others are, the (performative) utterance "performs" the act, although not necessarily successfully; if a propositional content condition or the essential condition is not met, the utterance cannot be said to perform the act at all, much less successfully.

The need for this terminological distinction is based upon the following empirical claim: That sentences of the form "John promised

{to
that. . ." do not necessarily entail that John successfully performed the illocutionary act of promising; and that in general, for non-ceremonial acts and utterances,²¹ when an explicit performative is uttered it is not necessary that the act have been successfully performed - i.e. not all of the preparatory conditions on the success of the act need be satisfied - in order for a statement which reports the performance of the corresponding illocutionary act to be true. For example, if John says to Mary "I promise to be there," then even if Mary does not want John to be there, thus rendering John's utterance unsuccessful as a performance of the act of promising (on account of the violation of one of the preparatory conditions on promising), we still want to say that there is a sense in which it is true that "John promised Mary that he would be there," as long as John intended his utterance to count at a promise. On the other hand, when John utters to Mary a sentence like "I will be there," which is not an explicit performative of promising, one would not want to say that

(32) John promised Mary that he would be there

is true if, say, Mary doesn't want John to be there. That is, under these circumstances John's utterance may well count as a threat, or a warning, or merely as a (predictive) statement, but since not all the preparatory conditions on promising are met, it does not count as a promise and (this being recognized by native speakers of a language) it would not be reported as one. Therefore we postulate two readings for (32), an "explicit" reading which asserts that an explicit performative of promising has been uttered, and an "implicit" reading, which

asserts that a non-performative sentence has been uttered which counted as a promise. The two readings differ not only in their assertions but also in the following respect: In order for the explicit reading of (32) to be true, it is only necessary that John have uttered the relevant kind of performative with the intention that his utterance should count as placing him under the obligation to "be there" (i.e. as long as he did not thereby intend to make, instead, a habitual or historical statement, to recite a line of poetry, etc.). That is, the explicit reading of (32) is true whenever the propositional content and essential conditions on promising hold. On the other hand, in order for the inexplicit reading of (32) to be true, John's non-performative utterance must have successfully performed the act of promising - that is, the preparatory conditions, as well as the other two kinds, on John's utterance being a (successful) promise must hold. Thus we are claiming that there are three ways the act of promising can be performed: Explicitly and successfully, explicitly but not necessarily successfully (in either case the explicit reading of "He promised..." is true), and inexplicitly and successfully (in which case the inexplicit reading of "He promised" is true). (But there is no such thing as an "inexplicit unsuccessful" promise, warning, etc.; see footnote 20.) Most other illocutionary acts can also be performed in these three ways; the exceptions are most "ceremonial" acts, which can only be performed by the uttering of an explicit performative sentence (see Appendix 3), and illocutionary acts whose corresponding verbs are not performative verbs (e.g. threatening, praising and criticizing, can only be performed inexplicitly, since threaten, praise and criticize cannot occur as the main verb of explicitly performative sentence; see Chapter V, footnote 2).

To summarize the points I have been making: In order for the explicit reading of (32) to be true, John need only have uttered "I promise to be there" (or an equivalent explicit performative) with the intention of placing himself under the obligation to "be there." If he has, then we will say that, by virtue of John's having uttered that sentence with that intention - i.e. by virtue of the propositional content and essential conditions on promising being met - he has performed the illocutionary act of promising,²² although if the preparatory conditions on promising were not satisfied by the circumstances surrounding his utterance, he did not promise successfully. (We will also say that in such a situation (in which the essential but not necessarily the preparatory conditions are met) the speaker's performative utterance "counts as" a promise, an accusation, etc., although not necessarily as a successful promise, accusation, etc.) On the other hand, the truth of the inexplicit reading of (32), and the performance of an act of promising by an utterance of a non-performative sentence, require the satisfaction of all success-conditions - including the preparatory conditions - on promising. (The case of ceremonial acts is slightly different: In order for these to be performed (at all, much less successfully), it is necessary that the appropriate "authorization" condition hold, but this, as I pointed out (footnote 21), must be construed as a preparatory condition on the success of such acts. Thus ceremonial performative utterances do require the truth of (at least) one preparatory condition in order to count as performances of the corresponding illocutionary act.)

Given the truth of my empirical claim that "John promised" does not necessarily mean that John successfully promised (unless his utterance was not an explicit performative), and given the adequacy of my terminology which stipulates that the conditions on the "performance" of an illocutionary act by an utterance of a performative sentence are, to the specified extent, weaker than the conditions on the "successful performance" of that act by that utterance, we can reformulate (and slightly simplify) our definition of "performative sentence".

Revised definition of "Performative sentence":

A sentence is performative if (1) it satisfies the propositional content conditions on the illocutionary act corresponding to its main verb and (2) an utterance of the sentence performs that illocutionary act (although not necessarily successfully) when the essential condition on its successful performance is met (i.e. as long as the utterance is intended to perform that act).²³

Speakers of English who do not find such sentences as "John promised to leave" ambiguous between an explicit and an inexplicit reading, or who accept the ambiguity but feel that the only difference between the two readings is that the former reports the utterance of an explicit performative and the latter, of a non-performative (that is, such speakers would take both readings of "John promised..." to entail that the act of promising was performed successfully by John, either by an

explicit performative or a non-performative utterance, as the case may be), would not, of course, accept this revised definition of performative. As I point out in footnote 23, disagreements as to the adequacy of this modified definition can be reduced to disagreements over facts, so arguments to the effect that the modification represents an improvement are not really to the point. Thus my demonstration immediately below that this revised definition does have the advantage of accounting for the non-performativeness of first-person, present tense sentences whose main verbs are performative but in the progressive (e.g. "I am promising...") is addressed only to those whose perception of "the facts" in these cases concurs with mine.

The fact that our definitions of "performative sentence" refer to "the illocutionary act corresponding to the main verb" accounts for the fact that explicit performatives are limited to sentences with this kind of main verb. Among these sentences, those whose (deep structure) subjects do not refer to the speaker and those whose Auxiliaries contain Perfect or Past tense are ruled out - they fail the conditions of the definition - since they can never be used to perform the corresponding illocutionary act. Even if, say, the speaker of a sentence like "I promised..." or "John promises..." is under the delusion that an utterance of such a sentence is capable of performing the act of promising - so that it is possible, theoretically, for the essential condition that the speaker intends his utterance to count as placing him under an obligation to hold - utterances of such sentences never count as promises, even as unsuccessful ones, so they do not satisfy the definition. However, sentences which fulfill the person and

tense requirements and whose main verbs are performative but in the progressive aspect can be used to perform the corresponding illocutionary act (see also footnote 10a). For example, even though we want to say that

(33) I am promising to leave

is not performative, we must admit that it fulfills the propositional content conditions on promising (which, in the case of explicit performatives, constrain only the complement, not the upper sentence) and there are circumstances under which an utterance of this sentence can count as a (successful) promise, just as an utterance of "I will be there" sometimes (successfully) performs the act of promising. My revised definition of "performative sentence" will, given some additional "facts," correctly exclude such sentences from the class of performatives: This definition says that if a sentence is performative an utterance of it "performs" or "counts as a performance of" the corresponding act whenever the propositional content and essential conditions are satisfied. To determine whether this requirement holds of (33), we must consider whether, given the fact that this sentence was uttered and the fact that the essential condition, but not necessarily the preparatory conditions, on promising hold, it is the case that the speaker (thereby) promised (although perhaps not successfully). That is, if (33) is performative, and the speaker intends his utterance of it to be understood as a promise, then, even if a preparatory condition on promising is not met, the explicit reading of

(34) The speaker promised to leave

should, as a result of the speaker's utterance of (33), be true on its explicit reading (which does not entail that the preparatory conditions on promising were met). On the other hand, if (33) is not performative, then an utterance of it could only be reported by the inexplicit reading of (34); but this reading can only be true when the preparatory, as well as the other, success-conditions on promising are met (see footnote 20). Thus to determine whether (33) is performative (according to my revised definition of performative) we must ask ourselves whether, given an utterance of (33) and the satisfaction of the essential condition on promising, (34) can possibly be true even when the preparatory conditions on promising are not met. I would say no;²⁴ those who feel that sentences like (34), which report the performance of illocutionary acts, can never be true unless the act in question was successfully performed would also have to say no. (But there may be an in-between group who accept my revised definition of performative but who feel that an utterance of (33) does count as an act of promising - i.e. (34) can be truly reported - even when not all the preparatory conditions on promising are met. Given this perception of the "facts" of the case, no definition along the lines we have been considering succeeds in distinguishing (33) from performatives.) The implied analysis of (33), given my own intuitions as to its meaning, would be that it is ambiguous between a present progressive reading and an "historical" reading (see footnote 25), both of which express statements - and the statement expressed by the former is true only if by virtue of having uttered that statement the speaker successfully (but inexplicitly) performed the act of promising. Thus in answer

to the question: Does the revised definition of performative capture the distinction between performatives and progressive sentences like (33)? - I can only say that since the application of the definition involves the consideration of intuitions which vary among individuals, this test applies correctly to (33) - i.e. judges it non-performative - only if the intuitions considered agree with my own.²⁵

2d: On the impossibility of a "purely semantic" definition of
"performative sentence."

So far we have argued that (1) it is necessary to make a distinction between (explicitly) performative sentences (which can be used to make performative utterances), and non-performative sentences in order to account for various semantic facts, (2) this distinction cannot be made purely in terms of the syntactic attributes of performative as opposed to non-performative sentences, and (3) the notion of "performative sentence" can be defined in terms of the concepts "corresponding illocutionary act" and "successful performance of an illocutionary act." In the present section we set up a straw man in the form of an attempt to define "performative" in the purely semantic terms of truth-conditions on statements containing performative verbs, without reference to either of the theoretical constructs we relied on in our definition in the previous sub-section, illocutionary acts and their successful performance. We will consider several modifications of this approach and show that each of these has defects which prevent it from fulfilling both the condition we have arbitrarily placed - i.e.

that the definition cannot assume any prior notion of "illocutionary act" - and the usual conditions on definitions (e.g. completeness consistency, etc.).²⁶

The basis for the "purely semantic" approach to defining "performative sentence" is the fact that a (perhaps "the") fundamental distinction between performative sentences and other declaratives is that the proposition "Speaker uttered S at time t" (where S is a declarative sentence) has certain logical consequences when S is a performative, which are lacking when S is non-performative. Compare:

(35) a. I promise to leave.

b. I leap from my desk.

The proposition that (35)a has been uttered at time t, in conjunction with the proposition that the speaker intends his utterance of (25)a to count as a promise, entails, as we argued in the last sub-section, the proposition that the speaker of (35)a promised, at time t, to leave. On the other hand, (35)b, which has only a habitual or historical interpretation, can only be used to make a statement, this statement being either true or false depending on whether the state of the world is such that the speaker of (35)b either habitually does or at one time did leap from his desk. The proposition

(36) Speaker uttered (35)b at time t

is logically independent of the proposition

(37) Speaker leaped from his desk at time t,

regardless of what the speaker intended to accomplish by means of his utterance. Similarly, the difference between (35)a and

(38) I intend to leave

lies in the fact that we cannot infer from "Speaker uttered (38) at time t" that "Speaker intended, at time t, to leave." This is because

(39) Speaker intended to leave

is false if the speaker did not sincerely intend to leave (i.e. if the statement made by (39) is not an accurate description of the real intentions, if any, of the speaker), regardless of whether or not the speaker said that he intended to leave. However, "Speaker promised to leave" can be true even if the promise made in the utterance of (35)a was insincere in that the speaker did not really mean to leave; that is, the speaker's being insincere does not violate the conditions on his performative utterance being a promise, or on its being successful. One can "promise insincerely" but not "intend insincerely." Furthermore, if my analysis of

(40) I am promising to leave

is correct, and (40) is not a performative but rather a sentence which (aside from expressing the statement that the speaker is promising) may be used to make a promise inexplicitly, it follows that "Speaker uttered (40) at time t" does not entail that at time t, it is true that

(41) Speaker was promising to leave.

This is because even though (40) may, as we argued, be uttered with the intention of making a promise, the statement expressed by (40) that the speaker is promising is only true if the speaker's attempt at (inexplicit) promising was successful, and the same applies to the

statement expressed by (41). On the other hand, we argued in the previous sub-section that an utterance of an explicit performative need not be successful in order to be reported as having merely "performed" the corresponding act. All this points to a special logical relationship between a proposition of the form "Speaker uttered S" and a related (i.e. derived) proposition of the form "Speaker did X" when S is an explicit performative, which does not exist when S has a non-performative or progressive main verb.

Austin noticed this special relationship, and used it in two attempts to define "performative utterance" in terms of the meaning of related statements. First, he suggested, as a test for whether or not a given first-person, present-tense utterance is performative, that we ask "whether it makes sense to say 'Does he really?' For example, when someone says . . . 'I bid you welcome' . . . we could not say . . . 'I wonder whether he really does bid him welcome?'" (p. 79). That is, an utterance of "I bid you welcome" is grounds for the truth of a statement that the speaker bid the addressee welcome (even if the speaker was in fact in a non-welcoming state of mind toward the addressee, so that his utterance wasn't sincere, it is still true that he bid the addressee welcome, since he said he did), so it "makes no sense" to ask - i.e. it is not at issue in this context - whether this statement is true. This test is meant to distinguish performatives from utterances of sentences with stative main verbs: When someone says "I admire you" (which is not performative), we may well wonder "if he really does admire him," since if the speaker was insincere it is not true that he really admires the addressee, even though

he said he did. Another test for performativeness discussed by Austin amounts to the following: "I V X" is performative if in saying "I V X" I was (necessarily) V-ing X. Thus in saying "I promise to leave" I am promising to leave, but in saying "I intend to leave" I am not necessarily intending to leave - whether or not I intend to leave is independent of whether or not I say that I do. Similarly, in saying "I am jumping" I am not necessarily jumping. (Austin himself, however, eventually rejects this "test" as too vague (p. 123 and elsewhere), since we do not always have a clear idea of what is meant by "in saying that" as opposed, for example, to "by saying that.")

We can use such observations on Austin's and my part to construct a definition of performative once we formalize this notion of a related proposition of the form "Speaker did X." So let us define the "reportive version" of a sentence as follows: For any sentence S with a deep structure of the form AV(B)X, where A is the subject (agent) of V and B is its direct object, if any, the reportive version of S (henceforth RV(S)) is a sentence with the deep structure "Speaker V'ed (addressee) X."²⁷ For example, the RV's of (42)a-g are (43)a-g respectively (note that (42)a-e are performative; f and g are not):²⁸

- (42) a. I accuse you of stealing the money.
b. I promise that I'll do what you say.
c. I christen this ship the SS Titanic.
d. The chair recognizes Mr. Jones.
e. I give you my word.
f. I am happy to see you.
g. I write letters to the editor.

- (43) a. Speaker accused addressee of stealing the money.
b. Speaker_i promised addressee_j that he_i would do what he_j said.³⁹
c. Speaker christened that ship the SS Titanic.
d. Speaker recognized Mr. Jones.
e. Speaker gave addressee his word.
f. Speaker was happy to see addressee.
g. Speaker wrote letters to the editor.

(Actually, our choice of this particular form for the RV is somewhat arbitrary; "Speaker is V-ing (addressee) X" would do as well.)

This abbreviation allows us to define "performative sentence" as follows:

A sentence S with a deep structure of the form AV(B)X is performative if "Speaker uttered S at time t" entails "RV(S) at time t."³⁰

Clearly, in order to consider the adequacy of this definition of "performative sentence" we must examine the meaning of sentences which report the performance of an illocutionary act. In particular, we must at least determine whether RV(S) is ambiguous when S is performative and specify (i.e. construct schematic devices which will predict) the truth-conditions on (each reading, if there are more than one, of) RV(S) for each of those sentences which an adequate definition would label "performative" (i.e. for those sentences which we intuitively feel to be performative, and whose special nature we want the definition to capture). Below we extract from the writings of several linguists

what we take to be their judgments on the meanings of such reportive sentences, and show that the "purely semantic" definition we have offered fails to characterize the performative/non-performative distinction, no matter whose version of "the facts" we are trying to account for.

Fillmore (1971a) claims that

(44) John accused Harry of writing the letter presupposes "that there was something blameworthy about writing the letter" (p. 282); in general, he asserts that statements containing the predicate accuse presuppose that the action or situation referred to in the complement of accuse is "blameworthy," or "BAD." Thus in Fillmore's analysis it is a truth-condition on (44) that writing the letter was blameworthy. It is also, according to him, a truth-condition on (44) that "John said that Harry did it [write the letter];" this is the "Meaning" or assertion of (44). Since Fillmore does not specify what sort of utterance John may have or must have used (in saying that Harry wrote the letter) in order for (44) to be true, it would be consistent with his analysis of the meaning of (44) to say that this assertive truth-condition could be satisfied either by John's having uttered to Harry an explicit performative like "I accuse you of writing the letter" or by John's having uttered to Harry a non-performative which might count as an accusation, such as "It was you who wrote the letter." That is, either a performative or a non-performative utterance on John's part, which expressed (or whose complement, in the performative case, expressed) the statement that Harry wrote the letter, would be grounds for the truth of (44), as long as certain

conditions hold, including the "badness" condition (so that if (44) is to be considered ambiguous, the only difference between the explicit and inexplicit readings would be the assertions made by each about what kind of utterance, performative or non-performative, John must have made in order for (44) to be true). This extension of Fillmore's analysis falls right into line with Fraser's (1971 and 1972) attitude toward sentences like (44) (see footnote 23): In the latter's framework, (44) is only true when, in addition to John's having expressed (in a performative or non-performative utterance) the statement that Harry wrote the letter, it is also the case that all the success-conditions on the illocutionary act of accusing are met. Even if Fraser does not agree that Fillmore's suggested presupposition of sentences like (44) is a success-condition on "accusing," it would be accurate to say that these two, in their judgments about sentences which report the performance of illocutionary acts, have in common the judgment that such sentences are not necessarily true just because the corresponding performative was uttered. Fillmore says that (44) has at least one presupposition which is triggered by accuse, and clearly this presupposition is not necessarily true whenever it is true that John said that Harry wrote the letter; Fraser would have to say, at least, that (44) entails that the essential condition on accusing (that the speaker intends his utterance to count as an accusation) was met when John made his utterance. Therefore, given what we can deduce about Fillmore's or Fraser's intuitions as to the logical relationship between (44) and the statement that John said to Harry "I accuse

you of writing the letter," it is clear that our proposed "purely semantic" definition of "performative" does not account for the performativeness of "I accuse you."

A quite contrary view of sentences which report the performance of illocutionary acts is taken by Karttunen (1971c), who says that performative verbs (as well as other "verbs of saying," e.g. the "manner-of-speaking" verbs) block off the presuppositions which their complements would have if they stood alone.³¹ Karttunen only considers the logical consequences of non-performative sentences with performative main verbs (i.e. he does not say whether these presuppositions are blocked in performative sentences themselves); for example, he claims that

(45) Harry has asked Bill to introduce him to the present

King of France

does not presuppose that there is presently a king of France. That is, Karttunen does not regard the existence of the King of France to be a truth-condition on (45). He does not say whether, in his opinion, performative verbs trigger presuppositions (see footnote 22); but in any case his claim that (45) lacks this presupposition indicates that the set of conditions he would probably place on the truth of reportive sentences like (45) and (44) would probably be weaker than that of Fillmore, Fraser, or myself. This leads us to suspect that someone sharing his attitude toward such sentences might, therefore, consider the reportive version of a performative to be necessarily true whenever that performative was uttered, so that our proposed "semantic" defini-

tion of performative would (given these intuitions) accurately predict the class of performative sentences. This suspicion turns out to be wrong, though, since even someone who held that the only truth-condition on the explicit reading of a sentence like

(44) John accused Harry of writing the letter

is the proposition that John said to Harry "I accuse you of writing the letter" (or a paraphrase of this) would not say that every utterance of this sentence necessitates the truth of (44). That is, no matter how weak a person judges the truth-conditions on (44) to be, he must recognize that not every utterance of "I accuse you" can be truly reported as "Speaker accused addressee," since not every utterance of this performative is intended to perform the act of accusing (i.e. the speaker's intention may be to make a habitual or historical statement, or to quote a line of poetry, etc.). Thus the proposed definition would only apply correctly if we made one of the following two (unacceptable) modifications: The first would be to specify that only an utterance of "I accuse you" on its performative reading necessitates the truth of "Speaker accused addressee" - but this is of course circular, as we define the "performative reading" of a sentence in terms of the notion of "performative sentence." The other would be to modify the definition so that what is necessary in order for a sentence to be performative is that the statement that the sentence was uttered, in conjunction with the statement that the essential condition on the success of the corresponding illocutionary act was thereby met, entails the RV of that sentence. This modification is, however, unacceptable on our own terms since it refers to the notion of

the successful performance of an illocutionary act,³² thus violating the restriction to "purely semantic" terms which we attempted to place on the definition of performative.

A similar problem results from the proposed definition given my own account of the truth-conditions on the RV of a performative. That is, I claim that sentences which report the performance of an illocutionary act, including the RV's of performatives, are ambiguous, the truth-conditions on the explicit reading of such a sentence being (1) the utterance of the corresponding performative sentence, (2) the satisfaction by that sentence of the propositional content conditions on the relevant act, and (3) the satisfaction of the essential condition on that act (and, if the performative act is "ceremonial", (4) the satisfaction of the "authorization" condition on that act). Thus for me, the RV of a performative is also not necessarily true whenever the performative was uttered. We conclude that the meaning of the RV's of performatives, although relevant to any discussion of the meaning of performative sentences, is not such that the reportive version is in general construed (given the judgments of the above-mentioned writers on the subject) to be a necessary logical consequence of the statement that the corresponding performative was uttered; this indicates that the chances look grim for a coherent and non-circular definition of 'performative sentence' in purely semantic terms without reference to the notion of the success of an illocutionary act.

Section 3: On defining the notion "presupposition of a performative sentence."

3a. Statement of the hypothesis.

In Chapter I, Section 1b, we defined a notion of "logical propriety" for statements, questions, and orders/requests, specifying explicitly what it is that we mean when we say that all the presuppositions of one of these are true, in a given situation. We then extended the notion of logical propriety so that it would apply as well to (declarative, interrogative or imperative) sentences (on a given reading): when we say that a sentence is logically proper, we mean that whatever reading of that sentence is under discussion expresses a statement, question, etc. all of whose presuppositions are true. But we noted that explicitly performative sentences, although they are of a declarative sentence-type, have a reading on which they do not (in general; see footnote 10) express statements; this meant that the notion of logical propriety, as we had so far defined it, did not apply to such sentences. And we insisted that the lack of a characterization of "logically proper performative sentence" constituted a significant gap in semantic theory, since human linguistic capacity includes the ability to recognize a certain kind of defect in utterances - the kind we are describing by the terms "logical impropriety" and "presupposition failure" (i.e. falsity of presupposition), - and since it is intuitively felt that whatever is wrong with an utterance of a non-performative sentence when it contains say, a non-referential definite noun phrase, is also wrong with a performative sentence containing the same NP under the same circumstances.

The problem is that there are a number of empirical claims which we feel justified in making - for example, a claim that "I promise to shave the present King of France" presupposes that "the present King of France" has a referent - but these claims are meaningless until we say that it means for a performative sentence to presuppose a statement, or to be logically proper.

Since we claim that any performative sentence presupposes (on its performative as well as on its habitual and historical readings) that all definite NP's occurring in it (including the subject and indirect object, if any, of the upper clause containing the performative verb) have referents, a minimal condition on any characterization of "presupposition of a performative" is that it account for the fact that definite NP's trigger the same presuppositions in performatives as in statements, questions, etc. In that case, I propose that the "unmarked hypothesis" - the most "obvious" approach toward determining what we want the notion of "logical propriety" to cover - would be one which assumes that all elements which are presupposition-triggering when they occur in statements, questions, etc. trigger the same presuppositions in explicit promises, accusations, etc. as they do elsewhere (i.e. the presupposition schemata associated with them contribute in the same way to the semantic interpretation of performatives as to that of non-performatives in which they appear). To take some non-nominal examples, continue, stop and until certainly seem to trigger the same presuppositions in performatives as they do in other kinds of sentences; for example, we would want to characterize

(46) I promise to stop beating my wife
as "logically improper" when uttered by someone who does not habitually beat (or who is not, at the time of the utterance, beating) his wife (it also presupposes, apparently, that the referent of I is married and male). Similarly, an utterance of

(47) I insist that you continue doing push-ups until the
timer goes off

is "inappropriate" in a certain kind of way - the way we want to call "logically improper" - unless it is true that the addressee is engaged in doing push-ups at the time of the utterance of (47) and also true that the timer has not yet gone off. What is not so clear is whether we are justified in assuming that those performative verbs which trigger presuppositions when they occur in sentences which report that an illocutionary act has been performed trigger the same presuppositions when they occur as the main verb of a performative sentence. Thus, for example, the performative verb thank is factive: Both

(48) John thanked Mary for helping him
(when it is interpreted inexplicitly) and

(49) John didn't thank Mary for helping him
entail that Mary helped or is helping John. The factivity of thank evidently carries over to its use as a performative verb: Whatever is wrong with

(50) I thank you for helping me
when the addressee didn't help (or isn't helping) the speaker is something which we want our notion of "logically improper" to cover.

Thus, we assume that (50) presupposes that the addressee helped or is helping the speaker, and ask what this might mean. Note that it is not adequate to treat (50) in the same way as we would treat, e.g., "I say that you helped me," and state that (50) is logically proper whenever the proposition expressed by its complement (that the addressee helped or is helping the speaker) has a truth value, since this complement does not itself carry the presupposition we are claiming for (50). There are also non -factive performative verbs which can be claimed to trigger presuppositions in non-performatives; accuse is one, as we mentioned in Chapter I.

Now whether or not a given performative has a given statement as a presupposition is not something which can be argued in terms of theory - it is rather a matter which we claim that native speakers can decide intuitively, if not always confidently or unanimously. So we will take as data the proposition that all presupposition-schemata, associated with all kinds of elements, which apply to the deep structures of non-performative sentences containing the associated element (to derive that aspect of the semantic interpretation of a given reading of the sentence which it has by virtue of containing that element) also apply to the deep structures of performative sentences containing these same elements.³³ If this is the ground we want our characterization of "logically improper" to cover, it follows that the standard by which we will measure any proposed definition of "presupposition of a performative" is the extent to which it predicts that performatives containing elements which are presupposition-triggering when they appear in a statement also trigger these presuppositions

when they appear in a performative.

Since (as we are assuming) the presupposition schemata associated with various elements apply in the same way to performatives as to other kinds of sentences, we would expect the class of statements presupposed by a performative to differ only in a few minor and easily specifiable respects from the set of presuppositions of the reportive version of that performative.³⁴ This is not exactly the case, however: Rather, I am claiming (i.e. as a description of my own semantic intuitions, not as a matter of theory) that the presuppositions of a given performative sentence are analogous to (that is, at most some of them will differ only by insignificant details from) those of the inexplicit reading of the RV of that sentence. I must modify the "unmarked hypothesis" in this manner, since in my dialect, the explicit reading of the RV of a performative has no truth-conditions except the necessity of the performative's having been uttered (this guarantees the existence of referents for the "Speaker" and "addressee" which appear as the subject and object respectively of the main clause of the RV) and the necessity that the essential condition on the success of the corresponding act (and, if the act is ceremonial, the "authorization" condition) be satisfied; and none of these can be regarded as presuppositions of the explicit reading of the NV (or, for that matter, of its inexplicit reading), since they are never entailments of its negation. Therefore the explicit reading of the RV has no presuppositions triggered by the performative verb.³⁵ The truth of the inexplicit reading of a sentence which reports the

performance of an illocutionary act, on the other hand, requires that in the truth of the propositions triggered by elements occurring in the complement of the main verb; and such statements often also have presuppositions triggered by the main verb itself.³⁶

To demonstrate this latter point, we will examine in detail the truth-conditions on the inexplicit readings of paradigmatic sentences which report performances of the act of promising, extrapolating fairly freely to the general case of statements which report the performance of an illocutionary act by an utterance of a non-performative sentence. Starting with the premise that what such statements mean is that the corresponding act has been successfully performed - that is, the assumption that the truth-conditions on such statements are exactly the success-conditions on the performance of the corresponding act (by a non-performative) - we will examine the conditions on successful promising which have been proposed in earlier writings on the subject (namely by Searle and Fraser) and indicate how they must be modified if they are to serve also as accurate statements of the truth-conditions on the inexplicit reading of a sentence which reports that a (successful) act of promising has been performed. That is, we will criticize the wording of these proposed success-conditions on promising as though they had been put forth as schematic formulations of the truth-conditions on inexplicitly interpreted reportive statements. Once we have a statement of the truth-conditions on the inexplicit readings of sentences which report promises (which will also serve as our reformulation of the content of the conditions on successful promising proposed by Searle and Fraser), we will seek to determine which of these are also truth-conditions on the negations of

such statements. The result will be that those truth-conditions which are merely entailments of the report constitute the set consisting of the propositional content and essential conditions on successful promising plus any entailments of the statement that these conditions are satisfied. And those truth-conditions on the inexplicit reading of the reportive sentence which are presuppositions of that reading consist of the kinds of conditions on promising which Fraser had in mind when he introduced the notion of preparatory conditions on successful promising.³⁷ (More explicitly, we will argue that when Fraser's and Searle's suggested lists of preparatory conditions on successful promising are more accurately reformulated, the revised list consists of a set of schemata from which are derivable those presuppositions of the inexplicit reading of a sentence which reports an illocutionary act which are triggered by the performative verb; i.e. the revised preparatory conditions on successful promising are included among the presupposition schemata associated with the verb promise when it appears in inexplicitly interpreted non-performative sentences. We will also go in the opposite direction and argue that all presuppositions of the reportive statement (with the exception noted in footnote 37), including those triggered by elements in the complement to the performative verb, function as preparatory conditions on the successful performance of the act of promising which the sentence reports.) When these claims are justified, they will form a basis for the following definition of "logically proper performative":

A performative sentence is "logically proper" if and only if
the preparatory conditions, on the success of an utterance of

that performative as a performance of the corresponding illocutionary act, hold.

This definition is consistent with our data base, since it predicts that the presuppositions triggered by performative verbs and other elements when they appear in statements (in the case of the performative verbs themselves, when they appear in inexplicitly interpreted reportive statements) are also triggered in the same way by these elements when they appear in explicitly performative sentences.

3b. Justification of the hypothesis.

The object of this sub-section is, first, to show how the truth conditions on the inexplicit reading of

(51) John promised Mary that he would be there
can be stated in terms of conditions on the success of an act of promising performed by John in his utterance of a non-performative sentence to Mary, and second, to show that a certain subset of these truth-conditions on (51) (namely, its presuppositions, as opposed to its "mere" entailment) can be stated as a corresponding subset of the conditions on John's utterance being a (successful) promise (namely, the preparatory conditions).

3b.i. The truth-conditions on the inexplicit reading of "John promised Mary that he would be there."

Before we begin, I want to clarify some assumptions which I will be making with respect to the following heuristic and expository device,

which will be used to help us determine the truth-conditions on the inexplicit reading of (51) (and similar reportive sentences): We will assume that John has uttered to Mary a non-performative sentence which expresses a statement more or less synonymous with "I will be there," that Mary has heard and understood the utterance (i.e. she knows what "there" refers to, and she knows when John means that he will be there); and that a disinterested bystander - a native speaker of English who I will ordinarily be referring to in the first person - has overheard the utterance; and we will ask: What must I believe about John, Mary, their beliefs, and the circumstances of the utterance in order for me to judge John's utterance to be a promise, and (therefore) to be able to (sincerely) report John's utterance as (51)? The point of this device is that it is often difficult to make confident judgments about the truth-conditions on a statement, or about whether one statement entails another, especially when one or both of these statements is expressed by an ambiguous sentence. However, as speakers of a natural language, we make these judgments unhesitatingly and unconsciously all the time. That is, we do sometimes report an utterance of "I'll be there" as a promise, while at other times we intuitively realize that an utterance of the same sentence is not accurately reportable as a promise. By calling this to the reader's attention - and asking him to decide whether he could honestly report certain propositions in given situations, we hope to bring some of this unconscious decision-making ability to the surface. Ordinarily, it is not valid to base arguments about the truth-conditions of a statement on data specifying what an arbitrary speaker of English "would (not)"

or "could (not)" say or report in a given situation, since in order to do so we would have to take into account certain aspects of linguistic performance - the fact that people sometimes say things they don't mean, or say things which, if they examined them more carefully than we usually do in conversation, they would find to have consequences and implications they did not mean or are not willing to commit themselves to. Thus we must stipulate that the situations we will be constructing are "idealized" to the extent that none of these performance hindrances can stand in the way of our "arbitrary speaker's" reporting just what he believes and knowing just what he means. This is the same as saying that whenever I make a claim that in a given situation I "would" or "would not" (feel entitled to honestly) report (51) or a similar sentence, this should be interpreted (and will, in most cases, later be explicitly stated) as a claim that in the given situation all the truth-conditions on the statement under discussion are, or are not, satisfied. The reason that it is necessary to introduce a "third person" into the exposition is that some of the truth-conditions on (51) are conditions on John's or on Mary's beliefs, and, as we pointed out in Chapter I, we must always distinguish between statements about what a person must believe in order for him to believe a certain proposition, and statements which claim that it is a condition on the truth of the proposition that a certain individual referred to in the proposition must have certain beliefs. By looking at everything from the point of view of a disinterested bystander whose opinions on any given subject are not necessarily the same as those of individuals referred to in the

sentence, we are emphasizing the fact that what will be at issue in each situation (in which (51) might or might not be reportable) is not whether, by virtue of his non-performative utterance, John (the speaker) considers himself to have made a promise, or whether Mary (the addressee) considers John to have promised her something, but rather whether or not it is in fact true that John made a certain promise to Mary. Thus the assumption is that "my" point of view is the true one (if we assumed, on the other hand, that all John's opinions about the situation, about Mary's beliefs, etc. were necessarily true, we would not be investigating the truth-conditions on sentences which report inexplicit promises, but rather the conditions on someone's considering himself to have successfully performed the act of promising with a non-performative utterance).

As we said earlier, we will be basing our choice of candidates for the honor of being certified as truth-conditions on (51) on the formulations made by Fraser and Searle of the conditions on successful promising. I should point out that I will be using \wedge expressions such as "the success-conditions on promising (accusing, etc.)" to refer not only to schematically expressed conditions on "the speaker," "the addressee," and "the situation," of the sort Fraser and Searle have proposed, but also to the result of filling in these schemata with material from a given sentence (an utterance of which may be a promise), so that what is expressed are the conditions on the performance of an act by a particular utterance of a particular sentence. That is, it

is a condition on any utterance being a successful promise that, say, the addressee of the utterance would prefer the speaker to bring about the situation specified in the utterance; it is also a condition on an act of promising being successfully performed by a particular utterance by John to Mary of the sentence "I will leave" that Mary would prefer John to leave. We make a theoretical but not a terminological distinction between these two, and refer to them both as "success-conditions on promising."

We now begin our investigation of the truth-conditions on the inexplicit reading of

(51) John promised Mary that he would be there,
which we take to be exactly the conditions on an utterance, by John to Mary of

(52) I will be there
constituting a successful promise. The propositional content conditions on promising are expressed by Searle (1970) as requiring that the speaker utter a sentence which expresses a proposition P,³⁸ and that "in expressing P, the speaker predicates a future act of himself" (p. 63), and by Fraser (1972) as requiring that the expressed proposition "must predicate some future act, not necessarily but usually to be carried out by the speaker" (p. 11).³⁹ The general problem of stating the propositional content conditions on the performance of illocutionary acts is discussed in Chapter V, Section 3; here we merely point out that in the case of promising, the uttered sentence need not predicate a future action, but rather a future situation (see footnote 39).

Later we will try to show that the circumstances under which an utterance which expresses a proposition predicating an action (or a state) of someone other than the speaker can succeed in making a promise are to be accounted for in terms of preparatory rather than propositional content conditions.

The "essential condition" on the successful performance of an illocutionary act specifies, according to Fraser (1972), "what the speaker intends as the point of the utterance" (p. 12). His formulation of the essential condition on promising specifies that "the speaker intends the utterance to count as placing him under the obligation to bring about the act specified" (ibid).⁴⁰ We adopt the claim that such a condition is necessary (the critical evidence being the fact that the satisfaction of such a condition may be the only factor which distinguishes performative utterances from other (i.e. habitual or historical statement-making) kinds of utterances of the same sentence), but we will not, for lack of time and space, critically examine Fraser's or Searle's formulation of the essential condition on promising. We regard the satisfaction of the essential condition on the act A as an entailment of either reading of a sentence which asserts that A has been performed.

We now turn to an account of those truth-conditions which the in-explicit reading of

(51) John promised Mary that he would be there
has by virtue of the necessity that the preparatory conditions on John's (non-performative) utterance constituting a successful act of promising

be fulfilled in order for this reading of (51) to be true. The most obvious member of this class is what we will call the "goodness" (or "desirability") conditions: Roughly speaking, in order for an utterance by John to Mary of

(52) I will be there

to constitute a promise, John's being there must be a "good" or "desirable" thing, at least from Mary's point of view. Both Searle and Fraser state what amounts to a "desirability" condition on successful promising which involves the attitude of the addressee of the utterance toward the action or event referred to in the utterance.⁴¹ Searle's condition insists that in order for an utterance which expresses a predication of a future act A of the speaker to be a successful (and non-defective) promise, it must be the case that "the hearer would prefer the speaker's doing A to his not doing A" (p. 63). (We will concentrate on this rather than Fraser's (1972) paraphrase which states that "the favorable disposition of the hearer toward the act" is a preparatory condition on successful promising, since the former is less vague.⁴²) In view of the fact that a promised event need not be an action to be carried out by the speaker (see footnotes 39 and 40), and since not every "hearer" of an utterance which performs an illocutionary act is necessarily the "addressee" (or "an addressee," if there are more than one) of the utterance,⁴³ we will amend Searle's statement of this condition to

(53) The addressee would prefer the specified situation's coming about to its not coming about.

I suspect that the reason Searle spoke in terms of the hearer's (i.e. the addressee's) "preference" is because he felt it would be too strong a condition to speak rather of the addressee's "wanting" the act to take place. But the condition, as it stands now, is too weak. It is not enough that the addressee merely prefer the promised situation to come about rather than not come about: the addressee must be in some way affected by the event. For example, suppose that John is an acquaintance of mine, and he is planning to go to Europe this summer. Now if anyone asked me whether I would prefer John's going to Europe this summer to his not going, I would probably say yes - after all, he seems to want to go, and I have no reason to wish him ill or hope that he will be disappointed. But John, in announcing his plans to me, is not at all likely to say "I promise that I'll go to Europe this summer" - for him to phrase his intentions in terms of a promise to me would be inappropriate, since his going or not going would not affect me in any way. Similarly, if John says to me "I shall go to Europe this summer," I will not report his utterance as "John promised me that he would go to Europe this summer." Thus if we phrase the "goodness" condition in terms of what the addressee "would prefer," we must in addition require (as a preparatory condition on promising) that

- (54) The addressee would be "affected" by the specified situation's coming about.⁴⁴

Along with his statement of the "preference" condition, Searle specifies that it is a condition on successful promising that the

speaker (of the future sentence) believes that the addressee would prefer the situation's coming about to its not coming about (p. 63). Given Searle's framework, in which all the conditions on the successful and non-defective performance of an illocutionary act are lumped together without classification, we must accept this. But since we are adopting Fraser's modification of Searle's framework, we probably should not state this condition on the speaker's beliefs about the addressee's preference in the same breath as the condition on what the addressee's preferences must in fact be, since according to Fraser's classification of success-conditions on promising, the condition that

(53) The addressee would prefer the situation's coming
about to its not coming about

is a preparatory condition, but the condition that the speaker believe
(53) should probably not be so regarded. Rather, while

(55) Mary would prefer John's being there to his not being
there

should be regarded as a pre-condition on any utterance (by John addressed to Mary) counting as a promise which expresses the proposition that John will be there, the truth of the statement that John believes (55) can be considered a pre-condition on John's being able to intend an utterance which expresses that proposition to count as a promise to Mary. My intuitions are not crystal-clear on this point, but I think that if John utters "I will be there" (a sentence which fulfills the propositional content conditions on promising) to Mary, and if all the preparatory conditions on promising are satisfied, as well as the essential condition (that John intends his utterance to place

him under the obligation to "be there"), then his utterance does count as a promise - he has successfully performed the act of promising - even if he is unaware - or disbelieves - that Mary would prefer and be affected by his being there. Thus the condition that John must believe (55) (in general, that the speaker must believe (53)) is probably a non-defectiveness condition, rather than a success-condition, on promising. Analogously, this same condition should probably be expressed as a "good faith" condition (in the sense of Chapter I, Section 2) on an explicit performative of promising such as "I promise you that I will be there." So in order for us to accept the proposition that

(51) John promised Mary that he would be there,

we must in general consider John to believe (55); if John's utterance to Mary was non-performative (e.g. "I will be there"), we are likely to assume that John believes (55) on the grounds that (55) is true, if we have no evidence counter to this assumption; if John's utterance to Mary was an explicit performative, we will take John's use of the explicit formula "I promise" as an indication that he believes (55), unless we have reason to suspect that he was joking, being sarcastic, or acting in "bad faith."

So far we have specified two truth-conditions on the inexplicit reading of (51) which correspond to preparatory conditions on successful promising, the "preference" condition (53) and the "affectedness" condition (54). The third preparatory condition on successful promising involves the notion of "control." This condition requires that in

order for John's utterance to count as a (successful) promise, the specified situation must be such that the speaker has control over whether or not it comes about, in the sense that it is possible for the speaker to bring it about by his own volition. By "possible" here we mean "in fact possible," as opposed to "logically possible" (see Chapter I, footnote 14). That is to say, in order for someone to promise successfully to perform an action (or, in general, to bring about an event or situation), it must in fact be possible for him to do so. If his bringing about the event is in fact impossible, his utterance is not successful as a promise, even if he (mistakenly) believes that it is possible - i.e. even if he intends his utterance to count as a promise. The same thing applies to the truth-condition on sentences which report that a promise has been (inexplicitly) performed. For example, suppose that John says to Mary "I will get an 'A' on my paper on Proto-Algonquian adjectivals," and suppose that Mary would prefer John to get an 'A', and be affected by whether or not he does. Ordinarily I would not report this utterance as "John promised Mary that he would get an 'A,'" since ordinarily, getting an 'A,'" in the sense of being arbitrarily awarded a grade by a teacher, is not something which one does "voluntarily" or "on purpose" - that is, it is not something which one has "control" over. I could only report this utterance as a promise, then, if I were of the opinion that John is in a position to perform some voluntary action which will have the direct and necessary result of his paper receiving an "A."⁴⁵ It is the fact that promising has this "control" condition which makes it

possible for the propositional content of a promise to consist merely of a statement that a certain event will take place, or a certain situation will come about, without that statement necessarily being a predication of an action of the speaker; in this case the utterance which states that the event will happen can still constitute a successful promise as long as the speaker has "control" over whether or not it does. Note that the question of whether I am able to report

(56) John promised Mary that Bill would be there on time (assuming that John said to Mary "Bill will be there on time") is not affected by whether or not I actually expect Bill to show up on time; rather, in order for (56) to be true, there must be some sort of necessary connection between John's will and Bill's arrival time.⁴⁶

3b.ii. Presuppositions and entailments triggered by promise.

In the previous sub-section we specified the following truth-conditions on the inexplicit reading of

- (51) John promised Mary that he would be there:
- (57) Mary "would prefer" John's being there to his not being there.
- (58) Mary "would be affected by" John's being there.
- (59) John "has control over" his (own) being there.
- (60) John intended his utterance to count as placing him under the obligation to be there.

These are truth-conditions on this reading of (51) because they are conditions on an utterance by John to Mary of "I will be there" counting as a promise. We also said that (57)-(59) are preparatory conditions on any utterance (performative or non-performative) by John to Mary counting as a successful promise that he would be there, while (60) is the essential condition on promising. Thus (57)-(59), being preparatory conditions, are not conditions on the truth of the explicit reading of (51); while (60), being an essential condition, is a truth-condition on either reading of (51). We will argue that (57)-(59) are presuppositions of the inexplicit reading of (51), while (60) is a "mere" entailment (of either reading).

Suppose that John says to Mary "I will be there," but that (57), the "preference" condition, does not hold. If (57) is only an entailment and not a presupposition of (51), we would expect

(61) John didn't promise Mary that he would be there to be false in this situation (assuming, for the time being, that the "obvious" presuppositions of (51) triggered by John, Mary, and there are met). But I would not report (61) in such a situation; if someone asked me whether John had promised Mary that he would be there, I would feel that it would be misleading to say "no" and affirm the truth of (61) - rather I might answer

(62) John didn't promise Mary that he would be there (. . . he threatened her (or warned her, or assured her) that he would be there).

To say that John's utterance of "I will be there" was a threat, not a promise, is to say (among other things) that the "preference" condition (57) on the truth of (51) was not met; to say that John's utterance was an assurance rather than a promise is to say that the "control" condition (59) was not met; if John's utterance was not a promise but a warning, (57) must be false and (59) need not be true either. That is to say, the "not" of (62) denies that the preparatory conditions on John's having promised are met, but it does not deny that the "assertion" of (51) that John uttered a sentence which fulfills the propositional content conditions on promising.⁴⁷ On the other hand, I submit that the "not" of (61) denies that an utterance of the appropriate kind was made by John to Mary, but it does not deny that (57)-(59) hold.⁴⁸ This is because - assuming that I understand and mean just what I say - I would not consider (61) reportable if I didn't judge each of (57)-(59) to be true, since that would be misleading; in other words, (57)-(59) (which state that the preparatory conditions on promising were met by the circumstances surrounding the utterance) are truth-conditions of (61), the negation of (51), as well as on (51) itself; therefore they are presuppositions of (51).⁴⁹

Note that the essential condition on promising, which is an entailment of (51), is not also a truth-condition on (61), since this condition refers to what John intends his utterance to count as, but if (61) is true, there was no utterance which John could have intended to count as a promise. Neither (61) nor (62) entails the satisfaction of the essential condition on promising: (61) says that John didn't

promise, but he might have, or could have (i.e. the preparatory conditions on his promising were met); (62) says that of course it is not the case that John promised, since under the circumstances, he couldn't have, even if he had wanted to.

3b.iii. Conclusions.

We have said that all the preparatory conditions on the success of John's utterance to Mary of 'I will be there' as a promise are also presuppositions of the inexplicit reading of (51), the sentence which reports that utterance as a promise. We will now argue that the truth of all the presuppositions of (51) (not counting the presuppositions that "John" and "Mary" refer; see footnote 37) is a preparatory condition on John's utterance being a successful promise. The three presuppositions of (51) we have already discussed are triggered by the performative verb promise. An intuitive argument that the presupposition of (51) which is triggered by there is also a preparatory success-condition on John's utterance being a promise is the fact that it is felt to be entailed by the "control" condition on promising. Unless "there" refers to a certain place, it is impossible for John to "be there" (and thus he cannot control whether he is there or not). To take a case with a more interesting presupposition triggered by an element other than the performative verb, consider

(63) I promise to stop beating my wife.

Certainly, there is a sense in which it is a "pre-utterance requirement" on the speaker of (63), in order that (63) be a successful promise, that he is now or has been beating his wife, since the truth of the con-

trol condition entails that the cessation of the speaker's present or habitual beating of his wife is something the speaker can bring about voluntarily . But if the speaker never beat his wife neither he nor anyone else can have control over his ceasing to beat her; since under these circumstances such an event (or state) cannot possibly come about, it cannot be brought about. John's beating his wife is a "pre-utterance" condition on the success of (63) as a promise in the same sense as it is a pre-condition on the success of "I will stop beating my wife" as a truth-valueful statement (see footnote 49). Thus we will assume that the truth of the conjunction of the presuppositions of a reportive sentence which are not triggered by the performative verb constitutes a preparatory condition on the success of the corresponding illocutionary act.

The argument of this Section is that (1) since the truth of the inexplicit reading of a sentence which reports the performance of an illocutionary act depends on the satisfaction of the preparatory conditions on the success of this act, and (2) since there is intuitive evidence that the satisfaction of these conditions, once they are accurately formulated, is also necessary in order for the negation of such a sentence to be true, it follows that (3) those conditions already proposed as preparatory conditions are those presuppositions of the corresponding reportive sentence (at least on its inexplicit reading) which are triggered by its performative main verb; and since (4) those presuppositions of the reportive sentence which are not triggered by the main verb are also felt to be preparatory or "pre-utterance" conditions on the success of the corresponding act, it follows that

(5) the preparatory conditions on the successful performance of an illocutionary act by an utterance are just the presuppositions (minus those triggered by the definite NP's which refer to the speaker and addressee of the utterance) of a sentence which reports that the utterance successfully performed the act.⁵⁰ In view, therefore, of our adequacy criterion on the definition of "logically proper performative," which specified that the implied definition of "presupposition of a performative" should predict that all elements trigger the same presuppositions when they occur in performatives as when they occur in (inexplicitly interpreted) statements, questions, etc., we suggest that a "logically proper performative" should be defined as a performative sentence such that all the preparatory conditions on the success of an utterance of that sentence as a performance of the corresponding illocutionary act are met. This satisfies the criterion, since the preparatory conditions on the success of an act comprise just (with the specified exception) the presuppositions of the associated reportive statement containing the same propositional content and the same presupposition-triggering elements.⁵¹

We have now defined a notion of "presupposition" (or equivalently, of "logically proper") which ranges over all kinds of sentences; this completes the task which was begun in Chapter I, Sections 1a and 1b. But since all sentences - non-performative as well as performative - can be used to perform illocutionary acts, we can go further and correlate the notion of "logically proper" with that of "successful" for non-performative sentences. If an utterance U(S) of a sentence S, explicitly

performative or otherwise, successfully performs any illocutionary act A, then S (or the statement, question, etc., expressed by S) is necessarily logically proper. That is, the success of U(S) in performing A guarantees that the preparatory conditions on the successful performance of A are fulfilled. But these conditions either comprise the presuppositions of S (if S is an explicit performative), or include the presuppositions of S (if S is non-performative). On the other hand, if a sentence S is logically proper, an utterance of S will constitute the successful performance of an act A only if the propositional content and essential conditions on A also hold - in addition, if S is not an explicit performative, those preparatory success conditions not inherent in S itself (i.e. those presuppositions of the statement which reports the successful performance of A by U(S) which are not presupposed by elements within S, but triggered by the illocutionary verb corresponding to A) must hold as well.

This way of looking at the presuppositions of sentences, in terms of the way they affect the ability of an utterance of a sentence to perform illocutionary acts, is often implicit in modern linguistic writing on the subject of presupposition. For example, Fillmore (1971a) speaks of "the presuppositional aspects of a speech communication situation," which he defines as "those conditions which must be satisfied in order for a particular illocutionary act to be effectively performed in saying particular sentences" (p. 276). It is clear from Fillmore's analyses in this article and elsewhere that he does not consider all the "presuppositional aspects" of speech-

situations to be accountable for in terms of the presuppositions of particular sentences. This becomes clearer in Fillmore (1971b), where he writes:

Sentences in natural language are used for asking questions, giving commands, making assertions, expressing feelings, etc. . . . We may identify the presuppositions of a sentence as those conditions which must be satisfied before the sentence can be used in any of the functions just mentioned.
(p. 380)

This is essentially the position I took in the last paragraph where I implied (contrapositively) that unless a sentence is logically proper, it cannot be used to successfully perform any illocutionary act.⁵²

Footnotes to Chapter IV

1. We must distinguish between "performative utterances" and the derived notion of "performative sentences" - sentences the utterance of which may be performative - for two reasons: First, as we point out later, all performative sentences are ambiguous between a "performative reading" - on which an utterance of the sentence is performative - and one or more non-performative readings, on which the sentence is interpreted as an ordinary declarative (with a main verb in the "historical" or "habitual" present), which expresses a statement; an utterance of a "performative" sentence on a non-performative reading does not perform the act indicated by the sentence's main verb. Second, Austin (1962), who coined the term "performative," intended it to refer only to utterances, and addressed the issue of "performative sentences" only indirectly. Thus any points attributed (by me) to Austin are points about performative utterances, even when these points are (as they will often be) supplemented by derived claims or observations about performative sentences. (A further terminological note: We will use the expression "performative verb," following Ross (1970a), to mean a verb or verbal idiom (e.g. agree to, give one's word) which may occur as the main predicate of a performative sentence; we will refer to such verbs (as well as the performative sentences themselves) as being "interpreted performatively" on the performative reading of such a sentence and "interpreted non-performatively" on its non-performative readings.)
2. The notions "illocutionary act" and "illocutionary force of a sentence or utterance" are defined in Chapter V, Section 1; readers unfamiliar with these terms should refer there (or to the original sources) before proceeding.
3. We mention Austin's felicity conditions on utterances only as background, to provide a basis for comparison with Searle's and Fraser's categorizations of success (and non-defectiveness) conditions. (We will also compare the various sorts of conditions proposed by these writers with the kinds of conditions we intuitively judge to be what we want to call "presuppositions" of a performative (that is, we want to call certain conditions "presuppositions" by analogy with similar conditions on the truth or falsity of statements; we cannot yet claim that a performative sentence does have any particular presuppositions until we have defined what this means.) I go into Searle's framework, and Fraser's modifications of it, in more detail than into Austin's, because I will be adopting the former more or less wholesale as the basis for my own investigations. However, my description of this framework in the present section is just a re-

statement of that material in Searle (1970) and Fraser (1972) which is relevant for my own purposes as stated at the beginning of this chapter and the next; I have no arguments in favor of its adoption to add to the ones advanced by those who originated it. My interests lie not in justifying the framework but in refining the success-conditions proposed by Searle and Fraser and in determining the relations between such conditions and the truth-conditions - in particular, the presuppositions - of related statements. The reader who is unfamiliar with the notion of a "success-condition on the performance of an illocutionary act" and who finds the following summary overly terse is referred to the sources mentioned in this footnote.

4. For completeness I will reproduce here Austin's three sets of conditions "which are necessary for the smooth or 'happy' functioning of a performative" (pp. 14-15). Violation of an A-condition constitutes a Misinvocation; of a B-condition, a Misexecution; of a Gamma-condition, an Abuse:
 - (A.1) There must exist an accepted conventional procedure having a certain conventional effect, that procedure to include the uttering of certain words by certain persons in certain circumstances, and further,
 - (A.2) the particular persons and circumstances in a given case must be appropriate for the invocation of the particular procedure invoked.
 - (B.1) The procedure must be executed by all participants both correctly and
 - (B.2) completely.
 - (Γ.1) Where, as often, the procedure is designed for use by persons having certain thoughts or feelings, or for the inauguration of certain consequential conduct on the part of any participant, then a person participating in and so invoking the procedure must in fact have those thoughts or feelings, and the participants must intend so to conduct themselves, and further
 - (Γ.2) must actually so conduct themselves subsequently.
5. Appendix 3 is a catalog of the differences between "ceremonial" and "non-ceremonial" illocutionary acts. I have relegated this material to an appendix because it is the non-ceremonial acts which will be focused on in these last two chapters. The appendix is intended to demonstrate that (i) the two kinds of illocutionary acts must be (in many respects) dealt with separately, and that (ii) ceremonial illocutionary acts are less linguistically interesting than the other kind - there is much less disagreement about

what it means to christen or to sentence that there is about the meaning of words such as promise, accuse and request. Note also that many of the generalizations we will be making in the text about "illocutionary acts" do not apply to ceremonial acts.

6. Misexecutions of Austin's Class B.2, the "hitches," are rather matters of a lack of "uptake":

"'I bet you sixpense' is abortive [a "hitch"] unless you say 'I take you on' or words to that effect; . . . my attempt to challenge you is abortive is I say 'I challenge you' but I fail to send round my seconds" (pp. 36-37).

7. The propositional content conditions are intended (by Fraser, at least) to apply equally to performative and non-performative sentences the utterance of which may perform an illocutionary act. For example, "I will be there" satisfies the propositional content conditions on promising since it predicates a future act (of the speaker); "I promise to be there" satisfies them since the complement predicates a future act (of its deep structure (but unexpressed in surface structure) subject, which is "I"). I submit that sentences - performative or non-performative - with promise as a main verb are only grammatical if their complements are that-clauses in the future tense or infinitive clauses which are assumed to refer to the future (e.g. "I promise that it rained last week;" "John promised that he is a good boy;" these only made sense if promise is taken in the sense of "(re)assure," but not if it means "undertake the obligation;" see Chapter V, Section 4a). Thus it follows that if a performative sentence with promise as its main verb is grammatically well-formed, it automatically meets the propositional content conditions on the success of the illocutionary act of promising. However, while it is also true of many other performative verbs that "the syntactic conditions for well-formedness on the embedded complement of a performative verb determine the propositional content conditions on the corresponding illocutionary act" (Fraser (1972, p. 16), this does not hold in general: In particular, as Fraser himself admitted, it does not hold when the performative verb does not allow complements; and it also does not hold when the performative verb is factive (see Chapter V, Section 2). Over-reliance on the similarity between the well-formedness conditions on the complement to a performative verb and certain success-conditions on the performance of the corresponding illocutionary act is a defect of both Fraser's (1971, 1972) and Ross's (1971a and in progress) approaches to the sentence-force pairing problem.
8. Our characterization will not be a true "definition" in the sense of an algorithm for distinguishing performatives from non-performatives. It is rather merely a description of the reasoning process which we as enlightened speakers of a language go through when we decide whether or not a given sentence or utterance is performative.

9. Although there is some disagreement as to whether or not certain marginal examples are performative. In particular, Austin classes the following as performatives:

- (i) I estimate that it is half-past two. (p. 140)
- (ii) I oppose . . . (p. 157)
- (iii) I resent that. (p. 159)
- (iv) I sympathize . . . (p. 159)
- (v) I conjecture . . . (p. 161).

I disagree on the grounds that these verbs do not refer to speech acts but only express beliefs or attitudes on the part of the speaker.

10. There is a trivial exception to this generalization; performative sentences beginning "I state that . . ." can of course be used to make statements (since to make a statement is to perform the illocutionary act of "stating"). (Perhaps performatives beginning "I assert that . . ." or "I say that . . .," etc. should be included here too.) Thus it does make sense to speak of some performatives as true or false: We could say that "I state that P" has the same truth value of P. But there is still a difference between the performative sentence

- (i) I state that Bill is a liar

and the non-performative declarative

- (ii) Bill is a liar

in that, while both (i) and (ii) can be used to make the statement that Bill is a liar, only (i) can be used to perform the illocutionary act corresponding to its main verb; this (as we argue in Section 2c of this chapter) is what makes (i) performative and (ii) non-performative. (Note that (i) also expresses the statement that the speaker habitually states (or did at one time state, if (i) is read in the "historical present") that Bill is a liar. (ii), on the other hand, can be used not only to make statements but also to accuse, warn, etc.)

11. As an argument in favor of this fact being called "linguistic," note that it plays a role in determining the appropriateness of responses:

- (i) A: I admire you.
B: That's false! (or: You do not!)
- (ii) A: I congratulate you.
B: *That's false! (or: *You do not!)

12. This is true with third-person subjects as well as with first: "John walks to the door" is not generally synonymous with "John

is walking to the door;" the former is reserved for special uses, including, aside from habitual and historic present, stage directions and conditionals (e.g. "If John walks to the door, will you stop him?").

13. As in the following example (Fraser (1972), p. 21): "'I promise to be home on time' can be both a promise and a report about the speaker's habitual actions; e.g., a child's answer to the question 'How come you are allowed to leave just before dinner to go out and play?'"

14. Fillmore (1971a) offers a slightly different analysis of forgive (p. 287); He says that 'I forgive you for writing the letter' can count as a performative (i.e. an utterance of it can constitute a performance of the act of granting forgiveness), but he implies that whenever forgive appears in a non-performative sentence - e.g.

(i) He forgave me

- it is a predication of the state of mind, not of the act.
Thus he claims that

(ii) He apologized, but he didn't mean it

is acceptable (since apologize has no [+stative] sense and it is possible to perform the act of apologizing insincerely); but he says that

(iii) He forgave me, but he didn't mean it

is not acceptable: Since this is a "non-performative use" (his term) of forgive, it can only have its [+stative] sense, but if someone is in a "forgiving" state of mind he cannot be in it "insincerely." I would say rather that (i) is ambiguous between a reading which asserts that the performative "I forgive you" was uttered (or at least, a reading which claims that the illocutionary act of forgiving was performed), and a reading which states that the subject is in a certain state of mind (so that it is not a truth-condition on this reading that the subject uttered anything). This is consistent with my judgment that (iii) is acceptable on the former reading - i.e. the continuation "... but he didn't mean it" forces the speech-act (non-stative) reading (indicating that the act of forgiving performed by "him" was not sincere), and excludes the "state of mind" reading.

15. Austin lists "agree" (in the sense of agree with (that)) as a performative (p. 158 and p. 161), along with such predicates as favour and intend, but I consider these to be purely [+stative].

16. However, we have claimed that something analogous to the property of truth-valuelessness in statements can be attributed to performatives uttered under circumstances which are in some way inappropriate, and once we determine what the analogy consists of we can speak of the presuppositions of a performative sentence (on its performative reading). But there is no property of performatives analogous to the falsity of statements - although false (the English word, not the logical predicate) sometimes applies to nouns which refer to the performance of an illocutionary act, as an indication that there was something wrong with the performance of that act. This manner of speaking is quite idiosyncratic (that is, "false" refers to different sorts of unmet conditions when it is applied to different acts). For example, a "false promise" is an insincere promise, a "false accusation" is an accusation of the wrong person, a "false warning" is a warning of an event which does not take place (or does take place but turns out not to have boded anything ill); "false advice" can mean bad advice, and "false orders" can be orders to do the wrong thing. (Performances of "ceremonial" illocutionary acts are apparently never described as "false," though - *a false christening, *a false sentencing, *a false resignation.)
17. The fact that our definition of "performative" is actually a definition of "performative sentence" (from which a definition of "performative utterance" (as an utterance of a performative sentence which succeeds in performing the corresponding illocutionary act when the conditions are met) can, of course, easily be derived) should not be taken to imply that the concept of "performative sentence" is in any way "prior to" the concept of "performative utterance;" clearly we could have defined the latter first and the former derivatively. (The question of which, sentences or utterances, is a theoretical prime is not really a question about performatives, though, but applies to all kinds of sentences and utterances, and anyway, it is not an issue which we can have any hope of resolving at this stage of the game.) Austin talked about performative utterances, not sentences, but since our concern at present is the study of meaning rather than of action, we are taking the notion of "performative sentence" to be basic (relative to that of "performative utterance"), just as we assumed it to be possible, for example, to speak of "interrogative sentence" without reference to "utterances of questions."
18. The parenthesized condition indicates that a sentence must have a performative main verb if it is to be interpretable as a performative - since, for example, "I will be there" satisfies the propositional content conditions on promising and successfully performs the act of promising when the essential and preparatory conditions on the success of that act are met, but it is not performative. However, the specification that a sentence must have a performative verb if it is to be judged a performative could be omitted from a formal definition, since the fact that "the illocutionary act corresponding to the main verb of the sentence" is referred to ensures that only sentences with performative main verbs can satisfy the definition.

19. My comments in this paragraph and at the end of the sub-section with respect to first-person progressive sentences which may be used to perform the act corresponding to their main verb (if the main verb is performative) apply also to some non-performative sentences containing a performative main verb in the first person modified by a modal. For example, "I ought to warn you..." can be used to warn; "I can only promise to..." can be used to promise; "May I suggest...?" can be used to suggest.
20. This distinction is not made in the case of the performance of an illocutionary act by a non-performative sentence; if an utterance of a sentence which is not explicitly performative does not successfully perform a given act - e.g. if an utterance of "I will be there" does not successfully perform the act of promising - then the utterance cannot be said to have performed that act at all. See below on the "inexplicit readings" of sentences which report the performances of illocutionary acts.
21. Ceremonial performative utterances are excluded from this generalization because the "authorization" condition (see Appendix 3) on a ceremonial act (such as christening) is probably a preparatory (in Searle's sense) condition. But the satisfaction of the authorization condition is also in each case a truth-condition on (an entailment of) a statement which reports that the act has been performed (such as "He christened the baby John"). Since such a statement cannot be true unless the authorization condition is met, and since the possibility of the truth of this sort of statement in the face of an unsatisfied preparatory condition is the basis for our terminology of "performed but not necessarily successfully," we must say that ceremonial illocutionary acts are performed successfully or not at all.
22. This statement implies that the only truth-conditions on the explicit reading of (32) are John's having uttered a corresponding performative sentence and the truth of the essential condition on promising; that is, it implies that those elements which ordinarily trigger presuppositions do not do so when they occur in an explicitly-interpreted sentence reporting the performance of an illocutionary act. (This is consistent with our proposal in Section 3a of the present chapter that the satisfaction of all presuppositions of a sentence which reports the (successful) performance of a given act, which are triggered by the illocutionary main verb or an element in its complement, is a preparatory condition on the successful performance of the act.) For example,

- (i) John promised Mary that he would talk to her brother again,

on its explicit reading, presupposes only that John and Mary exist and that they are human (if the latter is to be considered a presupposition and not a selectional restriction). While the lower clause by itself ("John will/would talk to Mary's brother again") would

presuppose that Mary has a brother, that John has talked to him before, etc., these presuppositions are suspended in the context of (i). This appears to be correct (although I know some speakers would disagree): Intuitive evidence for this claim is the fact that even when not all of the preparatory conditions on sentences like (i) being successful as a promise hold, I would consider it accurate to report this performative utterance as a promise (e.g. I would answer "yes" to "Did John promise Mary . . .?" and I would consider it possible to refer to "John's promise to Mary") as long as John intended his utterance to count as a promise. This, as I see it, is the nature of (non-ceremonial) performative utterances: As long as they are uttered with the intention of performing the corresponding act (and as long as they are grammatically acceptable) they do thereby perform the act, even if the promise, accusation, etc. thereby made does not make sense in the way that the promise reported by (i) does not make sense when John never talked to Mary's brother previously. Thus elements (including performative verbs) which trigger presuppositions when they appear in the inexplicit reading of a sentence reporting the performance of an illocutionary act (as well as when they appear in performative sentences themselves) do not trigger these presuppositions when they occur in an explicitly-interpreted sentence which reports the (possibly but not necessarily successful) performance of such an act. (Karttunen (1971c) makes a similar point (see footnote 24, Chapter I) which is stronger in that he claims that no presuppositions are ever triggered by elements in complementation to a performative verb (whether the sentence in which they occur is a performative sentence or a report of the performance of an illocutionary act); he would say that (i) does not presuppose that Mary has a brother whom John has already talked to, whether it reports an explicit or an inexplicit promise. His position is also weaker than mine in that he only claims that performative verbs block the triggering of presuppositions by elements appearing in their complements, but he says nothing about whether or not the performative verbs themselves trigger presuppositions in performatives or in statements (I say what promise, accuse, etc. do trigger presuppositions except when they occur in an explicitly interpreted report of the performance of the corresponding act).)

23. The terminology of Fraser (1972) with respect to the performance of illocutionary acts is incompatible with mine, indicating that there is a factual disagreement between us - in particular, he does not agree that "John promised to be there" has a reading which does not entail that the preparatory conditions on successful promising are met. But the claim that this sentence has such a reading was the basis for my terminological distinction between the mere "performance" and the "successful performance" of an illocutionary act by a performative utterance. Fraser speaks of "promising" as "requir[ing] the favorable disposition of the hearer towards the action predicated in the utterance" (p. 22) - that is, in order for "promising" to take place, the preparatory as well as the propositional content and essential conditions on successful promising must be met; this implies that "promising" is not distinct in his terminology from "successful promising." Thus Fraser would have to find my manner

of speaking, which refers to "promising" as being "performed" (but not necessarily "successfully performed") by a performative utterance when the propositional content and essential conditions are met, contradictory.

My hypothesis that Fraser would not analyze "John promised to be there" as having a reading on which the preparatory conditions on successful promising are not entailed to have been met is supported by a claim he makes in an earlier (1971) paper, that the conditions on successful promising are "semantic entailments" of sentences containing the verb promise (p. 46). If he means this, as he presumably does, to apply to both performative and non-performative sentences containing promise, it follows that he would view "John promised to be there" as entailing that the preparatory conditions on successful promising hold. Our claim, on the contrary, is that this sentence is ambiguous between an explicit reading (on which the preparatory condition on successful promising do not necessarily hold), and an inexplicit reading, which does entail (in fact we will argue in Section 3 that this reading presupposes) that these preparatory conditions have been met (by the utterance of a non-performative sentence). This indicates that the difference between Fraser's framework and mine, with respect to when an illocutionary act can be said to have been "performed" by a performative utterance, or when a performative utterance "counts as" the performance of an illocutionary act, is not merely a "notational" or terminological distinction, but rather a disagreement as to the facts which must be accounted for within our respective frameworks. However, a theoretical conflict is not thereby implied to exist - as both analyses contribute toward the creation of a unified framework in which such variations in grammatical intuition can be accommodated. (Note that even if not everyone agrees that "He promised" has two readings with two sets of truth-conditions, there is general agreement that most illocutionary acts may be performed either by a performative or a non-performative, so we can legitimately speak of explicitly performed vs. inexplicitly performed illocutionary acts - e.g. an explicit promise (act of promising) vs. an inexplicit promise.

24. As an example of a situation in which the question might arise as to whether an act was performed (possibly unsuccessfully) by an utterance of a progressive sentence with a performative main verb, witness the following scene, based on Fillmore's (1971a) example "John accused Harry of writing the letter" (p. 282):

John: So you're the dirty rat who was responsible for that letter!

Harry: Why, John, what are you saying?

John: I'm accusing you of writing the letter!

Bill: How can you be "accusing" him or "not accusing" him of writing the letter when it was such a good thing for him to do?

Fillmore argues that it is a presupposition of "John accused Harry . . ." that whatever John said that Harry did was a "bad" or "blameworthy" thing to do; we claim that this is a presupposition only of the inexplicit reading of that sentence, but that is a preparatory condition on either the explicit or inexplicit successful performance of the act of accusing. In the above dialogue (which assumes that it is not at issue that Harry did in fact write the letter), John is implying that he thinks that it was a bad thing for Harry to write the letter; while Bill, who functions as an "objective bystander" whose value judgments do not necessarily concur with John's or Harry's, says that Harry's writing the letter was a good thing for him to have done. He objects to John's use of the word "accuse" by giving the characteristic response to an utterance of a sentence which one perceives to have a false presupposition (see Chapter II, Section 2a.ii); if anyone asked whether John accused Harry of writing the letter at the time of his utterance of "I'm accusing you", Bill would have to reply that it is neither true nor false that John did so, since one of the preparatory conditions on the illocutionary act of accusing - i.e. one of the conditions on the successful performance of this act by a non-performative utterance - does not hold. (But John himself would answer that he did thereby accuse Harry, since he intended his utterance to count as an accusation and therefore from his own point of view, all the conditions, including the preparatory conditions, on successful accusing were met.) On the other hand, if John's second contribution to the above dialogue had been not "I'm accusing you" but "I accuse you of writing the letter," then it seems to me that Bill, on being asked whether John accused Harry, would have to answer "Yes" - although, given his conviction that it was praiseworthy, not blameworthy, for Harry to have written the letter, Bill's answer would be misleading if he did not indicate somehow that he felt that John's accusation was unsuccessful, or infelicitous, or otherwise inappropriate, perhaps by adding: "But it was awfully odd for John to accuse Harry of anything under the circumstances, since Harry didn't do anything blameworthy."

25. Since, as I noted, there are native speakers who would not accept my revised definition of "performative sentence," we must note that my original definition does not account for the non-performativeness of (33) "I am promising to leave." The only way out of this dilemma that I can think of is to deny that it is a dilemma by arguing that the fact that (33) can be used to express a (true or false) statement as well as to perform the act of promising is no obstacle in the way of (33)'s being a performative, since all the sentences which we are sure are performatives also can be interpreted as statements (i.e. on "habitual" or "historical" readings) in addition to having the (ordinarily preferred) performative reading. That is, the grammar would specify that (33) has three readings: a present pro-

gressive reading, in which the speaker expresses a statement which describes his simultaneous attempt to perform the illocutionary act of promising (this attempt was, from the speaker's own point of view, successful, but it might have been unsuccessful if a preparatory condition was not in fact met. If (and only if) an utterance of (33) is in fact successful as a promise then the progressive statement which was also made by the utterance is therefore true.); an "historical" reading, on which the speaker expresses (within a "historical present" narrative) a statement asserting that during some interval in the past he was performing (again, from his own point of view, successfully) the act of promising; and a performative reading, on which the speaker, by his utterance of (33), attempts to make a promise and is successful at so doing under the exact same circumstances under which an utterance by him of "I promise to leave" would be successful. In spite of the numerous differences, theoretical and empirical, between this account of (33) and the one I suggested in the text (based on my revised definition of performative), I can adduce no objective evidence pointing to the superiority of one over the other, only the intuitive disagreements mentioned earlier which would dictate the choice between them made by different native speakers.

26. This will not completely demolish the straw man - i.e. it will not be shown that such a definition of "performative sentence" is impossible in principle - but my criticisms of the more obvious manifestations of this approach will serve as a narration of my own original fruitless attempt to define performative in these terms, perhaps satisfying the reader that there are enough difficulties with such formulations to warrant our dropping the arbitrary restriction that "performative" should be defined in "purely semantic" terms.
27. We must refer to the deep structure so that the formulae will apply to passives (and also in order not to have to mention possible changes of pronouns within X, e.g. from my to his, nor the tense changes that the X of the RV may have to undergo, on account of the shift of the main verb to past tense, if the main verb is one denoting indirect speech and X includes a tensed complement).
28. Clearly the proposition "Speaker uttered S" will be, in general, logically related to RV(S) only when A refers to the speaker of S and B, if present, refers to the addressee of the utterance of S, so we restrict our attention from here on to sentences for which this is the case. Note, incidentally, that the reportive version of a performative may also (except in most ceremonial cases) be used to report an inexplicit performance of the same act, by a non-performative. That is, the RV of most performatives is either ambiguous (as I claim) or neutral between explicit and inexplicit interpretations.

29. I am assuming here that promise always has a personal object in deep structure which may be deleted when it refers to the addressee or to the speaker (as in "But you promised (me) you'd bring home some ice cream").
30. We must modify this definition if it is to apply also to ceremonial performatives, since, as we mentioned in Appendix 3, "authorization" conditions on the success of ceremonial performatives should be regarded as entailments of the RV's of such performatives. For example, we claim that

(43)c Speaker christened that ship the SS Titanic

entails that the speaker was "authorized" to make the utterance in which he christened the ship with that particular name. Thus it follows that the claimed entailment between "Speaker uttered S" and RV(S) will not necessarily hold when S is a ceremonial performative, since RV(S) will not be true when an authorization condition is not met. But if we modify the definition to account for this, we must refer to the notion of a condition on the successful performance of a (ceremonial) illocutionary act - For example: AV(B)X is performative if whenever "Speaker uttered S" is true and the authorization condition(s), if any, on the successful performance of the illocutionary act of V-ing are met, RV(S) is necessarily true. This reference to "success-conditions" in the definition could be avoided - thus allowing us to construct a definition which is in form, if not in spirit, "purely semantic" - if it could be demonstrated that my hypothesis in Appendix 3 is true, that a unified "authority condition schema" can be written which would apply to all ceremonial performatives. In that case it would be legitimate to introduce a non-lexical pro-form "authorized" which may appear in the entailments of statements containing ceremonial performative verbs. We could modify the "semantic" definition of performative as follows: Assuming that "Speaker is authorized to do S" is always trivially true when X involves the performance of a merely non-ceremonial act, a sentence S, of the form AV(B)X, is performative if the conjunction of "Speaker uttered S" and "Speaker was 'authorized' to V(B)X" entails RV(S). This would account for the authorization entailment of RV(S) without referring to the authorization conditions (i.e. to success-conditions) on the performances of ceremonial illocutionary acts.

31. More explicitly, Karttunen claims that whether or not the presuppositions of an embedded clause are presuppositions of the sentence as a whole depends on which of the following three types of elements dominates the embedded clause: "Plugs," which prevent such presuppositions from being presuppositions of the whole sentence (these include performative verbs and other "verbs of saying"); "Holes," which allow all presuppositions of the complement to be presuppositions of the sentence (these include most complementizer-taking predicates), and "Filters," which filter out some but not necessarily all of the presuppositions of the embedded clause (these include

cannot be performed inexplicitly correspond to verbs which are "Plugs" in Karttunen's sense (see footnote 31); at least that these verbs are plugs when they appear in statements. This is not exactly true: "He christened the baby" certainly presupposes the existence of a referent for "the baby." But if (as I proposed in Appendix 3) the authorization condition on the performance of an act of christening by an utterance of this sentence reads "The speaker was 'authorized' to christen the baby," this presupposition is automatically accounted for.

36. As for those native speakers who do not recognize the ambiguity of sentences which report performances of illocutionary acts, or who feel that the explicit reading of such a sentence has the same presuppositions (and in general, except for whether or not it is asserted that an explicit performative was uttered, the same truth-conditions) as its inexplicit reading (see footnote 14), I can only guess at how they would view the relationship between the presuppositions of a performative and those of its RV. My guess is that they would regard them as the same (except in the sorts of details mentioned in footnote 34).
37. Actually, there is a trivial exception: The inexplicit reading (and the explicit reading as well) of "John promised Mary that he would be there" presupposes that "John" and "Mary" have referents (and perhaps also that these referents are human), but these are not, strictly speaking, preparatory conditions on the success of an utterance of "I'll be there" as an (inexplicit) act of promising. Of course, John and Mary must "exist" (in the sense of Chapter II, Section 2b.i) in order for him to successfully perform any illocutionary act), but it seems odd for us to call this a preparatory success condition on the act being thereby performed (since such a condition has nothing to do with the fact that the sentence is reporting the performance of an illocutionary act).
38. We should perhaps point out that Searle's conditions on promising are intended to apply only to explicit promises - i.e. only to performative utterance beginning "I promise" (p. 56). This should not, however, prevent us from extending the range of his conditions to cover inexplicit promises as well, since we assume that the essential and preparatory conditions are the same in both cases, and that the propositional content conditions, which are restrictions not on the upper performative clause but on the complement, are the same except when the verb corresponding to the act is factive; see Chapter V, Section 3.
39. Fraser presumably amended Searle's original formulation of this condition to allow for the possibility of such promises as

(I promise that) Bill will be there on time

(I promise that) no harm will come to you,

in which it is not an act to be performed by the speaker which is predicated by the (complement) sentence, but rather the coming about of an event (Searle, with the stated intention of restricting himself to "idealized" or "quintessential" instances of promising, ignores these cases). But it seems to me that there are two ways in which we can view the notion of the "content of a promise" (that which is expressed by a future declarative sentence or by a complement to promise): First, we can refer to the "promised situation" which the speaker (the subject of promise) is, by his promise, obligated to bring about; second, we can refer to the "promised action" which, when the sentence is uttered as a successful promise, the speaker is under the obligation to perform in order to bring about the promised situation. In general, the sentence does not specify the action by which the "promised situation" is to be brought about; but in particular, the "promised situation" can consist (as it does in the "idealized" case) of the carrying out of an action by the speaker (as in "(I promise that) I will give you a dollar" - in this case the "promised action" is of course specified). Thus every promise involves an act to be done by the speaker (the subject of promise), by which he is to bring about the promised situation (as specified in the utterance), even when the promised action itself is not specified in the sentence which is being used to make the promise (i.e. even when the "promised situation" is not identifiable with the "promised action"). It is not clear whether Fraser's (1972) specification of the propositional content of a promise should be taken to refer to the "promised situation" or to the "promised action," as I have drawn the distinction between these two. If, as he says, the act predicated by the propositional content of a promise need not be an act "to be carried out by the speaker" (p. 11), then it is not the "promised action" (which is always to be carried out by the speaker) which the propositional content of a promise specifies; but if, as he also stipulates, "the propositional content of a promise must predicate some future act" (ibid; italics mine), the possibility of a "promised situation" consisting of a state rather than an action or an event is overlooked.

Thus, for example, in "I promise that by tomorrow, John will know all there is to know about the principles of nuclear thermodynamics," no act is predicated of anyone, neither John nor the speaker; the propositional content of this promise states only that a future situation will come about (although the speaker might optionally specify just what he expects the "promised action" (which he is thereby placed under the obligation to perform) to consist of, say, by following the above promise with an utterance of ". . . - I intend to stay up all night trying to teach this to him, and I mean to succeed in doing so").

40. In the terminology of footnote 39, I would reformulate this as "the speaker intends the utterance to count as placing him under the obligation to perform the 'promised action,'" which may be any action which is such as to bring about the "promised situation." (But this reformulation may be a misrepresentation of Fraser's intention, as he did not make this distinction.)
41. We should perhaps point out at this stage that in both Fraser's and Searle's work, the emphasis is on specifying what kinds of conditions should be placed on performances of illocutionary acts; their respective specifications of the conditions on promising are intended primarily as examples (this is why Fraser in most cases does not try to justify the modifications he makes in the conditions he adopts from Searle). Thus it is perhaps not quite fair of me to examine and compare Fraser's and Searle's formulations of these conditions and to take them to task over details which are inaccurate or omitted, since these formulations were probably only meant as rough approximations. The discussion to follow should therefore not be taken so much as a criticism of their analyses as an attempt to make these approximations more accurate.
42. In an earlier paper (1971) Fraser stated the "desirability" condition on promising as "the speaker believes that his action is in the hearer's best interests." But it is evident that neither this nor a statement that the specified action is in fact in the addressee's best interests is a condition on the truth of a sentence like (51). To see that it is not a necessary condition, note that we may quite successfully promise a child to give him some candy as long as he wants the candy, even if it is bad for him (or we think it is bad for him). The addressee's "best interests" are not at issue in promising: His desires (or, at least, his preferences) are. Conversely, if a child does not want to take his medicine, then even if both he and his parents believe, and correctly, that it is in the child's best interests to take it, still, any attempt on the part of the parents to "promise" to give the child his medicine is sure to be unsuccessful.
43. This is just to say that "hearer" is a misleading term when used in reference to what we are calling the "addressee," not that Searle was unaware of the distinction.
44. By placing the terms "would prefer" and "affected" in quotation marks I am suggesting that these might be universal semantic pro-forms. It is not inconceivable that the formalized predication of "preference" we are employing might be identifiable with Fillmore's notation "GOOD [Situation]" (i.e. the "Situation" is GOOD): perhaps "GOOD" can be interpreted (as it is by Fillmore) as "praiseworthy" when it refers to past or present situations and as "desirable" or "preferable" when it refers to possible future situations.

45. However, there is a sense in which I can report that "John promised" even when John has no control over the future event. That is, there is a related but distinct sense of promise which can also be used performatively and is more or less synonymous with assure; this sense lacks the control presupposition. Thus "I promise you that all will be well" means, on one reading, that the speaker will see to it that all is well, and on the other, that the speaker is sure that all will turn out well, but not necessarily through any intervention on his part. If all does not turn out well, the speaker will, on the first reading, have broken his promise; on the second reading he will be guilty only of poor judgment. We can call the first sense of promise the "control" sense, the second the "non-control" sense. The non-control sense of promise allows non-future complements: "I promise you that John has already left." Throughout this paper, when we refer to promise we will always be referring to its "control"-sense, which we shall also call promise₁ (the non-control sense is promise₂. (See also Appendix 4 and footnote 37, Chapter V.)
46. Note also that in order for (56) to be true - in order for John's utterance to constitute a successful promise - it is not necessary for John to have control over all Bill's actions, but only enough control for him to ensure Bill's arriving on time.
47. Note that "John didn't promise Mary" also has a reading on which "not" denies that the essential condition on promising does not hold, without denying that the preparatory conditions hold. This reading is paraphrasable as "John said that he would be there, but he didn't thereby undertake the obligation to be there." (see also footnote 51.)
48. My impression is that in order for (61) to be true, (51) must be false on both its explicit and inexplicit readings - i.e. it must be false both that John said to Mary "I promise that I will be there" and that he said to her "I will be there." This would be counterevidence against my assumption that the explicit and inexplicit senses of (51) constitute two poles of an ambiguity. If, on the other hand, (51) is "neutral" or "vague" between these two senses, so that it can be taken to assert that John made a promise either by an explicit performative or by a non-performative utterance which counted as a promise, this would be consistent with (61), the negation of (51), asserting that John did not promise either by an explicitly performative or by a non-performative utterance.
49. It is probably no accident that Fraser's rough definition of "preparatory conditions on the performance of an act" characterized these as "the pre-utterance requirements on the speaker and hearer" which must hold of them before an utterance by the speaker can count as a successful performance of the act in question. (That "before" in the last sentence was meant to refer to logical, not

chronological, priority.) We will take advantage of the analogy between the notion of a "pre-utterance" condition on John's utterance of "I will be there" being a successful promise and the notion of a "presuppositional" condition on an utterance of "The King of France is bald" successfully making a statement (i.e. having a truth-value) in Section 3b.iii, where we give a unified definition of "logical propriety" for all kinds of sentences and utterances.

50. i.e. they are at least presuppositions of the inexplicit reading of such a sentence, which always entails that the act was successfully performed. Those speakers who judge also the explicit reading of a reportive sentence to require that the act was successfully performed (as opposed to just "performed," or "performed, but not necessarily successfully"), who consider the satisfaction of the preparatory conditions (as opposed to the satisfaction of just the propositional content and essential conditions) on the act to be necessary conditions on the truth of the explicit reading as well as the inexplicit reading of the report, would presumably judge both readings (or both senses) of the reportive sentence to presuppose that the preparatory conditions on the success of the act were satisfied.
51. The negated (non-ceremonial) performatives whose existence we pointed out in Appendix 3 ("I don't accuse you of taking the money," "I don't claim to know the answer," etc.), while they are not themselves performative (i.e. we distinguish between these "negated" performatives and "negative" performatives like "I deny that" or "I refuse" which are themselves performative), might be viewed as providing additional evidence that the preparatory conditions on the successful performance of illocutionary acts can be expressed as presuppositions of performative sentences. While I cannot explain why some performative sentences, but not others, are grammatical under negation (the ceremonial/non-ceremonial distinction does not exhaust the data), I have observed that when negation is possible, an utterance of the negated sentence is "inappropriate" in a certain way just when the preparatory conditions on the success of the corresponding act do not all hold. For example, an utterance of

(i) I don't promise to see every movie Bogart ever made

would be inappropriate if the addressee didn't particularly want the speaker to see all of Bogart's movies, if the addressee did not prefer this, or would not be affected by it. However, I have no conclusive argument in favor of my conjecture that this "inappropriateness" is of the same order as truth-valuelessness - i.e. that it is the sort of "badness" we would want to call "logical impropriety." There might be some support for it in the observation that in

(ii) I don't accuse you of writing the letter - I credit you with it,

the not denies that one of the presuppositions triggered by accuse (to the effect that writing the letter was "blameworthy") is met. (Compare the reportive sentence (62) "John didn't promise Mary that he would be there.") But on the other hand, an utterance of

(iii) I don't promise to be there

seems to assert (as we noted in footnote 47) that the speaker does intend to be there but that he is unwilling to undertake the obligation to be there - that is, here the not denies that the essential condition on promising is met, without denying that the preparatory condition - the presuppositions ordinarily triggered by promise - are met. Unlike (62), (iii) has (in my opinion) only this reading.

52. I would modify Fillmore's characterization of the presuppositions of a sentence by inserting "successfully" after "used" - it seems odd to say, for example, that the sentence "I promise to leave" cannot be "used in the function of making a promise" if the addressee doesn't want the speaker to leave - rather we might say that if the speaker did use the sentence in that situation he did not thereby promise successfully.

CHAPTER V - ILLOCUTIONARY ACTS: PAIRING SENTENCES AND UTTERANCES
WITH FORCES

"There is nothing either good or bad but thinking makes it so."

. . . Hamlet, Act II, Scene 2

In the previous chapter we pointed out that not only

(1) I promise that I will be there,

but also

(2) I will be there

can be used to make promises. But while (1) can only be used to make a promise (or to make a habitual or historical statement), (2) can also be used to threaten, to warn, to assure, predict, agree, claim, inform, etc. In order to perform any one of these illocutionary acts, an utterance of (2) must be such that all the conditions on the successful performance of that act are met.¹ In general, performative sentences are very limited as to the number of illocutionary acts they may be used to perform, but most non-performative sentences can each be used to perform quite a wide variety of acts. The purpose of the present chapter is, roughly, to make some headway on the two problems of determining which illocutionary acts a given sentence may be used to perform and determining which illocutionary acts a given utterance of a given sentence does in fact perform.

Section 1: Illocutionary forces: An approach to the pairing problems.

The goal just referred to will be more explicitly stated following a few comments on the notions "illocutionary act" and "illocutionary

force of a sentence or utterance." An "illocutionary act" is "the performance of an act in saying something as opposed to the performance of an act of saying something" (Austin, p. 99). The class of illocutionary acts includes the class of acts which are performed by explicitly performative utterances, such as promising, accusing, urging and forgiving, as well as certain speech acts which cannot (in English) be performed "performatively," such as threatening, criticizing, and praising. Verbs which predicate the performance of an illocutionary act are referred to here as "illocutionary verbs;" the class of illocutionary verbs includes the class of performative verbs, but it also includes those verbs corresponding to illocutionary acts which can only be performed inexplicitly, in the uttering of a non-performative sentence.² The actions described by these gerunds (promising, accusing, threatening, etc.) are contrasted with acts of saying something, or "locutionary" acts. Mumbling and screaming are acts of saying something (assuming that what is mumbled or screamed is a grammatical unanomalous sentence), but they are not illocutionary acts. Illocutionary acts are also contrasted with "perlocutionary" acts. A perlocutionary act is the performance of an act by saying something; it involves the production, by saying something, of

certain consequential effects upon the feelings, thoughts, or actions of the audience, or of the speaker, or of other persons: and it may be done with the design, intention, or purpose of producing them. (Austin, p. 101)

Some examples of perlocutionary acts are persuading, shocking, and frightening. Perlocutionary acts can generally be performed either verbally or otherwise. Illocutionary acts, on the other hand, are

typically performed verbally - that is, although an umpire's hand signals may perform ceremonial acts such as "calling" a player "out" or "safe," or the shining of a red light may count as an act of warning (as at a railroad crossing), these are merely cases of the substitution of a visual message for an audible one; convention dictates that the umpire's signal or the red light are meant to be taken in exactly the same way (respectively) as an utterance of "I (hereby) call you out" (or "safe," or whatever) or a written notice saying "You are hereby warned not to proceed beyond this point." Thus perlocutionary acts are not necessarily speech acts, and their performance is not governed by convention; while illocutionary acts are, by their nature, always either speech acts or visible or tactile messages which are conventionally understood to be code translations of particular speech acts. Illocutionary acts can further be distinguished from perlocutionary acts as follows: Just about any sentence, I should think, can have, when uttered, the effect of persuading or frightening; without having gone deeply into the subject of conditions on the performance of perlocutionary acts, it is evident that there are only very light, if any, restrictions on the syntactic form or propositional content of a sentence in order that it may be used to perform any particular perlocutionary act. On the other hand, there are varying degrees of restrictions of this sort on the performance of a given illocutionary act in the uttering of a sentence: For asserting, they only require that the sentence be declarative (that it express a statement); for promising, say, or urging, there are heavier restrictions. In other words, sentences are limited by their

form or meaning as to which kinds of illocutionary acts they are standardly (in the sense of Fraser (1972)) used to perform: "You must leave" cannot be used to make a promise, and an utterance of "I will leave" cannot count as urging someone to leave. But either of these sentences could be uttered with the intention of producing the "consequential effects" associated with any perlocutionary act, and, given the right circumstances, would produce them.

Each illocutionary act corresponds to an "illocutionary force." The set of illocutionary forces of a sentence indicates the illocutionary acts which the sentence (by virtue of its meaning; see footnote 6) may be used to perform; the illocutionary forces of an utterance of a sentence are the illocutionary acts which the utterance did in fact perform (i.e. if the utterance was non-performative, its illocutionary forces correspond to those illocutionary acts which it did in fact successfully perform). We assume a one-to-one-to-one relation between illocutionary acts, illocutionary forces, and illocutionary verbs.³ We will sometimes speak of a sentence S as having the "potential force of an A" when the illocutionary act A corresponds to one of the illocutionary forces of S; and we will refer to U(S), an utterance of a sentence S, as having the "actual force of an A" when A corresponds to one of the forces of U(S). (The terms "potential" and "actual" are of course redundant as applied to forces if it is specified whether a given force belongs to a certain sentence or to an utterance of that sentence; we introduce these terms only because it is often more convenient to say that "---" has the potential (or actual) force of an A than to say that the sentence "---" (or an utterance of it) has the force of an A.)

I claim that human linguistic capacity includes the ability to make intuitive judgments about the potential illocutionary forces of sentences and the actual illocutionary forces of utterances. Evidence for the first point is the fact that native speakers of a language, if presented with a list of sentences and asked: "Could that be (used to make) a promise? Could it be an accusation? Could it be a warning?", etc., they will give confident yes-or-no answers at least for clear cases, and we would expect there to be a high degree of consistency among all native speakers in their answers to any such question about any sentence - that is, we would expect about as much consistency as we would find if we asked about the grammaticality of sentences instead of about their potential illocutionary forces. This is because the set of potential illocutionary forces of a sentence is derived from the meaning of the sentence alone; native speakers making judgments as to the potential forces of a sentence depend only on their knowledge of their language and not on their knowledge of or beliefs about the world.⁴ Fraser (1972) stipulates that "a sentence has force F_i associated with the illocutionary act A_i if it at least satisfies the propositional content conditions of A_i " (p. 20). It seems to me that a statement of the propositional content conditions on the successful performance of an illocutionary act by an utterance of a sentence, as Fraser conceives of them, is exactly what is needed to account for the native speaker's ability to answer questions about the potential forces of a given sentence, since the propositional content conditions are also requirements on the sentence itself and not on an utterance of it. Thus I will claim, along with Fraser⁵, that the

potential illocutionary forces of a sentence S are just those forces corresponding to the illocutionary acts whose propositional content conditions are satisfied by S.

Evidence for the intuitive ability of native speakers to determine the actual illocutionary forces of an utterance is found in the device whose use we explained in Chapter IV, Section 3b.i, that of supposing that an arbitrary individual has overheard (and understood the meaning of) an utterance, assuming that the person is omniscient with respect to the circumstances surrounding the utterance (e.g. with respect to the relevant beliefs of the speaker and addressee, etc.), and asking whether, in the arbitrary person's opinion, a given illocutionary act was performed (i.e. asking him whether he would report that it was true that the speaker promised, accused, christened, etc.). That is, the fact that native speakers of a language do sometimes report that a certain illocutionary act was performed (by an utterance) while given different circumstances they might not report that act as having been performed by that utterance, in other words, the fact that languages contain such expressions as "He promised," "He requested," etc., which are appropriate or inappropriate as reports of the uttering of different kinds of sentences, depending on the circumstances of the utterance (as well as on the sentence itself), is justification for our assumption that native speakers can pick out the illocutionary forces of an utterance. Furthermore, although individuals will differ in their responses to questions about whether or not a given illocutionary act was in fact performed by a given utterance, these differences are derived from dis-

agreements about "facts," which result in the contrary opinions which may be held by any two arbitrary persons as to whether or not a given condition on the performance of a given act was satisfied by a particular utterance. But the conditions themselves - the criteria by which speakers determine whether a given act has been performed - do not vary from speaker to speaker within an ideal homogeneous speech community.⁶ That is, we are claiming that these conditions are part of the semantic component of the grammar; since the ability to determine the actual forces of utterances is an aspect of human linguistic competence which varies only marginally among speakers, it must be accounted for within a formal generative grammar. As we compared the ability of native speakers to specify the potential forces of a sentence to their ability to make intuitive judgments as to the grammatical well-formedness of sentences, so we can compare the ability of native speakers to determine the set of actual forces of an utterance of a sentence to their ability to make judgments as to whether or not the truth-conditions on the statement expressed by a sentence are satisfied - judgments as to whether the sentence is true, false or logically improper. The former pair of judgments ("potential" and "grammatical") are made by virtue of an individual's "grammar" or "knowledge of his language" alone; the latter pair ("actual" and "true" or "logically proper") are made according to criteria which are a part of "grammar" (perhaps of "universal grammar"), but in order to determine whether or not these criteria are met in a given situation, a person must draw on his "empirical knowledge," his beliefs about the world.

Since in order for an utterance to perform an illocutionary act, the sentence which is uttered must conform to the propositional content conditions on that act, it is clear that the actual illocutionary forces of an utterance of a sentence must be a subset of the potential forces of the uttered sentence. In terms of the intuitive ability we are trying to capture, if someone is to be able to report an utterance U(S) as having performed an illocutionary act A, it must be the case that this person (or, presumably, any other native speaker) would have answered "yes" had he been asked "Could S be an A?" For example, the set of potential forces of

(2) I will be there

includes, as we (indirectly) pointed out, promising, threatening, assuring, predicting, and many others; the actual forces of any particular utterance of (2) will be a subset of these - in this case (as in most), a "proper" subset, since an utterance of (2) cannot be, say, both a promise and a threat, since the respective conditions on the performance of these two acts by an utterance of (2) are mutually contradictory (promising has a "desirability" condition but threatening has an "undesirability" condition). Thus an account within the grammar of the ability of speakers to determine the actual forces of utterances should reflect its relationship to their ability to determine the potential forces of sentences.

We said in Chapter IV, Section 2c, that in order for a performative utterance to "count as" having performed the illocutionary act corresponding to its main verbs, it is only necessary that the essential condition on the performance of that act be fulfilled, but in order for a non-per-

formative utterance to count as the performance of any act, it must have successfully performed that act, so that in this case not only must the propositional content and essential conditions be satisfied by the utterance in question, but the preparatory conditions on the success of the act must have been met. This claim was made in order to account for my judgment on the ambiguity of sentences which report the performance of illocutionary acts, and to account for what I take to be the differences between the two readings. The same claim can be rephrased in the terminology of "illocutionary forces" if we stipulate that an utterance U(S) has the actual illocutionary force corresponding to the illocutionary act A if, assuming that S meets the propositional content conditions on A, it is either the case that (1) U(S) was performative and satisfied the essential condition on A or (2) U(S) was non-performative and satisfied both the essential and preparatory conditions on A.⁷

The classical view of generative grammar postulates a recursive device which generates the (indefinitely large) class of grammatical sentences of the language and which generates no ungrammatical strings (i.e., no strings of symbols which are not grammatical sentences of the language); see Chomsky (1963). But for every machine which generates an infinite set of strings of symbols according to internal criteria, there is an equivalent machine which inputs arbitrary strings of symbols and "accepts" or "rejects" them - that is, it outputs decisions as to whether a given string is a member of the set associated with the machine and its generative counterpart (see Schwartz (1968)).

Thus the "generative" and "acceptance" models are notational variants of each other. The generative approach is the one most often used in contemporary accounts of the workings of the various components of the grammar. On the other hand, my approach to the problem of pairing a sentence (on a given reading) with its set of presuppositions has employed the "acceptance" model. The "inside" of the "machine" contains the presupposition-schemata associated with each lexical item; the input, in an arbitrary case, is the deep structure representation of a particular reading of a sentence along with the answers to questions which inquire whether given propositions (derived according to the presupposition schemata associated with elements occurring in that deep structure by filling in material from the sentence itself) are true. The output of the machine is a decision on the logical propriety of each input (relative to a given version of "the facts").⁸

We will also be using an "acceptance" model in our account of how sentences and utterances are "paired," respectively, with sets of potential and actual forces by native speakers of a language. We will assume that the semantic component of the grammar contains two algorithms as follows: The first inputs sentences (i.e. their deep structures on a given reading) and outputs the list of their potential illocutionary forces (i.e. it outputs decisions on whether or not a given sentence has a given potential force). The second algorithm takes as input (1) the deep-structure representation of a sentence (on a reading), (2) the list of potential illocutionary forces of the sentence as determined by the first algorithm, and (3) the "relevant facts" (see below) inherent

in the circumstances surrounding a particular utterance of the sentence; it outputs the set of actual illocutionary forces of the utterance. The "relevant facts," just as in the case of the logical propriety algorithm, can be viewed as answers to yes-no questions: Going down the list of the potential illocutionary forces of the input sentence, the machine, which contains sets of schemata corresponding to the respective essential and preparatory conditions on the success of each act, applies each set of schemata in turn to the input-sentence, deriving in each case those propositions which must hold in order for the utterance to constitute a performance of the act under consideration. The "relevant facts" included in the input to the machine are the answers to these questions.⁹ For example (see Appendix 5), if the input-sentence is "Bill will be there," which has the potential forces of promising, threatening, etc., the algorithm for determining the actual forces of an utterance of that sentence will test that utterance for success as a promise by applying the essential- and preparatory-condition schemata associated with promising to the sentence, deriving such propositions as "The speaker intends his utterance of 'Bill will be there' to count as placing him under the obligation to bring about Bill's being there," "The addressee 'would prefer' Bill to be there," "The speaker has 'control' over Bill's being there," etc. The algorithm will "ask" whether these propositions are true of the situation in which the utterance took place - i.e. it will input the "relevant facts" - and if the answers to all these questions are "yes," the machine will output that promising is one of the actual illocutionary forces of that particular utterance of "Bill will be there." In a finite amount of time the machine will have run through

the list of potential forces of the sentence, and at the end its output will consist of the complete list of the actual forces of the input utterance (see the beginning of Section 4). Our claim in Chapter IV, Section 3b.ii, that the preparatory conditions on the success of an illocutionary act are, in the case of inexplicit performances at least, just the presuppositions of the input sentence plus the statements derived by applying the presupposition-schemata triggered by the illocutionary verb corresponding to the act to the input sentence (i.e. the preparatory conditions are just the presuppositions of the inexplicit reading of a sentence which reports that the act has been performed), contributes to the economy of the actual-force algorithm as a semantic sub-component, since the presupposition-schemata associated with illocutionary verbs serve two purposes: They determine whether a given sentence containing an illocutionary verb is logically proper, and they help to determine the actual forces of an utterance of a sentence.

Earlier in this section we distinguished between the illocutionary and the perlocutionary forces of an utterance, and we gave some examples of the two kinds of acts, but we did not give a definition of "illocutionary force" or "illocutionary act" which would be explicit enough to generate the list of all the illocutionary acts which can be performed by utterances of sentences. However, our algorithms for determining the illocutionary forces of sentences and utterances assume that the grammar contains such a list. If our only interest lay in constructing these algorithms, it would be (descriptively) adequate to propose a new class

of substantive universals to suit this purpose: {Illocutionary Force₁, IF₂, ..., IF_n}. That is, since there are only a finite number of illocutionary forces or acts, the algorithms do not need a recursive device to generate this set; a list will do. And a list, and an abbreviated one at that, is all I (or anyone else, to my knowledge) have to offer by way of a definition of "illocutionary force (act, verb)." On the other hand, there are the following two reasons why future research ought to be concerned with discovering a better definition: First, as we have asserted, each illocutionary force F associated with an illocutionary act A_F also corresponds to a verb or verbal idiom V_F, so that whenever someone performs A_F (or makes an utterance having the actual force F), it is the case that this person thereby "V_F'ed." Thus there exists something in the grammar called "the set of illocutionary verbs;" but to say (in a formal grammar) nothing about what the members of this class of verbs have in common with each other to the exclusion of other verbs would be equivalent to saying that among verbs, the distribution of the feature [±illocutionary] is random. And we know that it is not random; illocutionary verbs have (at least) the following features in common: All require human subjects, all are [-stative], and all those which allow complements allow only object complements.¹⁰ An explanatorily adequate definition of "illocutionary verb (force, act)" would have to account for these properties, but they are only a beginning.

A second reason why a mere list of illocutionary forces should be taken as no more than a temporary expedient is that it ignores the ordering relations among illocutionary acts. Fraser (1972) writes:

If, as we have suggested, illocutionary acts are not independent notions but heavily interrelated and hierarchically arranged, there will emerge a strategy for comparing the sentence-reading with the analysis of illocutionary acts. For example, since to confess that p entails having asserted that p , any semantic reading which denies the force of assertion to the sentence ipso facto denies the force of confession. (p. 20)

Fraser takes the position¹¹ that these "interrelations" among the members of the set of illocutionary acts do not take the form of a linear hierarchy or even of a hierarchy of equivalence classes, but rather of an n -dimensional space in which act A_i may be considered "higher than" act A_j along one dimension with the relation reversed along another dimension. I take no position on this issue except insofar as I agree that hierarchical relations do exist between pairs of illocutionary acts and that these must be accounted for within the grammar (one reason is that once they are accounted for, they will greatly simplify the algorithms for determining illocutionary forces). My only contributions to this account will be anecdotal, but I should like to point out that there are two kinds of contributions which can be made in this area - that is, two kinds of ordering relations which can be claimed to hold between a pair of illocutionary acts: The first would be to claim that $A_i > A_j$ because any sentence which could be used to perform A_i could necessarily also be used to perform A_j ; that is, any sentence with the potential force F_i corresponding to A_i also has the potential force F_j . For example, any sentence which can be used to predict can also be used to assert. (The relation is transitive; a potential promise is necessarily also a potential assertion.) The second kind of claim is made about acts actually performed by utter-

ances: It is sometimes the case that any utterance which in fact has performed A_i has necessarily thereby also performed A_j . Fraser's comment that any confession (i.e. any performance of the act of confessing) is also an assertion falls in this category. For another example, since "undertaking an obligation" is an illocutionary force, we can say that every illocutionary act of promising is also necessarily an illocutionary act of undertaking an obligation. This latter kind of ordering relation can be expressed in terms of what entails a statement of the form "Speaker V_F 'ed . . ." has of the same form (but with a different illocutionary verb in the " V_F " context), and which sentences of this form the statement is itself a logical consequence of. (For example, "He promised to . . ." entails "He undertook the obligation to . . .") These two kinds of ordering relations do not always coincide. If the second kind holds between two acts, the first will too, but not vice-versa. Thus although every potential (inexplicit) promise is also a potential prediction and a potential assertion (i.e. although every non-performative sentence which has the potential force of a promise also has that of a prediction and assertion), an actual promise is not also a prediction or an assertion. If the intention of the speaker was that his utterance count as a promise - in particular, if his utterance was a promise - then it was not a prediction or an assertion.

For the rest of this chapter we will be concentrating on the problem of determining the illocutionary forces of non-performative sentences and utterances. This is because the analogous problem for performatives is relatively trivial. An explicitly performative utter-

ance has the force corresponding to its main verb as long as the uttered sentence satisfies the propositional content conditions on the corresponding act and the speaker intends his utterance to count as a performance of that act (in addition, if the performative act is a "ceremonial" one, the "authorization" condition must be met). Thus performative utterances can, by virtue of their meaning, have only the illocutionary force corresponding to their respective main verbs, plus those actual forces the utterance is thereby entailed to have - e.g. when "I promise" has the actual force of a promise it necessarily also has the force of undertaking an obligation, but by virtue of being a promise it necessarily lacks such forces as predicting and asserting. I think the potential forces of a performative sentence (on its performative reading)¹² can be considered to be the same in each case as the actual forces of an utterance of that sentence. That is, not only does an utterance of "I promise" not have the actual force of a prediction when it is uttered as a promise, but we can also say that the sentence "I promise" could not be a prediction - i.e. it has not the potential force of a prediction. I may be wrong about this, but in any case, it is obvious that the task of writing rules to specify the illocutionary forces of performative sentences and utterances is not as empirically interesting as the parallel problem for non-performatives.


Section 2: The 'higher performative' theory of sentence-force pairing.

Ross ((1971a) and elsewhere¹³) has been working on a theory of sentence-force pairing in which the potential illocutionary forces of

a sentence are explicitly associated with it in the underlying representations of the readings of that sentence. Ross's analysis claims that a sentence having more than one potential force is thereby multiply ambiguous, with one reading for each potential force (aside from any other ambiguities the sentence may have).¹⁴ The way in which the grammar is assumed to pair a sentence with its potential forces is by giving each sentence S n deep structures (one for each of the n potential forces $\{F_1, \dots, F_n\}$ of S), each of the form " $I - V_F - (you) - S$ " (where V_F is the illocutionary verb corresponding to one of the n F_i). For example, the sentence

(3) I will be there,

which has, among others, the potential forces of promising, threatening, swearing, warning, predicting, agreeing and "telling," would have among its n readings seven which would have deep-structure representations expressible (respectively) roughly as follows:

(4)	I promise (you)		$S[(\text{that}) \text{ I will be there}]$
	I threaten		
	I swear (to you)		
	I warn (you)		
	I predict		
	I guarantee		
	I tell you		

Ross postulates a transformational rule of "Performative Deletion" which would optionally delete the upper clause containing the performative verb (those performative verbs corresponding to illocutionary acts which (in English) only be performed explicitly, such as "vetoing" or "raising"

(in bridge), must be marked so as to prevent the rule from applying to upper performative clauses in which they occur). From an empirical point of view, Ross's analysis of sentence-force pairing amounts to a claim that the set of illocutionary acts which can be performed by a sentence S are just those which correspond to the illocutionary verbs V_i such that it is possible to generate a grammatical sentence by embedding S under "I V_i (you)." Thus, for example, his theory predicts that (3) can be used to perform the acts of promising and warning, but not, say, those of accusing or requesting, on account of the impossibility of deriving a grammatical sentence from "I accuse you of S [I will be there] $_S$," etc.

Fraser (1971) sums up the performative analysis of sentence-force pairing (PA) as follows (p. 3):

The major thrust of the PA is that the force of each sentence should be stated explicitly as a part of the underlying representation of that sentence. The PA asserts that sentence force should be carried by a single performative verb present in the highest clause of the sentence, and that this highest clause can, under certain syntactically-statable conditions, be deleted.

He criticizes Ross's proposal on three grounds (all page references immediately below are to Fraser (1971)): First, he points out that "even when a verb is used performatively, it need not be the highest verb in the underlying representation or the surface structure" (p. 15); thus, in the case of "I regret that I must inform you of your dismissal" (p. 6), the illocutionary force of "informing" cannot be accounted for. Second,

there are a variety of cases of force-multiplicity of the sentence and there is no single verb, performative or otherwise, which can account for the total force (p. 15);

such cases include sentences which contain two performative verbs, both being used performatively (like "I admit that I concede the election"), sentences containing verbs which can be used either performatively or descriptively (such as approve and blame), and conjoined performative sentences: "I admit that I'm late and I promise that I will be on time from now on" (p. 11) has both the force of an admission and that of a promise, so that there is no natural choice for the "highest" performative verb which indicates the illocutionary force of the sentence as a whole. We will concentrate here on the third objection advanced by Fraser: "That the rule of Performative Deletion, when pushed to handle a wide range of . . . sentences . . . , appears to require a highly complicated state of conditions" (p. 15). That is, Fraser claims that there are enough cases to which the rule is inapplicable and enough others for which it is obligatory to weaken its effectiveness as a generalization. But I have found that the examples noted by Fraser - put forth as evidence for his claim that the rule will stand only when a detailed set of conditions is added to it - in fact lead to deeper doubts as to the adequacy of the Performative Analysis.

The first set of examples cited by Fraser, sentences which are such that application of the Performative Deletion Rule to them will result either in ungrammaticality or a change of meaning, involve adverbs in the higher clause (p. 13):

(5) a. I even claim that John will win tomorrow

⇒ Even John will win tomorrow.

b. I strongly agree that Suzan is the best

⇒ *Strongly Suzan is the best.

c. I only admit that I am not with the FBI

⇒ Only I am not with the FBI.

The fact that Performative Deletion must be blocked from applying to these sentences, argues Fraser, complicates the statement of the rule. It would not be sufficient to counter this objection by saying that Performative Deletion is automatically blocked from applying to these cases since (on account of their containing an adverb in the upper clause), they do not meet the structural description "I - V_F - (you) - S" of the Deletion rule. This is because it is possible that the transformation which moves adverbs which modify a main verb to the end of the sentence - changing, for example, (5)a above into "I claim that John will win tomorrow, even" - applies before Performative Deletion; if it does, its output structure would not be immune to Performative Deletion and the ungrammatical result of the application of that rule (e.g. "*John will win tomorrow, even") must, as Fraser originally claimed, be prevented by marking, either of the application of Performative Deletion as blocked for these cases or of the ordering between the two rules.¹⁵

The second set of examples put forth by Fraser illustrate more cases in which the rule must be blocked from applying, thus supplying further evidence that the rule of Performative Deletion must be more

complex than Ross had foreseen. He claims that the illocutionary forces of the following sentences are changed by the application of the rule (1971, p. 14):

- (6) a. I approve that you took the dog to the Vet.
- b. I apologize that we are late.
- c. I beg that we leave now.
- d. I move that he should be allowed to decide. (p. 14)

That is,

the embedded S "you took the dog to the Vet" does not have the force of approving, nor "We are late" that of apologizing. "We leave now" is not standardly begging, and "He should be allowed to decide" is hardly a move at a meeting. Conclusion: with some verbs, (e.g., approve, apologize, beg, move) the rule of performative deletion may not apply.

Actually, I find none of (6)a-d grammatically well-formed - but aside from (6)c (which makes no sense to me at all), each is illustrative of a relevant point: The reason that Performative Deletion does not apply to (6)a and (6)b has to do with the factivity of approve and apologize; however, as I will show later in this section, the fact that Performative Deletion does not apply to performative upper sentences of which the verb is factive cannot be accounted for simply by marking the factive performative verbs [-Performative Deletion]. (6)d also presents a problem which will add to the complexity of the rule. It seems to me that even though move allows complements, "moving" or "making a motion" is to be considered a "ceremonial" illocutionary act since it is only performed in conventional situations characterized by an understanding that all exchanges of information and proposals will be framed in standard "parliamentary" language.¹⁶ Now we said earlier

that Performative Deletion must be marked so as not to apply when the main verb of the underlying representation of a sentence corresponds to an illocutionary act which can only be performed explicitly. Most ceremonial acts have this property (as we pointed out in footnote 16, insofar as "making a motion" is considered a ceremonial act, it can only be performed explicitly); but some do not. For example, "You are out" (uttered by an umpire to a batter) can (inexplicitly) perform the ceremonial act of "calling" (a batter out, safe, etc.). Thus we cannot simplify the distribution of the verb feature [-Performative Deletion] by making it dependent on the "ceremonial" character of many of the verbs which have it, since there are exceptions.

Fraser cites two classes of examples of underlying forms to which the rule of Performative Deletion must apply obligatorily in order to avoid the generation of ungrammatical surface structures. The first involves problems of complementation, as in

- (7) a. *I request can you pass me the salt.
b. *I recommend that you should stay here. (p. 19)

The trouble with (7)a is that a sentence such as "Can you pass me the salt?" has the syntactic form of an interrogative, but it has the potential illocutionary force of a request to pass the salt as well as that of asking a question about the addressee's ability to pass the salt. However, request is not a verb which allows indirect questions to be embedded under it. In both (7)a and (7)b is also illustrated the problem of a sentence containing a modal having an illocutionary force corresponding to a verb which does not take indicative that-complements; the

idea is that, in general, modals are not allowed in infinitive, gerundive, or subjunctive that-complements, but verbs which are limited to taking one or more of these complements often do correspond to potential illocutionary forces of sentences containing modals. As with the case of factive illocutionary verbs, we will defer the discussion of complementizer difficulties until later.

The second class of cases for which Performative Deletion must be, according to Fraser, marked as obligatory is exemplified by

- (8) a. *I threaten that I will kill you.
- b. *I plead that you will spare his life.
- c. *I boast that I have done that. (p. 14)

The problem here is that the verbs threaten, plead, and boast cannot be used performatively, although they do (except possibly for boast) correspond to illocutionary forces. (As we pointed out in Section 1, there are quite a few non-performative illocutionary verbs - some others are criticize, scold, excuse, praise.) Several issues are raised by the possibility of allowing one reading of, say, "I'll kill you" to be derived from an underlying structure whose main verb is threaten. For one thing, the generalization that a sentence S has force F just when an utterance of S can be intended to be understood as (roughly) "I - V_F - you - S" (where V_F is the illocutionary verb corresponding to F) is weakened; that is, it accounts for nothing to say that an utterance of "I'll kill you" can count as the same thing as an utterance of "*I threaten to kill you" (or "*I threaten that I'll kill you") since these latter sentences are ungrammatical

and the competence grammar does not contain any information about the meaning or use of ungrammatical strings. For another, most transformations which are labelled "obligatory" (e.g. Katz and Postal's (1964) reformulations of Question, Relativization, etc.) are such that if one is not applied to a phrase-marker to which it is applicable, the structure will contain non-lexical items (such as Q or Passive) when it reaches the surface. It would be an interesting constraint on derivations if all obligatory transformations could be formulated to have such an effect, and an economical one too, since rather than marking each transformation either "obligatory" or "optional" we could write a general output condition to "throw out" such surface structures. But the surface structures of (8) do not contain non-lexical items; they are merely ungrammatical. Therefore the marking of the deep structures which would generate (8) as requiring the obligatory application of Performative Deletion cannot be circumvented (although see below).

A third objection to an analysis which simply marks Performative Deletion as obligatorily applicable to an underlying structure whose upper sentence is first-person present with a verb of the threaten class is that it conflicts with the notion of a "performative verb" (as opposed to a verb which can never be used performatively). Certainly this notion is central to Ross's analysis, so this is a crucial criticism. When Fraser "starred" the sentences of (8), this was to indicate that they were ungrammatical as performatives; however, they are acceptable when interpreted as "habitual present" (for instance, in the con-

text "Every day _____, but you don't listen to me"), or (perhaps only marginally) as "historical present." The problem is that if Performative Deletion is marked so as to apply obligatorily to the underlying structures of (8), it must further be conditioned so as not to apply to sentences beginning "I threaten (praise, etc.) you..." when the main verb is not being used performatively. But this is contradictory, since according to Ross, verbs such as threaten which are marked [-Performative] are always used non-performatively. The only way out for Ross seems to be to posit ad-hoc non-lexical pro-forms THREATEN, CRITICIZE, etc., which have the feature [+Performative] and which are always deleted before the surface level is reached.¹⁷

I agree that there is a linguistic universal "THREATEN" which refers to the illocutionary act of threatening and to one of the potential illocutionary forces of sentences like "I'll kill you" (as this is just to say that we would expect every natural language to have the wherewithal to express the idea of making a threat). But it is not clear that there is a pro-form : THREATEN which is able to carry the kinds of syntactic features associated with lexical verbs (e.g. [+performative], [-stative], [+human subject]).¹⁸ In particular, there are many differences between the pro-form THREATEN and the lexical verb threaten whose meaning the former is intended to share: Unlike threaten, THREATEN is [+performative], and unlike both threaten and all lexical performative verbs, THREATEN cannot be used in statements, questions, etc., but only in performative sentences; it never predicates "habitual" or "historical" actions of its subjects, even when that sub-

ject is first-person and the tense is simple present. Although THREATEN is [+performative] and therefore necessarily [-stative], it never occurs in the progressive, or in (the underlying representation of) imperatives like "Don't threaten me." It must be very strictly subcategorized as to the range of subjects and direct objects it can take (namely I and you respectively) and as to the tenses it can appear in (namely only present). The lexical verb threaten, on the other hand, since it can be used in statements or in questions, imperatives, etc., takes subjects and objects in all persons, and occurs in all tenses ("You threatened him," "He will threaten me," etc.). In fact, threaten even allows inanimate subjects (as in "The dark night threatened me") - but THREATEN, of course, does not, since it can only be predicated of something which is performing an illocutionary act by means of an utterance of a sentence, and such a "something which" is necessarily human. Because of these contrasts between THREATEN and those lexical verbs with which it is supposed to have something in common (namely threaten and the performative verbs), little appears to be gained by artificially decreeing that THREATEN is a "verbal pro-form" as well as an illocutionary force.

We now proceed to criticize the Performative Analysis of sentence-force pairing on the grounds that it does not pair the correct sentences with those forces which correspond to factive illocutionary verbs. Fraser argued that Performative Deletion must be blocked from applying to such structures as (6)a and b above because its application would re-

sult in a change of force. The change in force derives from a change in meaning: Factive sentences presuppose their complements, so if the factive verb is deleted the resulting sentence, consisting of the complement, merely asserts what its parent sentence presupposed. But the difficulty cannot be done away with by simply marking the rule inapplicable to performatives whose main verb is factive. The situation is worse than that: Factive performatives constitute an exception to the empirical generalization made by the Performative Theory that a sentence S has force F when an utterance of it can be taken as the equivalent of an utterance of "I - V_F - (you) - S." The generalization fails in two ways: First, when V_F is factive, the sentence which results from embedding a sentence S, which has F corresponding to V_F as a potential force, under V_F is, in general, either ungrammatical or has a different meaning from S. For example, the sentences of (9) have the illocutionary forces of an apology, a criticism, and a "thanking," respectively:

- (9) a. I'm sorry I chopped down the cherry tree.
- b. It was stupid of you to forget the letter.
- c. I am grateful to you.

But, ignoring problems of complementation, the result of embedding these sentences under the verbs corresponding to their respective illocutionary forces is

- (10) a. I apologize for being sorry for having chopped down
 the cherry tree.
- b. *I criticize you for it being stupid of you to forget
 the letter.

c. *I thank you for my being grateful to you.

(10)a does not mean the same thing as (9)a (although both have the force of an apology, there is a difference with respect to the content of the apology (what is "being apologized for" in each case)); (10)c is out on the grounds that the deep structure subject of a complement to thank must be identical to the direct object of thank in the upper sentence, and (10)b is ungrammatical due to a parallel constraint on the complement of criticize, as well as the fact that criticize is non-performative. Thus performatives with factive main verbs require an obligatory application of Performative Deletion when the complement clause by itself is a sentence whose potential illocutionary forces include the one corresponding to the main verb. The second situation in which the above cited generalization fails is, in a sense, complementary to the first: Clauses embedded under factive illocutionary verbs usually do not, when modified so as to be able to stand alone, have the corresponding force when the illocutionary verb is deleted. This is what Fraser was getting at in the examples cited here as (6)a and b. The results of applying Performative Deletion to

(11) a. I thank you for lending me a hand.

b. I forgive you for acting like an idiot.

c. *I criticize you for being a hypocrite.¹⁹

are, as far as I can determine,

(12) a. You lent me a hand.

b. You acted like an idiot.

c. You are a hypocrite,

respectively. The sentences of (12) have forces such as accusing or

crediting (depending on one's evaluation of the predicated actions) -- that is, forces corresponding to non-factives. In general, we may observe that sentences whose potential forces correspond to factive verbs (such as the examples of (9) above) are usually not simplex sentences but rather consist of a predication of action embedded under a factive emotive, expressing how the performer of the illocutionary act feels about the action. On the other hand, complements to illocutionary factives do not indicate what was said in the course of the speech act reported by the illocutionary verb, but rather state the purpose of the act of thanking, criticizing, etc. (For example, we thank someone for performing a good action toward us, or we criticize someone for performing a bad action, etc.) Although the correct potential forces will be predicted if it is stipulated that Performative Deletion is blocked from applying to (11)a and b (since here an application of the rule changes the force), there is no way for the Performative Theory to handle (11)c: If the rule applies, and V_F (criticize) is deleted, the complement sentence, although still a potential criticism, will have a different meaning (see footnote 19), but if the rule does not apply, an ungrammatical string will reach the surface.

Given the present state of linguistic theory with respect to the problem of assigning complementizers to embedded sentences it is not at all clear whether we can capitalize on the sentences of

- (7) a. *I request can you pass me the salt
b. *I recommend that you should stay here

as problematical for the performative analysis. Fraser claims that Performative Deletion must apply obligatorily in cases such as (7)b which consist of a sentence containing a modal embedded under an illocutionary verb which otherwise only takes complementizers (namely to and that + subjunctive) which do not allow modals (since these complements are tenseless). But the very fact that, for example, sentences beginning "You should" or those beginning "You may" can have the forces of Recommendation and Granting of Permission, respectively, may be evidence that complements to such verbs as recommend and permit, which are tenseless and modal-less in surface structure, are in fact derived from underlying structures containing should and may as well as an indication that the complement "refers" to the future.²⁰ Cases such as (7)a, which exemplify a sentence which has the syntactic form of an interrogative having an illocutionary force which corresponds to a verb which does not allow embedded questions as complements, require a different sort of theoretical modification, if they are to be accounted for by a higher performative analysis of illocutionary forces. Ross (personal communication) favors an analysis in which verbs are broken up into "semantic primes." Under such an analysis, the process of embedding an interrogative such as

- (13) { Could } you pass me the salt?
 { Would }

which has the potential force of a request, under request, need not result in a violation of the subcategorization restrictions for indirect questions, since (13) would be derived, on one reading, not from

- (14) *I request whether you { would } pass me the salt,
 { could }

but from something like

- (15) I say to you [I want you [you tell me [whether you
 {would}
 could pass me the salt]]],

in which the embedded question "whether you {would}
 could pass me the salt"

is embedded directly under tell (which allows questions as complements)

rather than under request (which does not). (Note that if we substi-

tute may or should for could or would in (15), the result is ungrammati-

cal; this, Ross claims, explains why "May you pass me the salt?" and

"Should you pass me the salt?" are not interpreted as requests.) Thus,

if we view the Performative Analysis in the context of such a theory of

the derivation of verbs, it cannot be criticized on the grounds that the

generality of the Performative Deletion rule is weakened because it must

apply obligatorily to (7)a. It must rather be evaluated in terms of

whether or not

- (16) I say to you that I want you to tell me if you would
 pass the salt

means the same thing (and has the same force) as a reading of

- (17) Would you pass me the salt?

But it seems to me that a sentence which begins "I want you to tell

me. . ." is always a request for verbal action - that is, it has only

the force of asking a question - and therefore never amounts to a re-

quest for physical action. In other words, we respond to (16) by answer-

ing "yes" (i.e. "I would") or "no" ("I wouldn't") or "Why do you want

to know that?" or "Why do you want me to tell you that?". (That is,

(16) captures only the question-force of (17), not the request-force.)

But we respond to (17) either by passing the salt, or refusing to do

so - and when we do refuse, we say "I won't," not "I wouldn't." Or we might say "Why do you want me to do that?"

Thus although mere difficulties with complementation in the Performative Analysis (e.g. its assumption that sentences containing modals can be embedded under verbs which do not allow tensed complements) can be glossed over (since, after all, complement requirements are largely language-specific, and we are dealing with universals here), real problems do come up when a sentence has a potential force corresponding to a verb which does not allow complements of that sentence-type (e.g. interrogative sentences can be requests, or suggestions, or urgings, but request, suggest, and urge do not allow interrogative complements). This, taken along with the other facts adduced by Fraser (1971) and myself,²¹ constitutes weighty evidence against the performative theory of sentence-force pairing.

Section 3: Some observations relevant to the construction of the sentence-force pairing algorithm.

In this section I expand slightly on my approach (following Fraser's and Searle's) to the sentence-(potential) force pairing problem, which differs from the "performative analysis" in that, among other things, it views the potential forces of a sentence not as part of the meaning of the sentence, to be indicated explicitly in the underlying representation of the sentence, but as something derivable from the meaning of the sentence, by universal semantic rules. Theoretically, our way of looking at the sentence-force pairing algorithm differs from

the "performative analysis" in that (1) the syntactic requirements on complements to performative verbs are not held to uniquely determine the propositional content conditions on the corresponding acts, and (2) we assume that "force-multiplicity" exists apart from ambiguity as an attribute of sentences, so that it is possible for a single reading of a sentence to be force-multiplicitous. Empirically, I will try to show that my theory can, at least in principle, account for those cases which were shown to require special marking within Ross's framework.

The "observations" contained in this section are mostly "factual" - in the form of generalizations about which sorts of sentences have which potential illocutionary forces; consequently, my contribution to a linguistic solution to the sentence force pairing problem will be of a rather anecdotal quality. The excuse for my failure to present a more coherent program is the fact that investigation has only recently begun into this problem and not enough "facts" have been looked at for us to know just what sorts of linguistic generalizations the proposed algorithm should be intended to capture: Thus any description of the form of the algorithm should be regarded as highly conjectural. Furthermore, I will (immediately below) argue that there is a syntacto-semantic problem of a very far-reaching nature to be solved before a formal statement of the algorithm is to be possible.

The problem is this: Fraser (1972) suggests that there is a "straightforward way of establishing" the conditions associated with each illocutionary act, based on the "syntactic and semantic analysis"

of its corresponding verb (p. 16). The essential and preparatory conditions on the success of an act are "determined" by the meaning of the illocutionary verb itself;²² as for the propositional content conditions on individual acts, he hypothesizes as follows (ibid):

In general, the syntactic conditions for well-formedness on the embedded complement of a performative verb determine the propositional content conditions on the corresponding illocutionary act: whatever the properties of the embedded proposition (e.g., "I will be on time" in the sentence "I promise that I will be on time") are the propositional content conditions on the act.²³

It is clear that there is a relation between the syntactic requirement that propositions embedded under promise be in the future tense and the propositional content condition on the act of promising that only predications of future acts or states can be potential promises. But what about the syntactic conditions on the well-formedness of clauses as complements to, say, urge or accuse? They specify, for example, that complements to urge must be tenseless - either subjunctive that-clauses or infinitives - and that the deep-structure subject of the complement clause must be co-referential with the object of urge when the complementizer is to:

(18) I urge that you write your Congressman.

John urged Bill (*for Mary) to hurry.

John urged that Bill {
hurry
*would hurry
*had hurried
*hurries.

Again, it is clear that there must be a relationship between the facts of (18) and the fact that "You hurried" or "Bill must hurry" are not potential urgings (while "Hurry!" and "You must hurry" are), but it is

not clear exactly what that relation is. For instance, although to-complements are syntactically tenseless, the statements expressed by infinitive complements are often taken to refer to a future time; this is the case with "expect to be there" or "intend to be there" as well as with the illocutionary "promise to be there." But not all to-com-plements refer to the future: "I consider him to have been a good father," "I like to swim." Until we can interpret the syntactic well-formedness conditions on complements to urge, etc. in semantic terms (i.e. until we can explain, with reference to the meaning of urge, why its complements must be either infinitive or subjunctive, we cannot explain how the syntactic well-formedness conditions on complements to urge determine the propositional content conditions on urging. The case of the verb accuse and the act of accusing is similar: accuse requires gerundive (Poss-ing) complements; non-futurity and the expression of a statement (as opposed to a question or an imperative) are propositional content conditions on accusing. Thus to imply (as Fraser's suggestion does) that the syntactic requirements on complements to accuse are what determine the propositional content conditions on accusing is to say that the reason why complements to accuse are restricted in the way they are is because only sentences with a certain kind of propositional content can be used to make accusations. That is, Fraser is assuming that it is possible to determine (universal) semantic correlates of (language-specific) features of complementation. I do not question the validity of this assumption, which was stated explicitly by Kiparsky and Kiparsky (1971) as follows:

The importance of a system successfully worked out along the general lines suggested above [the reference is to the authors' analysis of complements in terms of semantically-correlated features such as factive vs. non-factive, emotive vs. non-emotive, etc.] would lie in its ability to account not only for the syntactic structure of sentential complementation but also for its semantic structure and for the relationship between the two. Our analysis of presupposition in the complement system contributes a substantial instance of the relation between syntax and semantics and enables us to correct an error which has been made in most past work on transformational syntax. The error is that different types of complements (that-clauses, gerunds, infinitives) have all been assumed to have the same deep structure and hence to be semantically equivalent. We have seen that there is good reason to posit a number of different base structures, each mapped by transformations into a syntactic paradigm of semantically equivalent surface structures . . . This approach to a theory of complementation . . . eliminates the need for marking each verb for compatibility with each surface complement type, that is, for treating complementation as basically irregular and unpredictable. We account for the selection of complement types quite naturally by our proposal that there are several base structures whose choice is in large part predictable from the meaning of each predicate. These base structures are subject to various transformations which yield surface structures in which the relation between form and meaning is considerably obscured.²⁴

My point is that while, as Fraser claims, the "straightforward way" of associating potential forces with sentences is to consider the propositional content conditions on the performance of an act to be derived from the restrictions on clauses appearing in complementation to the corresponding illocutionary verb, it is apparently impossible to state these derived propositional content conditions in semantic terms - that is, as (universal) conditions on propositional content rather than merely as (language-specific) conditions on well-formed complementation - without also undertaking the task of discovering the semantic basis for the apparently idiosyncratic distribution of surface complementation

features within a given language. Thus any progress made on this latter task is a contribution - perhaps a contribution of the most significant kind - to the solution of the sentence-force pairing problem. It is beyond the scope of this thesis, however,²⁵ to make any more than exemplary contributions of this nature. Most of my contributions will be rather on the level of (fairly obvious) generalizations about (1) which illocutionary acts can be performed by sentences fitting a number of very general schemata (expressible also in terms of their "propositional content") and (2) the complementation restrictions associated with selected sub-classes of illocutionary verbs.

Below we list some data in the form of a number of observations that a sentence having such-and-such characteristics has such-and-such potential illocutionary forces. The sentence-characteristics in question are either semantic in nature (i.e. they are specifiable in terms of the propositional content of the sentence), or they are syntactic or lexical in nature but assumed to be derivable from universal semantic correlates. The assumption is made that none of the sentences which these characterizations are designed to apply to contain any modals, except where indicated,²⁶ nor any adverbs.²⁷ Also, the sentence-characterizations are meant to apply to deep structures, on the understanding that such transformations as Passive, Clefting, etc. have no effect on the illocutionary forces of a sentence.

Sentences with these
characteristics:

have these potential forces
(among others):

Category

1. Declarative future (beginning
"NP will . . .")²⁸
promise, swear, threaten,
offer, consent, agree,
guarantee, volunteer, pre-
dict, bet, opine.
2. Imperative
warn, urge, advise, recom-
mend, suggest, propose,
move, vote, ask, request,
beg, order, command, demand,
insist.
3. Declarative non-future;
attribution of a predicate
nominal or adjective to an
(animate) individual (of
the form "NP₁ (past) be
NP₂
{Adj}," where the predicate
noun or adjective indicates
a subjective value judgment
- e.g. "good," "a good
thing," "stupid," "right,"
"nice")
praise, congratulate, criti-
cize, scold, complain about,
concede, admit, justify,
forgive, apologize, blame.²⁹
4. Declarative non-future: pred-
ication of an action or a
non-stative quality of an
(animate) individual (of the
form "NP (past) (progressive)
[V
-stative]" or "NP₁ is
{ NP₂
Adj
[-stative] }")
accuse, credit, blame,
admit, concede .
5. Interrogative (without modals)
ask, inquire.
6. Declarative without modals
(except possibly will or
shall read predictively)
assert, etc.³⁰

(The characterization of Category 6 is meant to imply that any sentence fitting into Categories 1, 3, or 4 is also in Category 6: This is a statement about ordering relations among potential forces (see Section 1).)

As a next step, we look at the illocutionary **verbs** corresponding to the forces listed as potential forces of each category of sentences we have listed, and try to indicate what the members of each of these subsets of illocutionary verbs have in common (to the exclusion of non-members) in terms of the syntactic conditions these verbs place on the well-formedness of clauses in complementation to them:

Category:

1. These are verbs which either take that-complements with the embedded verb in the future, or to-complements with the restriction that the subject of the complement must be identical to the subject of the higher verb. They never take poss-ing complements.
2. These verbs either take to-complements with the restriction that the subject of the complement must be identical to the object of the higher verb or tenseless (subjunctive) that-complements; they require the "next verb down" to be [-stative].
3. These are all factive verbs which take Poss-ing complements. But most of them sound odd with complements of the form "the fact that . . ." (the exceptions are complain about and admit).
4. This class includes both factive and non-factive verbs which take Poss-ing complements and require the next verb down to be [-stative].
5. These are the non-factive illocutionary verbs which take indirect questions as complements.
6. As we stated earlier, (footnote 30) these are the only illocutionary verbs whose corresponding forces are potential forces of any declarative indicative sentence.

I will now make a few comments about each of these classes of verbs and their corresponding forces, indicating what sort of a relationship we might look for between the form or propositional content of the sentences having potential forces of a given category and the complementation restrictions associated with the illocutionary verbs corresponding to these forces. One overall observation is that (within this corpus) illocutionary verbs which allow to-complements correspond to the potential forces of sentences in the future tense,³¹ while illocutionary verbs which allow (Poss)-ing complements correspond to the illocutionary forces of non-future (present, past, or habitual) sentences. The that-complementizer, unless it introduces a subjunctive clause (in which case the implied tense of the complement is future, as in 'I urge that you leave'), is neutral as to tense and allows (in fact, requires) the tense to be indicated explicitly within the complement clause.³² However, although the correlation between to-complements and futurity is not limited to complements to illocutionary verbs, there are many verbs outside this class whose complements do not necessarily have a future interpretation, e.g. prefer, continue, like, believe, happen). The fact that imperative sentences have forces corresponding to verbs which take that+subjunctive complements is not surprising; the relation between imperative sentence-type and subjunctive mood is explicit in some languages, Spanish, for example, so it is not unreasonable to conjecture that there exists an analogous but implicit relation in the underlying structure of English, which is obscured in the transformation to surface structure (possibly because, in part, the English subjunctive is, outside the third-person singular, indistinguishable from the indicative in surface structure). All this

points to the need for a great deal of research into the interrelationships among the future tense, the subjunctive mood, the will- and shall-modals, and the to-complementizer in English, as well as into the generalizations which can be made about these and their cognates in other languages.

Category 3, the factive illocutionary verbs, constitute the major exception to the generalization implicit in Ross's work that it is possible to make any potential illocutionary force of a non-performative sentence explicit by embedding the sentence as a complement to the performative verb corresponding to that act. As we pointed out, complements to factive illocutionary verbs (which are also "emotives"³³) indicate the purpose, not the content, of the utterance which performed the corresponding illocutionary act.³⁴ (For example, one can perform the act of apologizing by uttering "I am sorry," but this is not the same thing as apologizing for being sorry.³⁵)

Section 4: Observations on the actual illocutionary forces of various sorts of utterances.

In this section the discussion will be limited mostly to empirical observations and generalizations about the facts which an adequate utterance-force pairing algorithm would be expected to cover. Since the input to this algorithm includes the output of the algorithm which pairs sentences with potential forces - that is, it includes a list of the potential forces of the sentence which was uttered - we can assume that the actual-force algorithm is divided into sub-components, each

corresponding to one category of propositional content conditions (the categories will be somewhat overlapping). For example, one sub-component (the one we outline the workings of in Appendix 5) might deal with the determination of the actual forces of utterances of sentences satisfying the propositional content condition on promising, threatening, predicting, etc. - the Category 1 forces. Thus the discussion of the actual-forces of utterances will be partitioned according to the categorization of forces into propositional-content groups which we offered in the preceding section.

Before we begin to look at the facts, I would like to offer a few conjectures as to how the utterance-force pairing algorithm "works": In Appendix 5 we trace the travels of a sample input sentence, "Bill will be there," through the actual-force algorithm, showing how the answers to questions about (the circumstances surrounding) any particular utterance of this sentence are used to determine its actual illocutionary forces. This branch of the algorithm (the branch which deals with utterances of sentences satisfying propositional content conditions of declarativeness, indicativeness and futurity) - like other branches, had I ventured to formulate them - is not intended to reflect the real-life reasoning processes, conscious or unconscious, which a native speaker of English goes through when he is trying to figure out whether a particular utterance of, say, "Bill will be there," constituted a promise or a threat or merely a prediction. Clearly the workings of this "machine" are much simpler in practice: For example, the algorithm as I have written it asks many of the same questions over and over (e.g. it asks whether the addressee would be "affected" by Bill's being there as it tries to figure out whether the conditions on promising are met

and then asks the same question again in conjunction with its attempt to discover whether the utterance was, say, an assurance). This particular kind of complexity (i.e. redundancy) could be curtailed if the machine were programmed to omit the asking of questions which it could already answer by itself on the basis of prior information: For instance, if the input received while the machine was asking whether the conditions on promising were met by an utterance indicated that the essential condition, or the "desirability" preparatory condition, on promising was met, it would not need to ask whether the essential condition on predicting was met (since if the utterance was intended as a promise it could not have counted as a prediction) or, respectively, whether the "undesirability" preparatory-condition on threatening was met (since this and the "desirability"-condition on promising are mutually contradictory). That is, the unwieldy nature of the utterance-force pairing algorithm as it now stands (in spite of its covering only a limited number of the potential forces of the input sentence) could be partially corrected by what amount to computer-programming techniques. But I have not bothered to undertake any improvements along these lines, since to do so would draw attention away from the much more significant empirical issues raised by my formulation of the algorithm: First, does the "simplification" of the algorithm (not its simplification as a "program," but its simplification according to the demands of explanatory adequacy, with the goal of making it a more accurate reflection of how decisions on the actual forces of utterances are made by native

speakers) belong in the "competence" grammar (the semantic component) or in a theory of conversation? Second, what will this simplification consist of? The crucial questions to consider are the order in which the propositions derived from the preparatory-condition schemata of the acts being considered are checked for truth, and the relative order of consideration of propositions derived from the essential condition and the preparatory conditions, respectively, associated with a given act. As to the first issue, I think that some "simplification" questions should be decided within the semantic component of the grammar - for example, those whose answers are based on the "ordering relations" between pairs of actual forces of an utterance (these are discussed later in this section). It is also possible that there are ordering relations among preparatory conditions, within each propositional content group, and that these should be accounted for in the competence grammar, since they have bearing on the entailments of sentences containing the corresponding verbs. For example, within the promise-threat-warning-prediction group (Category 1 in Appendix 4), every act which has a "desirability" or "undesirability" preparatory-condition - e.g. promise, threat, warning, but not prediction - also has an "affectedness" preparatory-condition, while the reverse is not true ("swearing" has an affectedness condition but not a desirability or undesirability condition; see Appendix 4). Outside this group, however, this ordering relation does not hold - thus "crediting" and congratulating require "goodness"-conditions but not affectedness-conditions; thanking and forgiving have goodness- and

badness-conditions respectively and affectedness-conditions as well.) But other simplification amendments, such as those outlined immediately below, are probably determined by the rules of conversation.

What happens when the machine (in practice) tries to determine the actual forces of an utterance of a sentence (given the potential forces of the input-sentence) is imagined to be something like the following: First, the machine scans the input utterance to see if its context contains any indication that any essential condition associated with any of the potential forces of the sentence is either violated or satisfied. For example, an utterance of "Bill will be there," uttered in the context "____, unless he changes his mind," clearly does not satisfy the essential condition on promising, since the context of the utterance makes it obvious that the speaker did not intend to undertake the obligation to bring about Bill's being there. When the essential condition on a given act is thus explicitly violated, the machine does not bother to ask about any of the propositions derived from the preparatory conditions on the success of that act. On the other hand, an utterance of this same sentence in the context "____ or I'll eat my hat" would ordinarily be assumed by an arbitrary listener to imply that the speaker is undertaking the obligation to see to it that Bill is there (although, on the contrary, the speaker may be presumed to be making a bet). And when the essential condition on a given act is thus explicitly satisfied, the machine then goes through the questions about the propositions derived from the preparatory conditions on that act. If these are satisfied the algorithm

outputs that it is this act (along with whatever acts are thereby entailed to have been performed; see above on the "hierarchy" or actual forces) which constitutes the actual force of the utterance. If not all the preparatory conditions on the act are fulfilled by the utterance, the machine outputs that this particular act was not performed by the utterance. (If the utterance was an explicit performative, then, given my analysis of the conditions on the (not necessarily successful) performance of an illocutionary act by an explicitly performative utterance, it follows that the machine outputs that the force corresponding to the performative main verb is an actual force of the utterance just in case the essential condition is satisfied.) When there is no explicit indication (by means of the presence of a performative verb or otherwise) that the essential condition on any of the acts corresponding to the potential forces of the input sentence is satisfied, it might be supposed that the machine asks questions about the satisfaction of the preparatory-conditions associated with the input (potential) forces; then if the preparatory conditions on any of the corresponding acts are all satisfied, the machine asks about the satisfaction of the essential condition on that act. The reason for this supposition, that the preparatory conditions on each act are considered before their respective essential conditions, is that the essential condition on the success of an illocutionary act is a matter of the speaker's intentions, while the preparatory conditions are matters of fact (although these "matters of fact" may include "facts" about the speaker's, or the addressee's, beliefs,

preferences, etc.); in practice, the only indication the listener often has of the speaker's intentions in producing a particular utterance is his own estimate of which illocutionary acts are such that the utterance satisfied their respective preparatory conditions. For example, the reason we would not (under most circumstances) hesitate to describe an utterance of "I'll buy you an ice-cream cone" as a promise is that we would ordinarily figure that (1) ice-cream cones are inherently "desirable," so it is reasonable to assume that the addressee of this utterance would prefer being bought one by the speaker to that event's not coming about, (2) it is obvious that the addressee would be affected by the future event, (3) it is certainly in the speaker's power to buy the addressee an ice-cream cone, (4) none of these propositions is very controversial, so that the utterer of this future sentence probably would also consider them to be true, and therefore (5) if he does, he couldn't have intended his utterance to be a threat (since he thinks that the addressee wants to be bought an ice-cream cone), and he probably didn't intend it as a prediction (since predictions usually are of things not under one's control, like the weather), so . . . (6) Hmm! He probably meant his utterance as a promise, considering it to place him under the obligation to buy the addressee an ice-cream cone. Thus it is clear that in terms of the conventional rules governing the decisions made by native speakers on the actual forces of utterances, the essential and preparatory conditions are interrelated and, under some circumstances at least, dependent on each other. But as far as the formulation of the

utterance-force algorithm within the competence grammar is concerned, it is irrelevant how the arbitrary judge comes by a belief that the essential condition (or any preparatory condition, for that matter) on a given act was met by a given utterance; the algorithm merely requires him to answer "yes" or "no." In other words, the algorithm says simply that in order for a given utterance to have actual force F, both the essential and all the preparatory conditions on the illocutionary act corresponding to F must hold. It need make no observations about the fact that the satisfaction of one sort of condition may implicate the satisfaction of another, but only about the semantic entailments which may hold between the fact that some condition was satisfied and the fact that some other condition was also met.

Sometimes the reasoning process we have been describing breaks down for lack of sufficient information, as evidenced by the commonness of such questions as "Is that a threat or a promise?" or "Are you trying to assure me or warn me?". In such situations the native speaker finds it possible to "narrow down" his judgment of what the actual illocutionary force of an utterance might have been to a certain extent, without being able to pinpoint it exactly. It is possible to reflect the way native speakers view utterances whose actual forces they cannot determine precisely within our sketch of the conversational rules working in conjunction with the utterance-force algorithm. Since this algorithm can be thought of as working by a process of elimination (see Appendix 5), it could be programmed so that when not enough information is available to eliminate either of two mutually

contradictory forces (such as threat and promise), it would fail to output a decision specifying the actual forces of the utterance, but it would output a communication that certain specified forces were still in the running. This reflects the fact that someone will ask of an utterance "Is that a threat or a promise?" just when the uttered sentence satisfied the propositional content condition on both threatening and promising, and he judges the "affectedness" and "control" conditions associated with both acts to be satisfied, but he does not know (or cannot decide) whether the addressee would consider the future situation referred to in the utterance to be "desirable" (which would be necessary if the utterance was to have been a promise) or "undesirable" (as required by acts of threatening).

We now proceed with our observations about the actual forces of utterances of sentences within the various propositional content categories. We will be concentrating primarily on the prepratory (as opposed to the essential) conditions associated with the various forces, corresponding to the presuppositions triggered by (non-ceremonial) illocutionary verbs. The table in Appendix 4 is referred to throughout the discussion.

4a. On the actual forces of utterances of future declarative sentences (Category 1).

We have included assure in the list of potential forces of sentences beginning "NP will . . .," but actually "assurance" is a potential force

of almost every declarative sentence (the exceptions generally contain modals); likewise, the verb assure takes that-complements in any tense. Thus assure might be said to be equivalent to assert plus a "desirability" ("preference" plus "affectedness") condition. Similarly, warn₂ is equivalent to assert plus an undesirability condition. Thus all of the following are grammatical:

- (19) a. I warn you that Bill will be there.
 b. I warn you that this bull is dangerous.
 c. John warned us that Bill had already arrived.

Since only those illocutionary acts which require either futurity or non-futurity as a propositional content condition have a preparatory condition requiring that the speaker or addressee have "control" over the future or existing situation, assure and warn₂ do not trigger "control" presuppositions. A propos of this, it is interesting to note that there are senses of promise and swear (and to some extent of guarantee) which take that-complements in any tense (that is, the corresponding acts do not require futurity as a propositional content condition), and lack a control condition. For example:

- (20) I $\left\{ \begin{array}{l} \text{promise you} \\ \text{?guarantee} \\ \text{swear (to you)} \end{array} \right\}$ that {Mary is trustworthy
 John really meant it}.

Here promise and guarantee are being used more or less synonymously with assure, and swear (which has no "preference" condition) with assert.³⁶ True, such locutions are stronger than assert and assure; they carry an implication that the addressee has reason to doubt the assertion, and that the speaker is some sort of authority on whether or not the

complement is true. However, these distinctions are describable in terms of conversational implicature or "style" rather than as entailments. We will refer to the non-control, neutral-as-to-tense senses of these verbs as promise₂, swear₂, etc. (un-subscripted references to these words are assumed to refer to the sub-1 sense). This means that such sentences as

- (21) a. I promise you that Bill will be there
b. John promised me that he would help me.

are ambiguous between control and non-control readings, although the control reading is always preferred to the extent that someone who wanted to express the non-control reading would probably avoid the use of promise altogether in order not to be misleading. It is interesting to note that promise₂, unlike promise₁, does not allow a to-complement even when the subject of the complement is identical to the subject of promise₂. Thus "I promise to help you" is unambiguous, in favor of promise₁. That is, when promise (likewise swear) takes an infinitive complement the control presupposition always holds. This is probably because a to-complement with promise is always associated with futurity and, as in the case of (21), the control-reading of promise is always preferred when its complement is in the future. Several illocutionary verbs in Category 2 also have a non-control sense (we will look at these in the following sub-section). For the acts corresponding to these non-control verbs, as for the acts corresponding to promise₂, swear₂, etc., the lack of a preparatory "control"-condition (and the non-triggering of a "control" presupposition by the corresponding

verb) correlates with a relaxation of the propositional content conditions on the act (analogously, the syntactic restrictions on complements to promise₂, insist₂, etc. are weaker in that that-complements in any tense are allowed).³⁷ Since verbs (in Category 1) which do not have "control"-senses - e.g. assure and predict - do not allow to-complements (but rather only that-complements), it may be that infinitive complements (at least to illocutionary verbs) can be correlated with the notion of "control" as well as with that of futurity.

Finally, note that of those acts (and their corresponding verbs) in Category 1 which do have a control condition, this always specifies that it is the speaker (the subject of the corresponding verb) who has control over the future situation referred to in the utterance (or in the complement to the corresponding verb). Moreover, as we pointed out in Chapter IV, Section 3, in regard to promising, it is always "real" (as opposed to "(logically) possible") control which is required of the speaker. This is in contrast to the acts of Category 2, all of which require the addressee of the utterance (or the object of the corresponding verb) to have "possible control."

4b. On the actual forces of utterances of imperatives (Category 2).

Category 2 forces, such as requesting, urging, ordering, and advising, are listed in Appendix 4 as requiring "object/addressee control." This means that the addressee of an utterance which performs one of the corresponding acts (or the personal object of the correspond-

ing verb) must have "control" over whether or not the request, advice, etc. is to be carried out. But here "control" is interpreted as "possible" control: An individual has "possible control" over a future situation if it is "logically possible" for him to act so as to bring the situation about (while the control-acts of Category 1 required "real control" of the speaker - that it be in fact possible for him to act so as to bring the future situation about). Thus the Category 2 acts require (as a preparatory condition), and their corresponding verbs trigger a presupposition, that it must be logically possible for the addressee of the utterance (the object of the verb) to perform the action indicated in the utterance (in the complement to the illocutionary verb).³⁸

Fraser (1972), in his argument (pp. 13-15) that the sorts of conditions on the performance of illocutionary acts postulated by Searle (1970) can be categorically divided into success-conditions (of the sort we have been discussing throughout these last two chapters) and non-defectiveness conditions (which include sincerity and "non-obviousness" conditions of the sort we have been ignoring - see Chapter IV, Section 1), claims that the following preparatory condition on requesting (stated by Searle) is not a condition on successful requesting (but only a condition on successful and non-defective requesting):

- (22) The hearer is able to do the act and the speaker believes
that the hearer is able to do the act.

Fraser argues that

I can successfully request you to pick up a particular piece of machinery even though you are not able to and I know this in advance. Perhaps you intend to take this instrument with you on the night plane to California, and I want to convince you that it would be a mistake I think the preparatory conditions³⁹ reflect what the ordinary speaker of English would expect to be the case if a request is made to do some act, but these conditions do not seem to be part of the essence of requesting. (p. 15)

Thus he is denying the existence of what we have called the "addressee-control" condition on successful requesting. But note that in the situation he outlines, it is not "possible control" but "real control" which is lacking on the part of the addressee. I agree that there is no "real control" condition on successful requesting (except the condition that if the request is made of one person (the addressee) but the requested action is to be carried out by someone else (the subject of the sentence or clause which carries the propositional content of the request) - as in "Could Bill pick me up at 6:30?" - then the first person must have "real control" over the second person's performing the action - see below). What I am claiming is not that the first-person speaker of Fraser's example has not made a successful request, but rather that I cannot successfully request you to, say, leave New York at once if you are in Chicago; I cannot (as a matter of fact) request you to deliver a letter to Louis XIV and come back with an answer. Thus I claim that the logical possibility of the addressee's being able to perform the act (as opposed to his (real) ability to perform it) is a preparatory condition on successful requesting. As for the condition that the speaker (of the utterance which may have the force of a request) must believe that it is (logically) possible for the addressee

to perform the act, this is presumably entailed by the essential condition on requesting, which is "The speaker intends the utterance to count as an attempt to get the hearer to do the act" (Fraser (1972, p. 14), after Searle). If I realize that it is logically impossible for you to perform a certain act, then, since this makes it impossible for me to successfully request you to perform it (that is, any attempt to do so will be unsuccessful on account of a violated preparatory-condition), I know that any utterance I make to you (which fulfills the propositional content conditions on a request for you to perform the act) will not count as a request. Therefore I cannot intend such an utterance to count as a request (as "an attempt to get the hearer to do the act") any more than I can (in my opinion) "intend" to go to heaven when I die.

Leaving aside the distinction between "possible" and "real" control, note that the distinction between the "subject-control" of the verbs of Category 1 and the "object-control" of the verbs in Category 2 is reflected in the syntax. When subject-control verbs take infinitive complements, the subject of the embedded clause is deleted on the basis of identity with the subject of the upper clause:

(23) a. I promise to give him a dollar (=I promise that I will give him a dollar).

b. John swore to be true to Mary (=John swore that he would be true to Mary).

But the underlying subject of a to-clause embedded under an object-control verb is deleted on the basis of identity with the object of the upper

clause:

- (24) a. John urged Bill to leave (=John urged that Bill leave).
 b. I ask you to meet me at midnight (=I ask that you meet me at midnight).
 c. I move that he be given a medal (=I move that we (i.e. those officially attending the meeting, including the speaker) give him a medal).

Again, we can do no more than point out the facts: The statement of the syntactic transformation Equi-NP-Deletion should account for the subject-control/object-control distinction among illocutionary verbs;⁴⁰ perhaps both should be linked to the use of future indicative vs. subjunctive that-complements with subject-control and object-control verbs respectively.

As we said earlier, some verbs in Category 2 have non-control senses. The non-control readings of sentences containing these verbs have no control presuppositions; the complements are that+indicative in any tense (see footnote 37). Compare, for example:

- (25) a. I insist₁ {on your leaving
 that you leave
 b. I insist₂ that {Bill is sincere
 I didn't really mean it
 (26) a. I advise₁ {you to leave immediately
 ?that you (should) leave immediately
 b. John advised₂ us (of the fact) that Bill would stop
 at nothing.

Since the control and non-control senses of these verbs place different restrictions on their complements, we would expect the two sets of verbs to correspond to the potential illocutionary forces of two different kinds of sentences - thus, for example, "Be careful!" has the poten-

tial force corresponding to warn₁ (as well as those corresponding to beg, urge, etc.: These are the object-control verbs which require infinitive or subjunctive complements). But, e.g., "The sky is falling!" has the potential force corresponding to warn₂ (as well as those corresponding to assert, assure, and all the "sub-two" illocutionary verbs: These are the non-control verbs whose complements consist of that+indicative with no restrictions as to tense).⁴¹

Aside from the presupposition of object/addressee control, which runs through the entire class of verbs under discussion, there are some other conditions which divide it into subclasses. (I offer these merely as data, with no judgment as to whether each should be accounted for by (preparatory) success-conditions on illocutionary acts or by "conversational" or "non-defectiveness" conditions.) Given that the speaker has said something in an attempt to get the addressee to perform a certain action, it can be understood that the action is to be performed either for the addressee's own sake, or merely because the speaker wishes it to be performed. That is, suppose the speaker has said to the addressee "Do it" (to take a neutral case). Only if the context carries an implication of "Do it, for your own sake" is the utterance reportable as warning, urging, advising, or recommending, while the remaining imperative forces may report this utterance no matter for whose sake "it" is supposedly to be done. Another condition on some verbs of this category has to do with whether or not the speaker has some sort of authority over the addressee, to the point where the former "has the right", in some sense, to compel the latter to act.

The verbs which someone may use to report an utterance of "Do it" only if he believes that the speaker has the right to tell the addressee to do whatever it refers to include order, command, demand, and insist. Apparently a speaker is likely to preface an imperative with please just in case he does not believe that such a condition holds with respect to himself and the addressee. Conversely, there seems to be a condition on suggest, propose and beg requiring that the speaker does not have ~~the~~ right to compel the addressee to act; when a General tells a Private to do something, his utterance should not be reported as a suggestion or a proposal. The remaining verbs in the imperative class are neutral in this regard: They may be used to report an imperative whether or not the speaker has this right to compel the addressee to perform the act. This leaves ask, request and tell as the only verbs which may be used to report any imperative for which the control condition holds.

There are a few other sorts of presuppositional (preparatory) conditions on verbs (acts) in Category 2. For example, advise triggers a presupposition to the effect that the speaker (i.e. the subject of advise) is some sort of authority on the subject about which he is speaking - or at least he knows more about it than the Addressee (the direct object of advise). More formally, we can state that the complement to advise must denote an Event or Action, and advise triggers the presupposition that the Speaker knows more about the possible consequences of the Action than the Addressee. Probably recommend has this same presuppositional condition.

At this point I will say a few words about an interesting subclass of the Category 2 forces, namely propose, move and vote (and their synonyms). Move and vote (and second, as well) are usually ceremonial performatives, which have special meaning in the context of an assembly conducted under the rules of Parliamentary Procedure. When the Rules of Order are strictly observed, only sentences having the explicit (performative) form of, say, motions count as having the illocutionary force of motions. However at an informal meeting, motions and votes may be expressed inexplicitly as imperatives, most often first-person-plural imperatives, e.g. "Let's call a strike" for "I move that we call a strike," or "Give him the money" for "I vote for giving him the money." The addressee-control condition applies to these imperatives, but with the added twist that "the Addressee" is, in these cases, not a single individual but a group of people, in fact a group of which the Speaker is a member. The control condition stipulates here that it is logically possible for the group to carry out the Action indicated in the imperative or in the complement of the performative.

Finally, I venture a comment about the illocutionary forces of a few restricted sorts of sentences and utterances containing modals. The class of potential forces of imperative sentences is the same as the class of potential forces of sentences beginning "NP should . . ." or "NP must . . .", with the modals being given a non-predictive interpretation, and where NP does not refer to the speaker. Usually these sen-

tences take the form "You should . . ." or "You must . . .", where you refers to the Addressee, but they may have third-person subjects just in case the condition holds that the Addressee has real control over whether or not the subject of the modal sentence performs the action predicated of him. Thus "John should be more careful" can be reported as a warning₁ or as advice₁ if it is in fact possible for the addressee to perform an action which will result in John's being more careful. This is the same "real control" condition as on promising, except that in the case of advice or warning₁ it is the addressee who must have control, while for promising it is the speaker.⁴²

If the control condition does not hold, this sentence would only be reportable as an assertion or giving of opinion. It may be claimed that sentences beginning with "You should" do not have the potential forces of commands or insistences, since this often polite locution is inappropriate in a situation where the Speaker has the right to compel the Addressee to act. However, whether or not this presupposition holds is independent of whether the "you should" form or the imperative form is used. For example, "You should salute when a General walks by" might well be a command. Thus I conjecture that sentences of the form

"{You} {should} . . ."
He must

have the same set of potential illocutionary forces as imperative sentences, and the preparatory conditions on whether or not an utterance of one of these sentences has the actual force F are the same whether the utterance is imperative or a surface modal: That is, matters of politeness and authority related to the interpretation of modals are probably best dealt with in terms of "pragmatics" or "conversation" (see Fraser (1972), Section 5).

4c. On the actual forces of utterance of past- or present-tense statements (Categories 3 and 4).

Some of the logical consequences triggered by verbs of Categories 3 and 4 (those which take Poss-ing complements referring to actions or events in the present or past) have already been discussed in Fillmore (1971a and b). These two classes together, along with numerous non-illocutionary verbs, were termed by him "verbs of judging." I have taken over many of his claims about the presuppositions and entailments of sentences containing illocutionary verbs of judging, re-stating them as preparatory conditions and essential conditions (respectively) on the successful performance of the corresponding acts. In this sub-section I comment in somewhat more detail upon some of these success-conditions based on Fillmore's truth-conditions. The most frequently quoted result of Fillmore (1971a) is the dictum that accuse and criticize are "complementary" in that a sentence whose main verb is accuse asserts that the referent of the subject says (or thinks) that the referent of the direct object is "responsible" for the situation referred to in the complement and presupposes that the situation is "BAD," or "blameworthy", while sentences containing criticize assert that the referent of the subject says that the Situation is "BAD" and presuppose that the referent of the direct object is responsible for it. However, I think that a (real) control presupposition - to the effect that the object of accuse in fact could have been responsible for the situation - is triggered by accuse, distinct from (and in addition to) the entailment that the subject of accuse expresses a pro-

position attributing that responsibility to the object. To see this, notice that when we accuse someone of doing something which he did not actually do, we are making a "false" or "unjust" accusation - but when we accuse him of being responsible for a situation which it was in principle impossible for him to have been responsible for, our speech act is (if performative) unsuccessful, or (if non-performative) not an accusation at all. For example,

(27) ?I accuse you of being whipped by Captain Bligh
is unsuccessful as an accusation (that is, an utterance of it would under most circumstances be unsuccessful) because, although the "situation" - the addressee's having been whipped - is "bad," the addressee had no control over its having come about.

(28) You were whipped by Captain Bligh
has the potential force of an accusation, as does

(29) You were examined by a quack,
but (28) would not (at least, not in the context of the original story) be judged to have the actual force of an accusation, since the control condition is not met. In Fillmore (1971b) it is suggested that accuse triggers a presupposition that the Situation referred to is an "activity" but it seems to me that any definition of "activity" which includes (29) and excludes (28) must ultimately be based on the notion of "control."

Fillmore has a minimal-contrast analysis of criticize and praise as follows: Both trigger a presupposition that the "defendant" (the

object of the verb) is "RESPONSIBLE" for the situation expressed in the complement; the difference between them is that (reportive) sentences with criticize as a main verb "mean" (i.e. assert) that the "judge" (the subject of criticize) verbally expressed a judgment that the situation was "BAD;" while analogous sentences with praise mean that the "judge" said that the situation was "GOOD."⁴³ The point of the abstract "GOOD" and "BAD" predicates is that naturally it is not necessary for someone literally to say that a particular situation is "good" or "bad" in order for it to be true that he praised or criticized respectively. Calling a situation "nice" or "fine" or "wonderful" may count as praise; calling it "lousy" or "awful" may count as criticism. But there is a problem with Fillmore's formulation in that, in terms of conditions on the performance of illocutionary acts, the distinction between utterances which perform the act of praising and utterances which perform the act of criticizing (note that the propositional content conditions are the same for each) does not depend on what was uttered - on what property was attributed to the situation in the utterance - but on whether that predication expressed a positive or a negative value judgment, respectively, on the part of the speaker. This point can be illustrated by sentences which fulfill all the propositional content conditions on both praising and criticizing but which cannot be interpreted as uniquely expressing a claim that a particular situation is either "GOOD" or "BAD":

- (30) a. John is an unusual person
b. Bill is a consummate liar
c. Gould gave a really wild interpretation of Bach.

That is, utterances of these sentences can be intended either as praise or as criticism, depending on whether the value judgment is construed as positive or negative. Thus while Fillmore writes of the sentence "Harry criticized Mary for writing the editorial" that

a speaker who utters [this sentence] presupposes that Harry regarded Mary as the writer of the editorial and asserts that Harry claimed the editorial-writing activity or its result as being "bad" (1971b),

I would say that this formulation of the assertion of this sentence is too strong, for the statement thereby expressed could be true if Harry said to Mary "What an incredible thing you did, writing that editorial" - that is, it would be true just in case Harry's utterance expressed a negative value judgment (and Mary did in fact write the editorial). In Fillmore's terms, I claim that this sentence (1) presupposes that Mary wrote the editorial, (2) presupposes that Harry believed the editorial-writing activity (or its result) to be "bad," (3) asserts (entails) that Harry believes (1), and (4) asserts that Harry verbally expressed a value judgment on Mary's editorial-writing activity. The analysis of "Harry praised Mary for writing the editorial" would be the same except, of course, that "good" would be substituted for "bad" in (2). These analyses have the advantage of associating "good" and "bad" with subjective judgments made by individuals rather than with the lexical items used to express such judgments, since any given predication of an attribute to a situation could be intended - or understood - in principle, at least, as an expression of either a positive or a negative value judgment. Criticizing and praising, like most illo-

cutionary acts, are not merely a matter of what we say, but also of what we intend and of what we believe and (in the end) of what is true.

Footnotes to Chapter V.

1. In saying that the "utterance" of a sentence must meet the success-conditions on an act, we are implying that conditions specifying such things as the intention of the speaker to perform a certain act or the beliefs or attitudes of the speaker or addressee with respect to an action or situation referred to in the utterance are to be thought of as features of the utterance itself. It would perhaps be more natural to say that while the propositional content conditions on the successful performance of an act are conditions which must hold of a sentence if it is to be possible to use that sentence to perform that act in any situation, the essential and preparatory conditions on the success of an act are conditions which must hold of the situation in which a given sentence (which fulfills the propositional content conditions) is uttered. But since in order to speak of "an utterance" at all we must assume the existence of a speaker, time-place coordinates, and, in most cases, an addressee of that utterance (of course, not all utterances have an addressee necessarily, but only those which do can be, say, promises or threats or warnings) - that is, since an utterance defines a situation, it is correct to speak of conditions on the situation in which a sentence is uttered as conditions which either hold or do not hold of the utterance itself.
2. The distinction between "performative verb" of English and "non-performative illocutionary verb" is quite clear-cut - in the sense that everyone "gets," say, "I accuse you" as a performative, but "I criticize you" is obviously ungrammatical unless it is understood as a habitual or historical statement. But I know of no generalizations about the respective members of these two discrete subsets of the class of illocutionary verbs which might lead us to suppose that the distribution is not random. The only facts I have observed about this distribution are that all illocutionary verbs corresponding to "ceremonial" acts are performative, and that while many of the non-performative illocutionary verbs belong to Fillmore's (1971a) category of "verbs of judging" (e.g. criticize, scold, excuse (in the non-ceremonial sense), praise), neither of these two classes includes the other.
3. A representative list of illocutionary verbs appears in Appendix 4, in the form of a table specifying the restrictions on the complements to these verbs and some of the presuppositions triggered by them. We will be using the "facts" (i.e. they are "facts" for me; others may disagree on some points) catalogued in Appendix 4 as the basis for the various generalizations I will be making about different sub-classes of illocutionary verbs or acts.

4. Thus, for example, an enlightened native speaker would judge "I will tie you up and tickle your feet" to be a potential promise as well as a potential threat; even though his empirical beliefs might be the basis for a judgment that an utterance of this sentence would rarely if ever succeed in making a promise, he must concede that the sentence could be uttered as a successful promise (since someone could possibly want to be the object of the specified action), regardless of the native speaker's (idiosyncratic) belief that the future event referred to in the sentence is not "desirable."
5. And along with the spirit, if not exactly the letter, of Searle (1970).
6. For example, take the situation we used as a paradigm in Chapter IV, Section 3b, in which John says to Mary "I will be there." We said there that one of the conditions on John's utterance counting as a promise -- on a person's being able to report that "John promised Mary that he would be there" -- is that Mary must prefer John to be there. Now whether or not this condition is met is, at least for everyone except Mary, purely a matter of empirical fact. One person might believe that Mary does prefer John to "be there," while another might judge her not to prefer John to be there. Thus the latter person would not report John's utterance as a promise, while the former might (that is, he would consider it reportable as a promise if, in addition, all the other conditions on successful promising were met by the utterance). Our two native speakers thus disagree on whether or not John's utterance had the (actual) force of a promise, and this disagreement is based on a disparity between them with respect to their beliefs about the state of the world, (of which Mary's preferences form a part), not on a difference in the way in which they make judgments as to the actual forces of utterances, since (in a homogeneous speech community) both would consider Mary's preferring John to be there to be a necessary condition on his having promised successfully.
7. Fraser, who disagrees with my judgment on the ambiguity of reportive sentences and who therefore considers the conditions on the performance of an act by an utterance to be identical to those on the act's successful performance (i.e. he considers them to include the preparatory conditions on the act whether the utterance is performative or non-performative), makes the parallel stipulation that "We mean by this [i.e. "the forces of an utterance"] the acts the speaker actually [successfully] performed by uttering the sentence on that particular occasion" (p. 2). Thus my description of the notion "(actual) forces of an utterance" is in conformance with Fraser's framework and differs from his version of this notion only

to the extent that our judgments on the readings of and truth-conditions on reportive sentences differ. However, in order to avoid confusion, I should mention the additional distinction made by Fraser between $F_m(S)$, "those illocutionary acts [i.e. their corresponding forces] whose conditions are met by virtue of the sentence-meaning," and $F_p(S)$, "those illocutionary acts whose conditions are met by virtue of the sentence-meaning and general principles of conversation" (Fraser (1972), p. 3). The "p" of F_p suggests "pragmatic considerations" (p. 27). (For example, Fraser suggests that the sentence "Should we let Richard Nixon serve another four years in the White House?" has the force of a question by virtue of its meaning, but in certain contexts, the same sentence can have the force of "an expression of opinion, equivalent to the force of the sentence 'We should not permit Richard Nixon to serve another four years in the White House,'" by virtue of the sentence meaning and the principles of conversation (p. 26).) Note that F_m and F_p are both sets of forces of sentences: both correspond to what we have called "potential" forces. However, in speaking of the "potential" forces of a sentence, we have been referring to (and will, in what follows, continue to refer to) what Fraser would call F_m ; that is, we will not be concerned with $F_p(S)$ in this paper, although we recognize its existence as an entity to be accounted for by conversational rules such as those of Grice (1967). (Fraser shows in Section 4 of his paper how Grice's "conversational implicature" can be used to determine F_p for a sentence.) We caution the reader not to confuse my notion of "(actual) forces of an utterance of a sentence" with Fraser's notion of " F_p of a sentence." (It would be easy to do so because, while I do not consider the problem of determining $F_p(S)$, Fraser does give attention to this but not to the problem of determining the forces of utterances, which I deal with in Section 4 of this chapter.) Fraser, as is evident from our quotation of his p. 2, does recognize that the forces of an utterance are something which must be accounted for separately from (although not independently of) both $F_m(S)$ and $F_p(S)$. But he does not say whether there is a parallel distinction between $F_m(U(S))$ and $F_p(U(S))$.

- 8 . This is a recapitulation, in a new terminology, of Section 3 of Chapter I.
9. I assume that when the input sentence is an explicit performative, only that schema corresponding to the essential condition applies.
10. The distinction between illocutionary and non-illocutionary verbs (the latter including, in particular, verbs corresponding to perlocutionary forces and manner-of-speaking verbs), and that between their respective nominalizations, will have to be made explicit in the grammar to explain such co-occurrence restrictions as these:
 - (i) Is that a threat?
 - an accusation?
 - a criticism of me?
 - *a mumble?
 - *a persuasion?

- (ii) Are you insisting?
urging me?
*convincing me?
*shouting?

(Probably contrasts like (i) and (ii) cannot by themselves define the distinction, though. For one thing, verbs and nominalizations referring to illocutionary acts which can only be performed explicitly are odd in these contexts:

- (iii) *?Was that (referring to an utterance) a christening?
?Are you pronouncing us husband and wife?

For another,

- (iv) ?Is that an assertion?
?a comment?
*?a thanking?
?an expression of gratitude?

are all inappropriate for one reason or another, although all ask if an illocutionary act has been performed.)

11. Personal communication.

12. I have been assuming that potential forces are assigned to readings of sentences rather than to the sentences themselves. Thus I say that the sentence "I promise" has the potential force of a promise on its performative reading, and numerous other potential forces on its habitual or historical readings respectively (e.g., assertion, claim, comment, etc.), rather than saying merely that this sentence has the potential forces of promising, asserting, claiming, etc. Fraser (1972) chooses the second alternative: He says (p. 21) that the F_m (see footnote 6) of "I promise to be home on time" is {promise; report} ("report" standing for the various assertive forces, some of which I have just listed). He argues for this notation as follows (p. 19):

"The F_m for a particular sentence will reflect all semantic interpretations of that sentence. This is quite in line with the fact that speakers can predict the use of a sentence without knowing which of the possible sentence-meanings will be intended by the speaker on a particular occasion of utterance."

I am not convinced either way; I am proceeding under the assumption that how this issue is resolved (if it is not merely notational) will not affect the empirical claims and the means of accounting for them which I am presenting here and in Sections 3 and 4 of this chapter. In particular, classical ambiguities such as those cre-

ated by the presence of "old men and women" or "flying planes," etc. do not result in the different readings of sentences containing these phrases being assigned different sets of potential forces. "Look out for old men and women" can be a warning, for example, on either reading. In fact, the only obvious case in which separate readings of a sentence must necessarily be assigned different sets of potential forces is the case of explicitly performative sentences, which have a performative reading with the potential force corresponding to their respective main verbs and habitual and historical readings with such potential forces as asserting, reporting, claiming, etc.

13. i.e., in course lectures, talks and private discussions.
14. This "ambiguity" is assumed to be of the same order as that of "Flying planes can be dangerous" or "This bill is large," whereas in my framework (or Searle and Fraser's), the classical sort of ambiguity is distinguished from "force-multiplicity," so that a sentence may be unambiguous but still force-multiplicitous. For Ross, however, there is no such thing as "force-multiplicity" per se, only ambiguity (in other words, he proposes to account for the empirically observable fact of force-multiplicity in sentences by analyzing these sentences as ambiguous).
15. This counter-counter-objection is due to Fraser himself (personal communication).
16. To the extent that parliamentary procedure is relaxed in a given situation, so that a proposal not expressed in the strictly correct manner (e.g. a proposal made without the use of the verbal formula "I move that . . .") does count as a motion, "moving" is not a ceremonial act, and, contrary to Fraser's above-quoted claim, an utterance of "He should be allowed to leave" can be a "move."
17. This would also answer our second objection as well as prevent this class of verbs from injuring the generalization that the highest verb of every underlying sentence is a performative.
18. Note that the positing of these verbal pro-forms THREATEN, CRITICIZE, etc. is quite different from, say, my proposal of a universal pro-form "believe" in Chapter III. For one thing, "believe" was not supposed to be an abstract element which could appear in underlying representations; rather it appears in statements of the logical consequences of certain sentences. Also, "believe" was designed to capture an aspect of the meaning of certain verbs (in particular, "epistemic" verbs) which all of them have in common; but THREATEN, for example, corresponds in meaning only to one lexical verb, threaten, while the lexical verbs promise and accuse, for instance, have no corresponding abstract pro-forms.

19. The ungrammaticality of (11)c is irrelevant here, since we could as well argue from the fact that it would be a consequence of the performative theory that "John criticized Mary for being a hypocrite" (which is of course grammatical) should be equivalent to one reading of "John said to Mary, 'You are a hypocrite'". (Although it is possible to criticize someone by calling him a hypocrite, for example, in uttering (12)c below, this would not be described as criticizing that person for being a hypocrite.")
20. A syntactic argument for the presence of modals in the deep structure of such verbs can be derived from a fact about the placement of not (Ross, personal communication). Consider:
- (i) He is not disturbed.
 - (ii) He $\left\{ \begin{array}{l} \text{will} \\ \text{should} \\ \text{etc.} \end{array} \right\}$ not be disturbed.
 - (iii) I insist that he not be disturbed.
 - (iv) *I insist that he be not disturbed.

When there is no modal, as in (i), not follows be; otherwise (as in (ii)) not precedes be. Thus the fact that not precedes be in (iii) may be the result of a modal having been deleted (following the placement of not).

21. Additional arguments are to be found in Fraser (1969) and Anderson (1968).
22. This is consistent with my contention that illocutionary verbs trigger entailments and presuppositions of sentences in which they occur, and that these entailment- and presupposition-schemata function as the essential and preparatory conditions (respectively) on the performance of the corresponding act. We mention Fraser's suggestion (that the illocutionary verbs themselves determine the essential- and preparatory-conditions on their corresponding acts) here instead of waiting until the next section, in which examples of these sorts of conditions are discussed, only because we want to make it clear that his generalization (that conditions on illocutionary acts are determined by the "syntactic and semantic analysis" of the corresponding verb) applied to all three kinds of success-conditions on illocutionary acts. But in this section we restrict ourselves to examining only how this claim accounts for propositional content conditions.
23. To the extent that this generalization is correct, it need not be limited to performative verbs and explicitly performable illocutionary acts. For example, although threaten is not a performative verb, there is the same correspondence between the properties of propositions which may be embedded under threaten (in non-performatives) and the propositional content conditions on the act of threatening as there are in the case of promise and promising: threaten takes complements in the future indicative -

- (i) John threatened that he {would starve/*had starved} my hamster --

and futurity is a propositional content condition on threatening. "I will hit you" is a potential threat; "I have hit you" and "I am hitting you" are not. (In fact, the propositional content conditions on threatening are the same as those on promising.)

However, although Fraser's claim that the propositional content conditions on an illocutionary act can be derived from the syntactic requirements on complements to their respective corresponding verbs captures a large proportion of the cases, there are at least the three following exceptions to this generalization (these do not invalidate the claim, but they indicate that it must be weakened somewhat):

First, as Fraser himself noticed, not all illocutionary verbs allow complements. (These include veto, christen and many other "ceremonial" illocutionary verbs.) Therefore the propositional content conditions on the acts corresponding to these verbs are not accounted for.

Second, as we pointed out in the previous section, sentences which have the potential forces of praising, criticizing, apologizing, etc. ordinarily consist of a clause (or phrase) specifying the existence of (in Fillmore's terms) a "situation" (for which someone is assumed to be "RESPONSIBLE") under an emotive predicate expressing a value judgment with respect to that situation, e.g.

- (ii) I admire your having stood up for your rights

The way you spoke to your great-aunt was shocking

I'm sorry for having been so stupid.

On the other hand, complements to the corresponding verbs - in general, to all factive illocutionary verbs - consist of the clause specifying a situation or action without the upper "value-judgment" clause:

- (iii) John praised Mary for having stood up for her rights

John criticized Mary for having spoken to her great-aunt in a certain manner

John apologized for having been so stupid.

Third, the identity requirements which exist between the subject

of a clause embedded under certain illocutionary verbs and either the subject or the object of the illocutionary verb itself do not have their counterparts in propositional content conditions on the corresponding act. For example, the subject of a clause embedded under insist or recommend must be identical to the addressee of the utterance referred to by the main verb:

(iv) I insist that {^{you}*John} pay up at once

I recommend that {^{you}*John} be here at noon.

Similarly, when illocutionary verbs take infinitive complements, the unexpressed subject of such a complement is in many cases taken to be co-referential either with the subject or the object of the upper clause (depending on who has control):

(v) I promise to go: I go.

I urge you to go: You go

*I promise for {^{you}John} to go (but: I promise that John
will go)

*I urge you for John to go.

But these co-reference restrictions are not reflected in the propositional content conditions associated with the corresponding acts. In particular,

"John has to pay up at once" can be "insisting"

"John should be here at noon" can be a recommendation

"John must go" can be "urging."

24. One of the perpetrators of the error referred to by the Kiparskys is of course Rosenbaum (1967), who presents just such a lexical (i.e. unpredictable) marking system to indicate which complementizers are permitted by which predicates (pp. 5-7) and who views the selection of complementizers as a transformational process, independent of meaning, rather than as an aspect of base-structure generation. On the other hand, Rosenbaum does venture to suggest that it might be possible to make a stronger claim about the relationship between the meaning of predicates and the complement-types they allow than the one made by his own analysis (which makes the weakest possible claim: That the relationship is random and predicates must be lexically marked):

"Quite often a particular modal interpretation is implicit in a complement construction containing either the "for-to" or "POSS-ing" complementizer . . . The modal "will" is, in some sense at least, an implicit aspect of the interpretation of the complement sentence in (26b) ["I expect John to go"] . . . A certain difficulty may await the apparatus formulated to account for the gross modal exclusion with the "for-to" and "POSS-ing" complementizers. Since all syntactic and lexical material necessary for the semantic interpretation of a sentence is included in the underlying structure, we are forced to believe that the modal interpretation of (26b) . . . results from either the actual existence of the modal in the underlying structure of the predicate complement sentence, or, more likely, from some special, idiosyncratic feature of particular verbs for which modal interpretation is necessary. There is, as yet, little evidence on which to base an evaluation of the two alternatives. But, in the event that the first alternative is favored, it will, of course, be necessary to revise the complementizer placement transformation significantly" (pp. 31-32).

25. And, I confess, beyond the range of my investigation.
26. The presence of modals greatly complicates the problem of specifying the potential forces of a sentence. See Fraser (1972), Section 5, where this sort of complexity is dealt with in greater detail for a few cases.
27. This latter stipulation must be made if, say, the generalization that sentences beginning "I will" are potential promises is to hold, since clearly "I will probably be there" or "I will obviously be there" cannot be used to promise. (But the reason why these sentences are not potential promises seems to be that the adverbs probably and obviously suggest that in saying that he will be there, the speaker does not mean to undertake the obligation to be there. On the other hand, it seems to me that "I will surely be there" can be used to make a promise, and undertake an obligation, so no clear generalizations can be made about adverbs in promises. In any case, the possibility hereby indicated of a relationship between the presence or absence of a certain type of lexical item within a sentence and the essential condition on the success of an utterance is a complication I want to avoid in this very preliminary sketch.

28. This is consistent with my observation in footnote 39, Chapter IV, that the propositional content of a promise need not predicate an action, only a situation. Thus I claim that there are no propositional content conditions (associated with promising) on the future sentence as to its predicating an action, but rather only conditions on utterances, that in order for them to successfully promise, the speaker must intend to place himself under the obligation to act in a certain way (i.e. so as to bring about the promised situation) and it must be possible for him to perform such an action with such an effect (the "control condition").
29. The sense of the verb blame corresponding to the illocutionary force of "blaming" which belongs in this category is to be taken as approximately equivalent to a "performative version" of Fillmore's (1971a) "BLAME₂." The blame in Category 4 below is meant to be a performative version of Fillmore's "BLAME₃" (p. 285).
30. "Assert, etc." represents the entire class of illocutionary verbs (including claim, state, comment, aver, report) which usually take that-clauses as complements and whose corresponding forces are potential forces of any declarative sentence (see the list of Category 6 verbs at the end of Appendix 4).
31. That is, this generalization includes imperatives if we assume (as is generally done; see, e.g., Katz and Postal) that they contain the modal will in their deep structures. Note also that in addition to imperatives, sentences of the form "NP should do X" or "NP must do X" also (given additional stipulations too complex to go into here; see Fraser (1972, Section 5) on "mitigation markers") can have the potential forces of urging, advising, etc. (see also Section 4b of this chapter). The relationship between the shall-modal and futurity is, to a certain degree, obvious; the future implications of the must-modal, less so.
32. An interesting twist in this regard is that verbs of the assert-class (Category 6), whose corresponding forces are potential forces of any declarative sentence in any tense, all take the that-complementizer, while none take the to-complementizer. A few of them allow a Poss-ing complementizer, in which case a preposition is usually required - this sub-class includes tell (about), inform (of), complain (about), testify (to), comment (on), admit (to), and deny. But when these verbs occur with a gerundive complementizer, the event or situation referred to in the complement is always understood to refer to either the past or the present, never to the future. For example, we have

(1) John informed us of Bill's having been cruel to animals.

(ii) John admitted to being impolite.

but no gerundive equivalent of

(iii) John admitted that he would quit his job as soon as possible.

(iv) John denied that he would be leaving for France next week.

Another interesting fact about this class is that most of these verbs are non-factive with a that-complementizer but factive with a gerundive complementizer (except for inform and admit, which are probably factive in either case, and deny, which is never factive).

33. Except for admit and concede, but the generalization we are presently making does not apply to these two predicates.
34. This might be related to the fact that these verbs (except for concede) are followed by prepositions when they have complements: forgive someone for having done something, admit to being an idiot, congratulate someone on his having been graduated.
35. On the other hand, for example, performing the act of promising by uttering "I will be there" is the same as promising to be there; performing the act of accusing by saying "You did it" is the same as accusing someone of doing it.
36. Actually, promise₂ can express a denial as well as an assurance or assertion, as in "I promise you that I didn't do it."
37. Here is a table of some common illocutionary verbs which are ambiguous between a sense which is more or less equivalent to (and has similar syntactic features as) verbs of the assert-class, some of which have desirability/undesirability conditions in one or both senses:

Verb	<u>assert-sense</u>		other sense	
	complements	presuppo- sitions	complements	presuppo- sitions
promise	<u>that</u> +any tense	desirability affectedness	<u>that</u> +future <u>to</u>	desirability affectedness subject con- trol
guarantee	"	desirability affectedness	<u>that</u> +future <u>?to</u> <u>?ing</u>	desirability affectedness subject con- trol
insist	"	none	<u>that</u> +sub- junctive <u>on</u> +Poss- <u>ing</u>	object/addressee control
swear	"	none	<u>that</u> +future <u>to</u>	subject con- trol
advise	"	affectedness	<u>that</u> +NP should <u>to</u>	object/ addressee control
warn	"	undesirability affectedness	<u>that</u> +NP should <u>to</u>	object/ addressee control
suggest	"	none	<u>that</u> +subjunc- tive Poss- <u>ing</u>	object/ addressee control

The non-illocutionary verb persuade is also bifurcated in this manner- note the difference between

- (i) He persuaded₁ me { ^{to do it}
that I should do it
- and
- (ii) He persuaded₂ me that { ^{Bill was lying}
I had been wrong.

An illocutionary, but marginal example, is volunteer (in the sense of "volunteer information"). Thus:

- (iii) John volunteered₁ to go on the mission.
- (iv) John volunteered₂ (the information) that Bill was good at ping-pong.

38. This is consistent with my definition in Chapter I, Section 2b, of a "logically proper imperative sentence" as one such that the order or request it expresses is "fulfillable" by the individual to whom it is addressed - i.e. it is such that it is logically possible for the addressee to carry it out. See also footnote 14, Chapter I.
39. The plural reference to "the preparatory conditions" includes, in addition to the two conditions we stated in the text as (22), a condition that

"it is not obvious to both the speaker and the hearer that the hearer will not do the act in the normal course of events of his own accord" (Fraser, p. 14, paraphrasing Searle).

I agree that this is clearly not a success-condition to requesting.

40. Note that this distinction does not apply to all predicates which take to-complements referring to the future: Thus

I want [I go] \Rightarrow I want to go.

I want it [you go] \Rightarrow I want you to go.

I expect it [you go] \Rightarrow I expect you to go.

But:

I urge it [you go] \Rightarrow I urge you to go.

I urge it [I go] \Rightarrow $\left\{ \begin{array}{l} *I \text{ urge me to go} \\ *I \text{ urge myself to go} \\ *I \text{ urge to go.} \end{array} \right.$

I promise [I go] \Rightarrow I promise to go.

I promise [you go] \Rightarrow I promise that you will go
 \neq I promise you to go
 \neq I promise to go.

41. Since to perform warn₂ consists merely in uttering any statement which (roughly) is intended to notify the addressee that he is in danger (and which does have the effect of instilling fear or apprehension in the addressee), we would not expect there to be any restrictions on the subject of the indicative that-clause embedded under warn₂ (as there is in the case of warn₁, where if the subject of the embedded clause does not refer to the addressee of the warn₁, there must at least be a "real control" relation between the addressee of the utterance and the performance of the

action predicated of the subject of the embedded clause). However, I have discovered an odd co-occurrence fact about the subjects of that-clauses embedded under warn₂: In

(i) John warned₂ Bill that he would get into trouble,

the pronoun he can only refer to Bill or to a third person; it cannot refer to John. Thus (i) can be a report of John's having said to Bill "You will get into trouble" or (say) "Harry will get into trouble (assuming Bill would be "affected" adversely by Harry's getting into trouble)", but it is very unlikely to be taken as a report of John's having uttered "I will get into trouble." On the other hand,

(ii) John warned₂ Bill that he would be there,

has a preferred reading on which he is taken to refer to John (or to a third person); it is not likely to be taken as a report of an utterance by John to Bill of "You will be there."

42. However, the "possible control" condition associated with advising, warning, etc., which requires that it be "logically possible" for the individual of whom the future action is predicated to perform it, holds here as well. For example, in order for an utterance of "John should go to New York" to be advice, it is necessary that (1) it be logically possible for John to go to New York (for example, he can't already be there, and he can't be dead), and (2) it be in fact possible for the addressee of this utterance to perform an action which will result in John's going to New York.
43. Fillmore also distinguishes between these two verbs on the grounds that criticize, but not praise, triggers a presupposition that the "situation" is "ACTUAL" - essentially this amounts to a claim that criticize is factive and praise is non-factive. I would be inclined to say that praise as well as criticize is factive; at any rate, it is not factivity but "goodness"/"badness" conditions which are at issue here.

Appendix 1: A "performance" explanation for the anomaly of

- (1) *John was surprised at whether or not Bill won the election.
- (2) Either John was surprised that Bill won the election or John was surprised that Bill didn't win the election.
- (3) If Bill won the election, John was surprised that he won; if Bill didn't win the election, John was surprised that he didn't win.

My conjecture is that (2), or its equivalent, (3), the proposition which (1) would be used to express, is a very odd proposition for any individual to want to communicate. For if an individual knows the answer to the question of whether or not Bill won, he knows which of the disjunctions of (2) is true and he knows which of the premises of (3) is true. Now as Grice (1967, p. 10) points out, when someone asserts a mutually exclusive disjunction, one generally assumes that he does not know which of the disjuncts is true. (Grice's example was that it would be odd or insincere for someone to utter "My wife is either in Oxford or in London" if he knew which city his wife was in, although if the wife is in either place the proposition is, strictly speaking, true.) So it would be strange for someone to assert (2) while believing one disjunct to be true - especially since if he believes one disjunct, he must judge the other to have zero truth value.

Similarly, it would be odd for him to assert (3), since the form of the conditionals "if Bill won" and "if Bill didn't win" would imply that the speaker disbelieves neither premise. If he knows, for example, that Bill won, he will not utter an antecedent consisting of "If Bill didn't win" - rather he must express this idea with the counterfactual "if Bill hadn't won." Thus, given the truth of (2) and (3), an individual who knows whether or not Bill won would not utter either of these sentences (nor, of course, their ungrammatical paraphrase (1)), but instead he would assert either "John was surprised that Bill won" or "John was surprised that Bill didn't win," whichever is the case. The only exception might be a situation in which the speaker, for some reason, wants to keep the answer to the whether-question a secret from the addressee, and express John's surprise at the election result without divulging the result itself. But in such a situation there would be no point in the speaker's saying anything at all to the addressee since, as an utterance of (2) or (3) communicates no information about whether Bill won or whether John expected him to win, it communicates nothing at all.

On the other hand, it would be equally strange for someone who did not know whether or not Bill won the election to assert (2) or (3). For, assuming that the speaker is "sincere," he must believe the proposition expressed by (2) and (3) if he is to assert one of them, and how might he have come by this belief without also coming by the knowledge of (or at least an opinion as to) whether or not Bill won? This could

be the case only if he had heard the equivalent of (2) and (3) from another speaker, or if he had heard directly from John a first-person variant of (2) or (3) (or a paraphrase thereof). In the latter case, it would be odd if John were to make such an assertion, since, as we have observed, sentences containing indirect questions under factive emotives presuppose that the subject knows the answer to the indirect question; but if John knows whether Bill won, the argument of the last paragraph applies to him. And if we suppose that the speaker of (2)/(3) derived his belief of (2)/(3) from someone other than John, then either that individual knew whether or not Bill won, or, if he didn't, he must have ultimately derived his belief from someone who did know. In either case, the argument of the last paragraph again applies. Perhaps we could state a conversational postulate that the speaker of a sentence containing a question embedded under a factive emotive is expected to know (or at least to think he knows) the answer to the indirect question, even when the sentence has a third-person subject so that it does not formally entail this.

It may be objected that a similar argument would serve to rule out the possibility of anyone's uttering

(4) John (hasn't yet) found out whether or not 108 is prime

(=(55)a in Chapter II).

or

(5) John knows whether or not Bill won the election.

But in this case, although a speaker who himself knows whether Bill won would be unlikely to utter (5) (he would be more prone to assert "John knows that Bill won" or "John knows that Bill didn't win"), it would not at all be odd for someone to utter (5) without knowing the answer to the indirect question. The hypothetical speaker would, as in the surprise-case, have ultimately derived his belief of (5) from someone who did know the answer (possibly John himself) but who omitted or neglected to inform the speaker what the answer was. The difference between the emotive and epistemic cases has to do with the fact that "knowing" merely entails "having an opinion," but "being surprised" presupposes knowing. There is no means by which a person can derive a belief that John was or was not surprised that p or not-p without knowing whether p or not-p is true. On the other hand, a belief that John does or does not know whether p is derivable, for example, from a belief that John is in a position to know - e.g. the deduction "if John was present when the results were announced, then he probably knows whether or not Bill won" can certainly be made by someone who doesn't himself know whether Bill won.

It might also be objected that the arguments against any possible utterance of (1), as an expression of (2)/(3), could just as well be applied to the acceptable

(6) John was surprised at who won the election,
since someone who knew the answer to the indirect question in (6) would be more likely to incorporate this information into the proposition ex-

pressed by (6). And so he would, if there was only one winner, or at least very few, about whose victory one might be surprised or not surprised. But if there were, say, ten winners whose victory surprised John, a speaker who wanted to express that fact would be more likely to utter (6) than "John was surprised that Jones, Smith, Brown, ... won." That is, all wh-words except whether can serve as a sort of shorthand in "answer"-type indirect questions. Whether cannot serve as a shorthand since, of course, it is briefer to state ". . . that p" or ". . .that not-p" than to state ". . .whether or not p." Moreover, it is not always the case that a speaker who knows who won the election will state (say)

(7) John was surprised that Jones and Smith won
instead of (6), since, although both these propositions might be true,
(7) does not entail (6).

Appendix 2: The distribution of any, ever, etc. in embedded interrogative clauses.

As we tried to show in the text, the distribution of any, ever, etc. is to be explained in general terms for all kinds of clauses, not in terms of the syntactic or semantic features of indirect questions. However, the problem Ross has raised - by pointing out that any, ever, etc. are permissible in some indirect questions but not in others, leads to such curious data when we explore it further that I have included a discussion of it as a digression in the hope that someone may be inspired to make some sense of the situation.

An "Affective" is an element which can turn a some under its command to any (Klima (1964), p. 313; Langacker (1969), p. 175), and under whose command any, ever, etc. are in general grammatical. Some Affectives are Neg, Q, Imp(erative), and only:

- (1) a. *John has ever had any money.
b. John hasn't ever had any money.
c. Has John ever had any money?
d. Who has any money?
e. Only John has ever had any money.
f. *I told you anything I ever heard about him.
g. Tell me anything you ever heard about him.

Indirect questions under non-factive ("question") predicates allow any, ever, etc. in "positive" environments but not in "negative" ones (to simplify things, none of our examples in this Appendix are of sentences containing indirect questions which have an Affective element in the interrogative clause):

- (2) a. John wonders
b. *John doesn't wonder } why he ever bothered.
c. It's a mystery
d. *It's no mystery } how he ever managed to eat a single thing.
e. It's unclear
f. *It's not unclear } whether he did anything about it.

To explain (2)a, c, and e, we must assume either that this type of indirect question contains the "Q" marker of direct questions, or that the "question" predicates are themselves Affective. (Probably the latter, since these predicates are "Adversative" and therefore Affective - see (14)-(15) below.) But to explain (2)b, d, and f, we must assume that Neg (itself an Affective) somehow "cancels out" the Affective value of Q or the main verb. The other Affectives do not have this "canceling" effect:

- (3) a. Does John wonder why he ever bothered?
b. Ask him whether he ever did anything about it.
c. How he ever managed to eat a single thing is a mystery
only to John.

In fact, Neg loses its canceling effect when another Affective is present:

- (4) a. Doesn't John wonder why he ever bothered?
b. Don't ask him whether he ever did anything about it.

That is, indirect questions under question predicates allow any, ever, etc. (a) when the upper sentence contains no Affectives except possibly the main verb itself, or (b) when the upper sentence contains an Affective other than Neg (possibly in addition to Neg). Any, ever,

etc. are disallowed in this type of indirect question only when the only Affective in the main clause (aside from the question predicate) is Neg.

The situation with the epistemic factives and semi-factives is somewhat simpler. Indirect questions embedded under these predicates generally allow any, ever, etc. when and only when an Affective element is present - Neg or any other:

- (5) a. *John realized
b. John didn't realize } when he was supposed to do anything.
c. *John
d. Only John } understood why he was ever allowed to leave.
e. *John remembers where a single thing is.
f. Does John remember where a single thing is?

Thus the epistemic factive and semi-factive predicates are non-Affective and indirect questions under them must be assumed to lack the Q of indirect questions (or, if it is present, it must be considered non-Affective in these sentences). The only problem with this class (and the cause of the exceptions to the generalization preceding (5)) is the fact that some of the factive epistemic predicates are themselves Affective, being negative in nature:

- (6) a. John forgot why he had even started the project.
b. When he ever had a chance to buy anything is unknown
(this is Ross's original example, (62), in Chapter II).

These negative epistemic verbs behave like the non-factive (question) predicates with respect to any, ever, etc.: When they are merely

negated, with no other Affective element present (except themselves), the Neg cancels out the Affective "force" which the predicate would ordinarily exert on the lower clause, so that any, ever, etc. are not allowed in the embedded question; however, whenever an Affective other than Neg is also present, the "cancellation" does not take effect and any, ever, etc. are permitted. Compare (7)-(9) below with the examples of (2), (3) and (4) respectively:

(7) (Neg alone)

- | | | |
|------------------------|---|--|
| a. John forgot | } | why he had ever bothered. |
| b. *John didn't forget | | |
| c. It's unknown | } | whether he ever did anything about it. |
| d. *It's not unknown | | |

(8) (Affective other than Neg)

- a. Has John forgotten why he ever bothered?
- b. Whether his wife has ever been unfaithful is unknown
only to John.

(9) (Neg plus another Affective)

- a. Don't forget how to tie a single one of these knots.
- b. Isn't it unknown to John whether he ever won a prize?

Thus the distribution of any, ever, etc. supports our distinction among sentences containing indirect questions between those which entail that the subject (or indirect object) knows the answer and those which do not, since those sentences with "negative" epistemic factive and semi-factive main clauses (containing forget, unknown, etc.) are grouped

with the sentences having "positive" non-factive main clauses (wonder, be a mystery) (both of these allow any, ever, etc. in the embedded question only if they are unmodified by an extra Affective or if another Affective than Neg is present). And those upper sentences with "positive" epistemic factive and semi-factive predicates (know, remember) are grouped with those having "negative" non-factive predicates (not wonder, be no mystery) - both of these types of upper sentences allow any, ever, etc. just when an Affective, other than Neg alone is present.

(10) Summary of distribution of any, ever, etc. in indirect questions under epistemic predicates:

Main Clause	e.g.	No Affective in main clause*	Neg but no other Aff in main clause	Aff other than <u>Neg</u> in main clause, w. or w/o <u>Neg</u>
"positive" factive or semi-factive	<u>know</u> , <u>remember</u>		X	X
"negative" factive or semi-factive	<u>forget</u> , <u>be unknown</u>	X		X
"positive" non- factive	<u>wonder</u> , <u>be</u> <u>a mystery</u>	X		X
"negative" non- factive	<u>not wonder</u> , <u>be no mystery</u>		***	X

*except for the main verb itself, when it is Affective (e.g. forget)

**It is impossible to tell whether any, ever, etc. would be possible since this case is ruled out by the restriction against double negatives:

*John didn't never wonder . . . ,
and I can't think of any non-factive question predicates which are inherently negative as forget is.

The ti.-in with my bifurcation of the class of sentences containing indirect questions results from the fact that when no non-negative Affective is present, sentences with "positive" factive and semi-factive main clauses entail that the subject knows the answer to the indirect question; those sentences with "negative" epistemic factive and semi-factive main clauses, as well as those with "positive" non-factive main clauses, are incompatible with such a statement. However, the correlation between those upper sentences which disallow any, ever, etc. and those which have the "knowing the answer" entailment is thrown off by the fact that the non-negative Affective only (as well as the "Adversative" Affectives - see below) cause any, ever, etc. to be grammatical in these sentences without affecting the entailment.

The distribution of any, ever, etc. under the remaining class of predicates which take indirect questions, the factive emotives, is a complete mystery to me. The only clear fact is that, as the original example (repeated as (11)a below) showed, these predicates do not by themselves permit any, ever, etc. in their interrogative complements:

- (11) a. *When he ever had a chance to buy anything is fantastic.
b. *It's odd why he ever bothered to do a single thing.
c. *It's amusing where he hid any of those bodies.
d. *I regret how I brought up a single one of my kids.
e. *I'm {happy
 sorry} about who I gave any of my money to.

However, when factive emotives are negated, they sometimes allow any, ever, etc. - and sometimes they do not. I find (11)a and b clearly ungrammatical when negated, but the negations of (11)c, d and e are at least marginally all right (they sound better spoken than written, as is the case with many sentences containing indirect questions under emotives). (11)c-e are also acceptable if they are turned into yes-no questions, which (11)a-b are not. (And (11)c-e are good with only inserted before the I.) I have no explanation for this contrast, only two rather weak observations - first, that I can't think of any "good" examples of indirect questions containing any, ever, etc. embedded under be fantastic or be odd, the two predicates Ross used most often to demonstrate his points about the factive emotives. Second, for some reason (possibly related to the point just mentioned), examples with an overt subject or personal indirect object sound better when negated; this amounts to those examples in which the interrogative clause is an object complement, and the "logical subject," being the syntactic subject, must be present. I find the negation of (11)c slightly improved if "to me" or "to John" is added to the upper sentence. In general I also find first-person examples more natural.

These unexplained contrasts cannot be correlated with the much stronger contrast exhibited in the distribution of any, ever, etc., in declarative clauses embedded under factive emotives:

(12) a. John was (*not) surprised that anyone bothered to
show up.

b. Do you regret now that you ever tried to bake a souffle?

- c. It's odd that even a single one of his answers turned out to be correct.
- d. It's surprising that Mary found out when he ever had a chance to buy anything.
- e. I'm sorry
- f. *I'm not sorry
- g. *I'm glad
- } that I ever thought I could be of any help.

What is going on in (12) is that many of the factive emotives themselves belong to the subclass of Affectives which Klima called "Adversatives" (1964, p. 314). Adversative predicates can be distinguished from others by the "much less" test"

- (13) a. I'm sorry
- b. *I'm glad
- c. It's surprising
- d. *I'm proud
- e. *It's well-known
- } that he ever showed up at all, much less gave a speech.

(Of the main predicates in (12), be surprised, (surprising), regret, be odd, and be sorry are Adversative, be glad is not. The non-factive question predicates are also Adversative:

- (14) a. I wonder whether
- b. I wonder why
- c. It's a mystery when
- } he ever showed up at all, much less gave a speech.)

Since not reverses the Adversative feature of be sorry, be surprising, etc. - (13)a and c are ungrammatical if the main clause is negated - it also cancels out their Affective force (as in (12)a and f). But

other Affectives do not cancel out the effect of an Adversative on an embedded declarative clause (so that (12)b is grammatical). However, this information does not help us to explain the parallel cases of interrogative clauses embedded under factive emotives. For example, we cannot deal with the fact that be surprising allows any, ever, etc. in its declarative complements but not in its interrogative complements by marking the Adversative factive emotives [+Affective] when they take declarative complements and [-Affective] when they take interrogative complements. This is undesirable because these predicates are adversative even in the latter case -

- (15) It's surprising who won the first prize, much less the second.

Also, it would not explain the "canceling" effect of these factive emotives on not and other Affectives as in (11)a and b. Ross (1967) refers to ~~the~~ grammaticality of

- (16) That anybody ever left at all is odd
as "a particularly puzzling fact" (p. 257), in light of his Sentential Subject Constraint, which should rule out a feature change (in this case, from somebody to anybody and from "at some time" to "at any time" = "ever") in the subject clause, as it does in

- (17) *Why anybody ever left at all is odd.

Since no obvious explanation of the distribution of any, ever, etc. in interrogative clauses is at hand, I conclude this Appendix with the observation that the explanation of the contrast, originally noticed by Ross, between the allowing of any, ever, etc. in indirect questions

under unknown and the prohibition of these elements in indirect questions under fantastic, cannot be adequately formulated until the distribution of any, ever, etc. in many other types of clauses is carefully examined.

Appendix 3: "Ceremonial" acts, utterances and sentences.

In speaking of performative utterances and the acts they perform we may make a rough distinction between "ceremonial" and "non-ceremonial" acts. For example, christening, sentencing, vetoing, declaring war, and bequeathing are among the ceremonial acts which may be performed by performative utterances, while promising, accusing, begging, advising and claiming are non-ceremonial acts. In this appendix we discuss numerous differences between ceremonial and non-ceremonial acts or utterances. Most of the generalizations we will be making are fairly sketchy, though, and there are borderline cases such as betting and consenting, so that "ceremonial" as we are using it is not a well-defined term. The primary distinction between the two classes is that in order for a performative utterance which purports to effect a ceremonial act to be valid, the speaker must be authorized by law or custom to perform such an act; when the act involves an addressee as well, the speaker and the addressees must be in a certain relation to each other. Thus while anyone may make a promise (to anyone else), only a judge can pass sentence, and in addition he can only sentence someone who has been convicted of a crime in the court over which he is presiding. For example, the sentence "I sentence you to 30 days in jail" does not successfully perform the act of sentencing unless the speaker is authorized to sentence the addressee. Such relations between individuals are legally or traditionally specified, and therefore culturally variable. We may speculate that non-ceremonial performatives are universal in that it would be surprising to find a language which did not have an equivalent of "I promise" or "I warn you", while ceremonial performatives are culturally

dependant in that law or custom must recognize that a given utterance constitutes a given action in order for that utterance to exist as a performative in the language of the individuals concerned. Thus we would not expect to be able to translate "I pronounce you man and wife" into the language of a culture which does not require the interference of a third party in order for a marriage to take place. Conversely, in our own culture we would not recognize an utterance of "I divorce you" by a husband or wife as a performance of the act of "divorcing", although Austin informs us (p. 27) that the equivalent of this expression spoken in a Moslem country does effect a legally recognized divorce (if it is spoken by the husband).

Our distinction between ceremonial and non-ceremonial performatives is a reflection of the same data as the distinction made by Strawson (1964) between illocutionary acts which are "essentially conventional" and those which are not. Strawson's characterization of "essentially conventional" acts rests in part on the observation that

such acts could have no existence outside the rule - or convention-governed practices and procedures of which they essentially form parts. (p. 457)

For example, consider the act of "pleading" (guilty or not guilty). If we suppose that court procedure stipulates that a plea of "not guilty" is to be recorded only if the defendant answers "I plead not guilty" when asked by the judge "How do you plead?", then the act of pleading "has no existence outside" the conventional procedure of replying to the judge's question by uttering an explicit performative whose main verb is plead.

This means that a reply of, say, "I am innocent", which is not in conformity with this conventional procedure, does not "count" as a plea of "not guilty". On the other hand, an act which is not "essentially conventional", while there might be a conventional procedure for its performance, can also be performed in some other manner (see Strawson (1964), pp. 444-445). For example, the "conventional" way to accuse someone (to his face) of doing X is to say to him "I accuse you of doing X". But the act of accusing may just as well be performed without the use of the explicit formula "I accuse you" - we may instead utter, for example, "It was you who did X". I prefer to use the term "ceremonial" to describe acts which can only be performed "conventionally", since this avoids the issue of whether or not acts which are not "essentially conventional" are also, in a (perhaps different) sense, conventional.¹

The fact that by their nature, ceremonial acts can only be performed in accordance with certain conventional procedures is presumably related to the fact that most ceremonial illocutionary acts can be performed only by explicitly performative utterances,² while most non-ceremonial illocutionary acts may be successfully executed either by an explicitly performative or by a non-performative utterance. This in turn may have something to do with the fact that the performative sentences which can be uttered to perform ceremonial illocutionary acts are generally simplex sentences without complement clauses - as opposed to those performatives which can be used to perform non-ceremonial acts. In other words, of those verbs which may appear as the main verb of a performative sentence

(the "performative" verbs), those which occur in ceremonial performatives - like christen or appoint or veto - are usually not complement-taking verbs, while those which occur in non-ceremonials, like promise or accuse or request, do require complements (at least in deep structure). Thus the reason why ceremonial illocutionary acts normally cannot be performed without the explicit (or at least understood - see footnote 3) use of a performative verb may have to do with the fact that a ceremonial performative sentence minus its main verb is (in general) not itself a sentence, while a non-ceremonial performative minus its main verb is still a full subject-predicate clause.

Another distinction between ceremonial and non-ceremonial performative sentences is that the adverb hereby, claimed by Ross, (1970a) p. 223), to be "characteristic of performative sentences", seems to be freely insertable before the verb in the former, but not the latter. Consider

(1) I hereby christen this ship the "Lusitania"

appoint you chairman

move that we open the meeting

?assure you that time heals all wounds

?advise you to shut up

?admit that I stole the cupcakes.

Still another is the relative freedom with which we can negate the non-ceremonial performative (although the product of this negation is, in general, not performative even when it is acceptable). Consider the following:

- (2) a. I don't accuse you of taking the money.
b. *I don't christen this ship the "Anastasia".
c. I don't insist that you leave.
d. *I don't sentence you to 20 years in jail.
e. I don't claim to know the answer.
f. *I don't nominate John Smith.
g. I don't consent to your marriage with my daughter.

Why there should be such a contrast is not clear: The oddity of (2)b, d, and f is not so much a matter of their making no sense as of the unlikelihood of there ever being a situation in which anything of interest might be communicated by uttering them. Thus, for example, expressions of the form "I sentence you to . . ." are spoken only in a highly specialized situation, usually with some suspense in the air. In such a situation, where a judge is about to sentence someone, he is not likely to fool around for a while handing out one or more non-sentences before (or after) he does the actual sentencing. Similarly, if a person is not going to second a motion, he generally keeps his mouth shut. Not so with, say, promising or accusing. A person can say "I don't promise you" if he wants to promise or if he perceives that the addressee expects him to promise, but he can't do so -usually, "I don't promise to do X" means "I intend to do X but I'm not sure I can". Or he can say "I don't accuse you" in order to reassure someone. (see also footnote 51 of Chapter IV).

The fact that ceremonial performatives cannot be negated is probably causally related to the fact that they, unlike non-ceremonials, cannot

serve as answers to yes-no questions. Thus along with (2), we have

- (3) a. Do you accuse me of taking the money?
- b. * Do you christen this ship the "Anastasia"?
- c. Do you insist that I leave?
- d. *Do you sentence me to 20 years in jail?
- e. Do you claim to know the answer?
- f. *Do you nominate John Smith?
- g. Do you consent to my marriage with your daughter?

The funny thing about (3) b, d and f is presumably that only one of their respective possible answers is non-deviant.

We said that in order for a ceremonial performative utterance to successfully perform the corresponding act, the speaker must be "authorized" to do what he says therein that he is doing. In many cases the conditions on the successful performance of a given ceremonial act can apparently be reduced to this one condition. For example, there are many conditions which have to be satisfied in order for a successful act of christening (a child) to be performed, aside from the necessity that a certain sort of conventional formula be uttered: The speaker of this formula must be invested (by the state or the religious community, etc.) with the right to christen people in general, he must have been appointed to do this particular christening, and the name he christens the child with had better be the name which was intended to be given to the child. But it seems to me that all these conditions are accounted for if we stipulate that an utterance of

- (4) I christen this child "John"

successfully performs the act of christening only if it is the case that the speaker of (4) is (or has been) "authorized" to christen this child "John". Similarly, Austin suggests that the act of "appointing" requires a number of pre-conditions - in particular, an utterance of "I appoint you" is "infelicitous" (in a sense which overlaps with "unsuccessful") "when you have already been appointed, or when someone else has been appointed, or when I am not entitled to appoint, or when you are a horse" (p. 34). But here again it seems to follow from the truth of "I am authorized to appoint you" that you have not already been appointed, etc., so that any condition except the one which requires that I be authorized is superfluous. It is conceivable that "authorized" in this sense is a "universal", or abstract pro-verb (like the abstract predicate "believe" we postulated in Chapter III, Section 1c), so that this condition does not have to be stated individually for each type of ceremonial illocutionary act. (That is, "being authorized", as a condition on the performance of an act, would be interpreted by conventional rules to fit each situation, since being authorized, say, to christen babies might have different requirements and implications in different cultures.) If this is so, we can state schematically that in order for a ceremonial performative utterance, of (roughly) the form "I - verb - (you) - X", to successfully perform the corresponding act, it must be the case that the speaker is "authorized" to "verb" (the addressee) X: e.g. the speaker is "authorized" to christen a particular baby "John", to appoint a particular person chairman, to declare war on a particular country, etc. This formula can also

be regarded as a schema specifying an entailment which is triggered by ceremonial performative verbs (when they appear in statements, that is; performative sentences themselves, or their performative readings, have no entailments since they are never true or false). For example, "The minister christened the baby 'John'" is not true unless the referent of "the minister" was "authorized" (whatever that means in the context of the religious and/or legal procedure under which the christening was to take place) to christen that particular baby "John", regardless of whether he uttered "I christen you 'John'". I suspect that the success-conditions on ceremonial performative utterances, and likewise the truth-conditions on statements which report the successful performance of a ceremonial illocutionary act, are pretty thoroughly exhausted by this "authorization" schema.³ Strawson (1964) may have had something similar in mind when he specified that

Granted that uptake is secured, then any frustration of the wholly overt intention of the utterance (the intention to further the procedure in a certain way) must be attributable to a breach of rule or convention. [In the essentially conventional case, the speaker's utterance is not only intended to further, or affect the course of, the practice in question in a certain conventional way; in the absence of any breach of the conventional conditions for furthering the procedure in this way, it cannot fail to do so. (p. 458; italics his)

If the success of a ceremonial act (performed by the utterance of a performative sentence) does depend almost exclusively on whether or not the utterance is in conformity with whatever conventional procedures define the act, then - even if the notion of "authorization" does not completely capture this almost sufficient condition - there is not too much more we

can say about the problem of determining the success-conditions on the performance of ceremonial illocutionary acts. For this reason we will, throughout the last two chapters, concentrate our attention on non-ceremonial performative sentences, utterances, acts and verbs (except for occasional footnotes in which we will point out that generalizations made in the text about "performatives" are inaccurate or misleading when applied to ceremonial as well as to non-ceremonial performatives); the two kinds should be considered separately on account of the many contrasts between them which we have cited in this Appendix.

Footnotes to Appendix 3.

1. Austin evidently did regard all illocutionary acts as conventional (see Fraser (1972), pp. 7-8, where several quotations from Austin (1962) are amassed in illustration of this point). Strawson (1964) claims that this is a faulty generalization: "Some illocutionary acts are conventional; others are not" (p. 445). Fraser (1972), like me, ducks the issue by asserting that

"it seems clear that the run-of-the-mill illocutionary act (e.g. promising, warning, admitting, . . . etc.) are [is] not conventional in the same sense as those (relatively limited number of) special cases like marrying, christening, sentencing, redoubling, and so forth, which are essentially conventional" (p. 9, italics mine).

2. This generalization may be mitigated by the fact that it is sometimes possible to perform such ceremonial acts with an elliptical, not fully performative, utterance. For example, when the judge asks the defendant "How do you plead?", the latter may, as is usual in answering questions, abbreviate his answer to "Guilty" or "Not Guilty"; in this case, although the defendant did not answer in a strictly conventional way, did not utter an explicit performative of the form "I plead (not) guilty", he has still performed the ceremonial illocutionary act of "pleading". However, because of the "ceremonial" nature of this act, it would be possible (although perhaps not very useful) to write a law after the passage of which it would be the case that the act of "pleading" could only be performed by an utterance of either "I plead guilty" or "I plead not guilty". If this happened, an utterance merely of "Guilty" or "Not Guilty" in answer to the judge's questions would never count as a performance of the act of "pleading", even though the propositional (communicative) content of such an utterance is the same as that of the full performative. (N.B. when the judge asks "how do you plead?", he is not (or is only secondarily) requesting information of the defendant; his primary intention in asking the question is to request of the defendant that the latter now perform an act of "pleading".) On the other hand, it would be inconceivable that a law might be passed (or a tribal custom established, etc.) regulating just what kinds of non-performative utterances, if any, the acts of (say) promising or suggesting could be performed by. Clearly, the fact that an utterance of "I will be there" may count as a promise under certain circumstances follows from the meaning of the word promise. It is otherwise with ceremonial acts - the conditions on a given utterance being a christening or a sentencing are derived only in part from the meanings of these words - the rest depends on "convention."

3. And although I have not really examined the evidence for or against this conjecture, I will still be using the expressions "authorized" and "authorization condition" to refer, in general, to the sorts of conditions on the successful performance of ceremonial acts which are not shared by non-ceremonial acts. These expressions have value as (informal) descriptive generic terms even if a whole set of "authorization conditions" must be specified for each ceremonial act.

Appendix 4: Some properties of illocutionary verbs

Verb	tense of comple- ment*	takes that + unde- ractive	takes that + sub- junctive	takes to	takes pass- ive	subject control	object/ addres- see control	desira- bility/ undesir- ability	affec- tiveness	active
<u>Category 1</u>										
promise ₁	F	✓		✓		✓		D	✓	
predict bet	F	✓								
swear ₁	F	✓		✓		✓				
guarantee ₁	F	✓		?/	?/	✓		D	✓	
threaten	F	✓		✓		✓		U	✓	
offer	F			✓		✓		D	✓	
volunteer	F			✓		✓				
agree ₁ consent ₁	F			✓		✓			✓	
<u>Category 2</u>										
warn ₁	F		**	✓			✓			
request ask	F		✓	✓			✓			
urge	F		✓	✓			✓			

*i.e. tense reference, explicit or understood: F=future, P=past or present, N=neutral.

**takes complements of the form "that +NP should (must)."

For the meaning of 1 and 2 subscripts, see footnote 37, Chapter V.

Verb	takes a comple- ment	takes that indica- tor	takes that indica- tor	takes to	takes pos- sive	suggest control	subject/ address- see control	desire- ability /willing- ness	affec- tiveness	function
<u>Category 2</u>										
(cont)										
advise	F		✓	✓			✓			
command order	F			✓			✓			
beg	F			✓			✓			
insist	F		✓		✓		✓			
recommend	F		✓		✓		✓			
demand	F		✓		✓		✓			
permit forbid	F			✓			✓			
agree ₂ consent ₂	F			✓			✓			
suggest	F						✓			
propose move	F		✓	✓			✓			
vote	F		✓	✓	✓		✓			
<u>Categories 3 & 4</u>										
apologize	P				✓	✓		U	✓	✓
forgive	P				✓		✓	U	✓	✓

Verb	tense or com- ment	takes that +indi- cative	takes that +subj- unctive	takes to	takes Poss- essive	subject control	object/ address- ee control	desir- ability /undesir- ability	affec- tiveness	factive
<u>Categories 3 & 4 cont.</u>										
congratu- late	P				✓		✓	D		✓
criticize	P				✓		✓	U		✓
scold	P				✓		✓	U	?	✓
excuse	P				✓		✓	U		✓
commend praise	P				✓		✓	D		✓
thank	P				✓		✓	D	✓	✓
blame	P				✓		✓	U		✓
concede	P	✓						U		✓
admit	P	✓			✓			U		✓
complain about	P				✓			U		✓
accuse	P				✓		✓	U		
credit	P				✓		✓	D		

Verb	tense is comple- ment	takes that +indica- tor	takes that +pres- position	takes E ₂	takes Pres subj	subject control	object/ states- subj control	describ- ability/ control	affec- tiveness	factive ₂
Category 6										
inform	N	✓			✓					✓
assure	N	✓			✓			D	✓	
deny	N	✓			✓					
testify	N	✓			✓					
warn ₂	N	✓						U	✓	
promise ₂ guarantee ₂	N	✓						D	✓	
swear ₂ insist ₂ advise ₂	N	✓								
assert comment declare maintain say tell state claim aver hold opine	N	✓								

N.B. Agree and consent in "I agree₁ (consent₁) to go" trigger the "subject control" presupposition, but in "I agree₂ (consent₂) to NP's going" they require object/addressee control.

Appendix 5: That section of the algorithm for determining the actual illocutionary forces of utterances which applies to utterances of future declarative sentences.

Input: S = "Bill will be there", along with a particular utterance of S.

The potential illocutionary forces of S are (among others)

promise, threat, warning₂, assurance, guarantee, offer, consenting, agreeing, volunteering, swearing, prediction, opining, assertion.

- Note:
1. The expression F(U) (or AF(U(S))) indicates the set of actual illocutionary forces of the input utterance of S.
 2. "Speaker" here always means the speaker of S.
 3. For this S, the Control condition is: The speaker "has (real) control over" Bill's being there.

The Affectedness condition is: The addressee would be "affected" by Bill's being there.

The Desirability (or Preference) condition is: The addressee would "prefer" Bill's being there to his not being there.

The analogous Undesirability condition is: The addressee would "prefer" Bill's not being there to his being there.

The algorithm asks the following questions, and proceeds according to the answers as follows:

Do the following hold?

I (promise)

- | | |
|--|--|
| 1. The control condition | if yes, go to 2.
if no, <u>promise</u> \notin F(U). |
| 2. The affectedness condition | if yes, go to 3.
if no, <u>promise</u> \notin F(U). |
| 3. The desirability condition | if yes, go to 4.
if no, <u>promise</u> \notin F(U). |
| 4. The essential condition on
promising | if yes, <u>promise</u> \in F(U).
if no, <u>promise</u> \notin F(U). |

II (threaten)

- | | |
|--|--|
| 1. The control condition | if yes, go to 2.
if no, <u>threaten</u> \notin F(U). |
| 2. The affectedness condition | if yes, go to 3.
if no, <u>threaten</u> \notin F(U). |
| 3. The undesirability condition | if yes, go to 4
if no, <u>threaten</u> \notin F(U). |
| 4. The essential condition on
threatening | if yes, <u>threaten</u> \in F(U).
if no, <u>threaten</u> \notin F(U). |

III (warn₂)

- | | |
|---|--|
| 1. The affectedness condition | if yes, go to 2
if no, <u>warn₂</u> \notin F(U). |
| 2. The undesirability condition | if yes, go to 3
if no, <u>warn₂</u> \notin F(U). |
| 3. The essential condition on
warning ₂ | if yes, <u>warn₂</u> \in F(U).
if no, <u>warn₂</u> \notin F(U). |

IV (assure)

1. The affectedness condition if yes, go to 2.
 if no, assure \notin F(U).
2. The desirability condition if yes, go to 3
 if no, assure \notin F(U).
3. The essential condition on if yes, assure \in F(U).
 if no, assure \notin F(U).

V (guarantee)

same preparatory success-conditions as promise

VI (offer)

same preparatory success-conditions as promise

VII (consent₁)

1. The control condition if yes, go to 2
 if no, consent₁ \notin F(U).
2. That the addressee has requested the speaker's consent to Bill's being there if yes, go to 3
 if no, consent₁ \notin F(U).
3. The essential condition on if yes, consent₁ \in F(U).
 if no, consent₁ \notin F(U).

VIII (agree₁)

same preparatory conditions as consent₁

IX (volunteer)

1. The control condition if yes, go to 2.
 if no, volunteer \notin F(U).

2. That the addressee has requested of the speaker that someone be there. if yes, go to 3.
if no, volunteer \notin F(U).
3. The essential condition on volunteering if yes, volunteer \in F(U).
if no, volunteer \notin F(U).

X (swear)

1. The control condition if yes, go to 2.
if no, swear \notin F(U).
2. The essential condition on swearing if yes, swear \in F(U).
if no, swear \notin F(U).

XI (predict)

no preparatory conditions

XII (opine)

no preparatory conditions

XIII (assert)

no preparatory conditions

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The author was born in 1947 in Brooklyn, New York, only child of Paul and Beatrice Harrison Schwartz. In 1951 the family moved to the Borough of Queens, where the author attended the public schools, graduating from Martin Van Buren High School in 1964.

At this time she entered Smith College in Northampton, Mass., where her major was mathematics and her minors were philosophy and religion. She was elected to Phi Beta Kappa and graduated summa cum laude in 1968.

In the fall of 1968 she entered the Linguistics Department at MIT, where she has remained these many years, supported by an NIH Traineeship. Her only employment has been in the form of summer and part-time jobs, in such varied occupations as clerk, waitress, computer programmer (at Bell Telephone Labs, Murray Hill, N.J.) and carilloner (at Smith College).

The author presently lives in Sudbury, Mass., with her husband, L. Scott Permesly, numerous black-and-white cats, and two ridiculously large dogs.