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SYNTACTIC AND SEMANTIC INVESTIGATIONS

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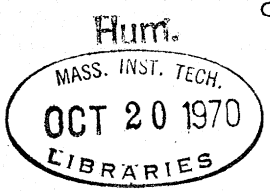
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Syntactic and Semantic Investigations

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The goal of this thesis is to provide evidence in support of two closely related hypotheses. One hypothesis is that a level of deep structure which is distinct from the level of semantic representation permits us to capture significant syntactic generalizations. The other is that failure to admit of such a level of deep structure will result in the loss of such generalizations.

The main topic of investigation in Chapter I is the imperative, with attention also being paid to sentences which share certain aspects of the imperative interpretation, and sentences which display some similarity to imperatives in their syntactic structure. We discuss the syntactic generalizations which must be captured, and we show how accepting the particular syntactic analysis of the data forces us to attribute a large range of phenomena to the semantic component. It is pointed out how these phenomena can be accounted for in a natural way by the semantics.

Chapters II and III are designed to be re-enactments of Chapter I, but carried out on a smaller scale and on different data. Chapter II is devoted to demonstrating that there are a number of generalizations to be captured in the area of yes-no and tag questions, and that the semantic description of such sentences is far less regular than the syntactic description. It is argued that any attempt to make the level of deep structure identical with the level of semantic representation will, in the case of yes-no questions, result in a significant loss of generalization.

Chapter III is involved with some newer material drawn from the area of emphasis, and it treats also some comparatively exotic cases of inversion. Because of the fact that most of the material in Chapter III is new, we do not consider alternative analyses to any great extent, but merely argue in favor of the hypothesis that a distinct deep structure level does exist.

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Introduction

0. Motivating the thesis

In the early days of transformational grammar, beginning with the publication of Chomsky's Syntactic Structures in 1957, it was believed that syntax could best be studied as a discipline which is quite independent of semantics. This notion was explicitly expressed in Chomsky (1957, pg. 106), and its influence can be seen in the work of many linguists up to the present day.

However, since the publication of Katz and Postal's An Integrated Theory of Linguistic Descriptions in 1964, there has been a steadily growing body of literature which purports to demonstrate that in fact one must take semantic considerations into account in the study of syntax¹. On one level this thesis is an attempt to show that, for a well-defined body of data, this belief is unfounded.

I have tried to keep the discussion in this thesis on a rather concrete level for the most part. The line of argument generally proceeds as follows: 1) describe the data, 2) motivate the syntactic description, 3) consider the interpretation of the sentences which constitute the data, 4) discuss the relationship between the syntactic description and the semantic description, 5) draw conclusions.

This plan of attack may raise some questions of a theoretical nature. One might ask, for example, what I

mean by "motivate a syntactic description". Certainly, it might be argued, since there is no a priori distinction between "syntax" and "semantics", how do we know which we are dealing with?

The answer to this question is that we may arrive at some notion of what syntax is, as opposed to semantics, by showing that there are generalizations about the form of sentences which can be captured independently of the meaning of the sentences. In a particular case, for example, we can show that the permitted positions of a certain morpheme in the sentence can be characterized by appealing solely to the purely formal characteristics of the sentence, while the meaning of the sentences which contain this morpheme differ, depending on the actual position of this morpheme.

The real question, really, is not how we can distinguish between 'syntax and semantics in general, but how we can determine in particular cases what characteristics of the data are to be considered as purely formal syntactic phenomena. In each case, therefore, we must consider what the syntactic generalizations are. In this thesis I will be dealing with a number of such cases. In each case I will try to show that there are syntactic generalizations, in the sense of the preceding paragraph. This activity may be considered as an effort to argue for what I will call hypothesis I: "there are syntactic generalizations which can be captured

without recourse to semantic considerations." It will be seen that this version of the hypothesis is little more than a statement of what many linguists have actually been doing since 1957. While ignoring considerations of "sameness of meaning" and "difference in meaning", they have been able to demonstrate that there exist formal properties of sentences that one can capture within the framework of generative grammar. Furthermore, this hypothesis has also been quite explicitly stated often in the literature. I am adopting this hypothesis here as simply an expression of the way in which I propose to go about dealing with the data.

Much of the discussion will also be concerned with arguing for hypothesis II; "representation of certain kinds of semantic information as components of underlying phrase markers in deep structure leads to the failure to capture syntactic generalizations." It is not possible to determine a priori what syntactic generalizations will be lost, nor is it possible to state a priori obvious that this hypothesis is true, so that some demonstration is required.

A stronger version of this hypothesis can be given in term of the notions "deep structure" and "semantic representation": "there exists a level of deep structure which is demonstrably distinct from the level of semantic representation." One goal of this thesis is that of demonstrating, by appealing to

syntactic generalizations in a number of cases, that there is a level of deep structure; a related goal is that of showing that the distinction between levels mentioned here is a viable and useful one.

Chapter I is devoted to a discussion of imperatives and related constructions. Chapter II deals with yes-no and tag questions. In each both of these chapters I will propose analyses which satisfy the weak version of the hypothesis. Then I will show how the adoption of certain kinds of semantic information in deep structure provide evidence in favor of the strong version of the hypothesis.

In Chapter III I deal with some further data whose analysis relates to those proposed in the preceding chapters in such a way as to add to their generality. This in turn adds to the plausibility of the strong version of the hypothesis, by decreasing the likelihood that the syntactic generalizations which we are arguing must be maintained are not spurious ones.

1. c.f. G. Lakoff (1969), (to appear), Green (1970), and much of the work of McCawley for expositions of various aspects of this view.

Chapter I

1. Imperatives

1.1. Introduction

In this Chapter we will be considering a number of constructions which are all related to the imperative in one way or another. There will be "simple" imperatives, which are the kind of sentences that one thinks of when the term "imperative" is used, sentences like "Give me the spittoon." There will be "question-imperatives", which look like questions but have the interpretation of imperatives. There will be "tagged" imperatives, which are simple imperatives with tags attached. And there will be a number of other constructions which either have some syntactic property in common with simple imperatives, or which have some semantic property in common with them. We will use simple imperatives as a point of departure since they are so familiar.

First we will look at some of the rules which we can motivate for generating the surface structure of a simple imperative. It should be emphasized, and it will be, that at first we will not be paying much attention to what the sentences which we are dealing with mean. If we propose a rule to relate sentences which differ in interpretation, then we will try to show that the syntactic generalization captured as a consequence is a significant one.

After we have established what the syntax must look like, we will take a look at what kinds of interpretive rules we will need in order to assign readings to the sentences under consideration. What we will also try to show at various points in the discussion is that any attempt to represent certain aspects of the interpretation in the deep structure will result in the serious loss of syntactic generalizations or some equally undesirable consequences. The main thrust of our argument will usually be, however, that rules of interpretation can be written, given the syntactic analyses which are motivated on formal grounds. At best an approach which represents aspects of semantic interpretation as components of deep structure is equivalent, as we will try to show. At worst, such an approach places the syntactic generalizations embodied in the data quite beyond reach.

1.2. The traditional notion of "imperative".

Jespersen uses the term "imperative" to refer to a particular "request" to indicate that wide range of interpretations which we commonly call "imperative" interpretations. For Jespersen, requests "may range from brutal commands through many intermediate steps (demands, injunctions, implorations, invitations). (1961,V,24.1.1) This dual terminology is evidence of Jespersen's awareness that the

"request" range of interpretations can be associated with syntactic constructions other than that of the imperative, while the imperative construction can be found in a non-request interpretation. Let us consider first sentences which have both the form and the meaning which are usually associated with the term "imperative".

1.3. You-deletion

1.3.1. Motivating the rule

The first step in most transformational accounts of the imperative is the motivation of a rule which deletes an underlying you-subject. It is first argued that generation of imperative structures by the base component would entail a complication of the grammar, taking into account that one must restrict the grammar from generating ungrammatical imperatives. For example, it can be shown that by assuming that all imperative sentences have as underlying subject the pronoun you, it is possible to explain why the object of the verb in the imperative cannot be you, and why the object must be yourself if it is reflexive.

First, we must establish the fact that in simple declarative sentences it is necessary to use the reflexive in case the subject and object of the sentence are identical. In particular this is true if the subject and the object are personal pronouns.

- (1a). *Bill_i kissed Bill_i.
(1b). *Bill_i kissed him_i.
(1c). Bill_i kissed Bill_j.
(2a). * { I } shaved { me }
 { We } { us }
 { He } { him_i }
(2b). { I } shaved { myself }
 { We } { ourselves }
 { He_i } { { him_j } }
 { himself }
(3a). *You_i kissed you_i.
(3b). You_i kissed yourself_i.
(4a). *Kiss you.²
(4b). Kiss yourself.

If we were to assume that underlying (4a) was the structure
S [you_i VP [kiss you_i]], then we would be able to account
for this ungrammaticality of (4a) in whatever way we would
account for the ungrammaticality of (3a). Otherwise we
would be at a loss to explain the impossibility of you
in (4a).

Postulating an underlying you also explains the
distribution of reflexives in imperative sentences by relating
imperatives to declaratives at the deep structure level.

might be hardpressed to argue that a particular case of ungrammaticality was due to a syntactic violation (the rule cannot apply) or to a semantic violation (the rule can apply but the reading of the sentence is ill-formed). However, there exist nonimperative instances of you-deletion, the rule is an optional one, and the subject of an imperative need not be you, consequently the rule cannot apply to all imperatives, and it must apply to some nonimperatives. I will introduce examples of such constructions as they bear on the question of how the rule is constrained, if it is at all.

A. First of all, you-deletion can only apply in unembedded sentences.⁵

(7a). I order that you pay up immediately.

(7b). *I order that pay up immediately.

(7c). This is a book that you should read by tomorrow.

(7d). *This is a book that read by tomorrow.

B. You-deletion deletes the surface subject of the imperative. In particular, a derived surface subject you arising from the application of the passive transformation may be deleted by you-deletion.

It is admittedly the case that most sentences with you as the direct object at first seem implausible in the guise of passive imperatives. For example,

- (8a). Be welcomed by the Prime Minister, the Foreign Minister, and seventeen chicken colonels.
- (8b). Be toasted to a crisp by the vicious Miami sun.
- (8c). Be hit in the shoulder by falling rocks.
- (8d). Be given a pat on the head and be told to leave quietly.
- (8e). Be hailed as the greatest pool player since Ivan Kholodmopivo.

The unacceptability of such sentences depends, however, on the difficulty of constructing a plausible context in which they may be uttered. If one admits the plausibility of a certain context these sentences become acceptable. Imagine, for example, the following monologue: "Win five thousand dollars! Get your name engraved in the sidewalk next to the Washington Monument! Be welcomed by the Prime Minister, the Foreign Minister, and seventeen chicken colonels! ..." Or perhaps "Take an unusual vacation this year! Drown in the luxuries of the mysterious Near East! Be toasted to a crisp by the vicious Sahara sun! ..." Or even "This winter, live dangerously! Climb Mount Everest! Survive terrifying avalanches! Be hit on the shoulder by falling rocks and chunks of ice! And all in your own home." It is interesting to note that while sentences like these are formally imperatives, they lack the interpretation usually associated with imperatives.

Clearly the acceptability of such "come-on" imperatives depends on the likelihood that anyone will actively put himself in a position so that such events could happen to him. This likelihood factor is not, however, something which could be found in the grammar of any language, depending as it does on variations in the tastes of individuals, and in the probability of the events in question happening at any given time. While Mr. A might find the idea of toasting to a crisp on the vicious Sahara sun quite unthinkable, Mr. B might find it rather intriguing. It would seem reasonable, therefore, to accept the grammaticality of passive imperatives in general.

Further support for this decision comes from sentences which are interpreted as warnings.

(9a). Don't be seen by the washerwoman.

(9b). Don't be found with a lot of gold in your money belt.

(9c). Don't be surprised by our knock at the door.

(9d). Don't be known as a big spender in Juarez.

Here the implication is that the passive subject is capable of preventing something from happening to him. There are many sentences for which the plausibility is very low that the passive subject could have anything to do with what happens to him.

- (10a). ?Don't be believed by Harry to have been claimed
by Sheldon to have been visited in the night by
Myra.
- (10b). ?Don't be allowed to keep loaded dice in your
room.
- (10c). ?Don't be arbitrarily evicted by an absentee
landlord.

Strictly speaking, we should not view sentences such as those in (10) as ungrammatical. It can be seen that their unacceptability derives from our assumptions concerning one's ability to willfully put oneself in the appropriate situation. This will be taken up again in 1.5.2.3.

Further evidence that it is the surface subject which may delete is forthcoming from the fact that pseudo-imperatives,⁶ which are interpreted as conditionals, allow you-deletion in passivized clauses.

- (11a). Be seen standing in a doorway at one a.m. and
the news really gets around town fast.
- (11b). Be allowed to keep loaded dice in your room and
all the other kids refuse to talk to you.
- (11c). Be arbitrarily evicted by an absentee landlord
and nobody has the slightest sympathy.

Such sentences indicate that where the interpretation is free of implausibility and improbability it is possible to delete

you quite freely. Other things being equal, we would like to treat the deletion of you in imperatives and in pseudo-imperatives as the same transformation, since this would constitute a true syntactic generalization. I will demonstrate in the course of my discussion of the interpretation of imperatives that the acceptability of pseudo-imperatives and the unacceptability of the corresponding imperatives is properly attributable to the semantic characteristics of the two constructions, and is not due to the existence of two rules of you-deletion with different conditions.

C. You cannot be deleted before a modal.

- (12a). *Can find me a newspaper.
- (12b). *Will eat the spinach.
- (12c). *Would open the box of spaghetti.
- (12d). *Must finish cutting your toenails.
- (12e). *May have a cup of cocoa.
- (12f). *Could whistle all the verses of Barbry Allen.

In pseudo-imperatives, too, a you-subject may not be deleted in this environment.

- (13a). * $\left\{ \begin{array}{l} \text{Can} \\ \text{Will} \end{array} \right\}$ find me a newspaper and I'll love you.
- (13b). * $\left\{ \begin{array}{l} \text{Would} \\ \text{Could} \end{array} \right\}$ open the box of spaghetti and we
prepare dinner.

etc.

Yet the conditionals which correspond to these pseudo-imperatives are acceptable.

(14a). If you $\left\{ \begin{array}{l} \text{can} \\ \text{will} \end{array} \right\}$ find me a newspaper I'll love you.

(14b). If you $\left\{ \begin{array}{l} \text{would} \\ \text{could} \end{array} \right\}$ open the box of spaghetti we
prepare dinner.

The fact that you-deletion cannot apply before modals regardless of the interpretation of the sentences argues for placing this restriction on the rule itself, and not attempting to account for the unacceptability of the sentences in (12) on semantic grounds. The assumption that the rule is the same in both cases, and the acceptability of the sentence in (14) leads to this conclusion. If, however, there are two rules of you-deletion, then the possibility arises that the conditions for the application of you-deletion in the imperative cases may differ from those in the pseudo-imperative cases. These examples unexplained given two separate rules of you-deletion.

I believe that it can be shown that sentences such as those in (15), below, while not formally imperatives in the traditional sense, are sufficiently close to imperatives in interpretation to eliminate the argument that the sentences of (12) may be excluded on semantic grounds. Either a modal,

or a paraphrase of a modal, may appear in sentences whose readings certainly fall within the range of readings which may be assigned to an imperative.

(15a). You will eat that spinach and like it, Jocko.

(15b). You had better be able to fix the ceiling when the rainy season comes.

(15c). You should read this book before Christmas.

(15d). You must have an ID card to get into the meeting.

(15e). You may not hit your sister over the head with a bag of marshmallows.

I would conclude from these examples that the restriction against deleting you before modals is a syntactic condition on the rule of you-deletion. Notice how this conclusion bears on hypothesis II. We have a transformation which can apply only to some subset of the set of sentences with an imperative interpretation. Hence this interpretation cannot be sufficient condition for the application of this rule, no matter how we decide to represent it. Furthermore, unless one were prepared to argue that pseudo-imperatives possessed the imperative interpretation, one would have to say that this interpretation is not a necessary condition for the deletion of you either. In other words, as our hypothesis would lead us to suspect, there is no direct relationship between you-deletion and the imperative interpretation.

D. The question of whether you-deletion may apply if the

you precedes the perfective have is a debatable one. It certainly is difficult to find many examples which seem as acceptable as simple imperatives with no auxiliary.

- (16a). ?Have read this pamphlet.
- (16b). ?Have shaved yourself.
- (16c). ?Have turned all the lights off.
- (16d). ?Have opened a new bank account.

Sentences such as these I find totally unacceptable. Notice that when a future temporal by-phrase is appended these sentences become somewhat more acceptably.

- (17a). Have read this pamphlet by

}	tomorrow.
	yesterday.
- (17b). Have shaved yourself by

}	this	evening.
	*last	
- (17c). Have turned all the lights off by dawn.
- (17d). Have opened a new bank account by next time.

Similarly, the corresponding pseudo-imperatives improve when a future by-phrase is appended.

- (18a). Have read this pamphlet (by tomorrow) and we'll be able to begin the revolution.
- (18b). Have shaved yourself (by this evening) and we can go to a nice restaurant.
- (18c). Have turned all the lights off (by dawn) and we'll be safe from marauders.

In both cases the perfective is interpreted as referring to the present unless the by-phrase is added. We will discuss

this fact at greater length later on, but now notice the difference between conditionals with and without the by-phrase.

(19a). If you have read this pamphlet (*by tomorrow),
then I'm a monkey's uncle.

(19b). If you have read this pamphlet $\left\{ \begin{array}{l} * \emptyset \\ \text{by tomorrow} \end{array} \right\}$ then

we'll be able to begin the revolution.

In any event, this suggests that the difficulty of interpretation in sentences like (16) is due to a semantic violation, and not to a condition on the syntactic rule of you-deletion.

E. A similar question concerns the deletion of you before the progressive be. Imperatives with progressive be seem to be much better than those with perfective have, as do the corresponding pseudo-imperatives. With both auxiliaries the specification of time adds significantly to the acceptability of the sentence.

(20a). Be shelling these peas $\left\{ \begin{array}{l} \text{when I return.} \\ ? \emptyset \end{array} \right\}$

(20b). Be reading the newspaper $\left\{ \begin{array}{l} \text{this evening.} \\ ? \emptyset \end{array} \right\}$

(20c). Be going to Chicago $\left\{ \begin{array}{l} \text{on the night of the 17th.} \\ ? \emptyset \end{array} \right\}$

(21a). Be shelling peas and everyone thinks you're a professional chef.

(21b). Be reading the newspaper at breakfast and your family will say you're anti-social.

(21c). Be going to Chicago on the night of the 17th
and no one will be able to claim that you were
in New York.

In order for one to give a semantic account for the have sentences and the be sentences one must be able to find some plausible arguments that the time which is associated with an imperative in the absence of time adverbials is in conflict with the time entailed by the use of perfect or progressive aspect in such a case. The use of time adverbials in these sentences indicates that most likely the explanation resides in the resolution of different "normal" values for time in imperatives on the one hand, and with aspect on the other. It is again interesting to note that the requirement that the same rule of you-deletion is in operation in both kinds of construction leads us to distinguish the unacceptable from the ungrammatical through the application of different kinds of principles: formal syntactic rules, and rules of interpretation which assign readings to sentences in a very flexible way. The forthcoming material will assume that the unacceptability of certain sentences with perfective or progressive aspects is due to semantic criteria, as has been suggested, and is not due to conditions on the rule of you-deletion.

1.3.3. The range of the rule.

Interestingly enough, there has never been, to my knowledge, any statement of you-deletion as a rule per se.

Previous treatments of imperative sentences included you-deletion as part of the rule for the formation of imperatives. For example, in Klima (1964, example (36b)) we find a derivation with (22a) and (22b) as the first two stages.

(22a). you [Ø]_{tense} will-not-be-ing-sit-there-then

(22b). [Ø]_{tense} not-be-ing-sit-there-then

Observe that the rule applying in Klima's derivation would be you-deletion, were it not for the will, which deletes simultaneously with you. Evidence for the presence of will in the underlying structure of imperatives is based on the observation that the modal in a tag-question is identical to the first part of the aux in the first part of the sentence. For example,

(23a). John is sick, $\left. \begin{array}{l} \text{isn't} \\ *hasn't \\ *won't \\ *can't \end{array} \right\}$ he.

is

(23b). John will be king, $\left. \begin{array}{l} \text{won't} \\ *isn't \\ *hasn't \\ *can't \\ \text{will} \end{array} \right\}$ he.

(23c). John can't sleep, $\left. \begin{array}{l} \text{can} \\ *will \\ *has \\ *is \end{array} \right\} \text{he.}$

From the fact that the modal in the tag of an imperative can be will, Katz and Postal (1964), among others, concluded that the modal will underlies every imperative sentence.

(24a). Get out of my sight, will you.

(24b). Have a heart, won't you.

(24c). ?Don't rub me the wrong way, will you.

(24d). "Don't talk so loud, won't you.

In the simplest case we would conclude that the same rule of tag formation applied both to imperatives and to declaratives, and if formal simplicity were our only consideration we would no doubt be led to agree that will was underlying in all imperatives.

Since will does not show up in the imperative part of (24), as distinguished from the tag part, it was also generally concluded that the rule which deleted you in imperatives also deleted the modal will. One consequence of adopting this analysis is that the same rule of you-deletion cannot then be used for pseudo-imperatives as well as imperatives. The argument for this is as follows: if will really was present in imperatives, then the deletion of you and will would have

to be functions of the same rule. This is because the environment in which will would delete is identical to an environment in which you would delete. If the conditions for you-deletion were identical in all cases, then we would expect the deletion of will in pseudo-imperatives, as well as in imperatives. Furthermore, if will did show up in a psuedo-imperative, we would expect tag formation to apply.

(25a). *Like her, won't you, and her friends will love you.

(25b). *Give him an inch, will you, and he'll take a mile.

(25c). *See Mary, won't you and she waves at you.

But

(25d). If you will only like her, her friends will love you.

(25e). If you will (=persist in) give him an inch, he'll take a mile.

This means that if will-deletion is part of the grammar, then there must be a rule of you-deletion for imperatives and a rule of you-deletion for pseudo-imperatives.

Probably the strongest argument against the notion that will is present in all imperatives and deletes after tag formation is the fact that other modals than will can appear in the same context. It is possible to replace will in the sentences

in (24) with can, could, or would, not to mention can't, couldn't, and wouldn't. It would be difficult, I think, to argue that underlying all imperatives are either will, can, would or could, because without the tags all imperatives would be indistinguishable, no matter which modal they started out with. But since there is a meaning difference associated with the modal in the tag, the rule which would delete these modals would be wiping out part of the meaning of the sentence. We will discuss this last aspect of tagged imperatives again in section 1.5.2.3. At this point we conclude that there is no obstacle to generalizing you-deletion, at least as far as the modals are concerned.

Recall that the structural conditions on the rule were that it could apply only to surface subjects, that it could not apply in the presence of modals, and that it could apply only in unembedded sentences. It is clear that non-subject you cannot delete by any you-deletion, and I will not demonstrate it here. It was shown that you-deletion behaves in the same way in imperatives and pseudo-imperatives with respect to modal auxiliaries (1.3.2C). However, it is not immediately clear that in pseudo-imperatives you is being deleted in an unembedded clause.

Because of the fact that a pseudo-imperative can be paraphrased by a conditional, it might be argued that pseudo-imperatives are actually derived from underlying

conditionals. If this were the case, then it would follow that the rule which derived pseudo-imperatives would either be a rule which deleted the you itself, or a rule which deleted only the if, and changed the then to and.

- (26) if you X then Y
 1 2 3 4 5 \Rightarrow \emptyset \emptyset 3 and 5
- (27) if S then S
 1 2 3 4 \Rightarrow \emptyset 2 and 4

We can see that (26) cannot be correct, for two reasons. First of all, deletion of you is optional in pseudo-imperatives.

(28) (you) sit down and he lights a fire under your chair.

Even granting that somehow the you is deleted only optionally, we are still faced with sentences which satisfy the structural condition of (26), but to which (26) cannot apply.

(29a). If you are Napoleon then I'm the Queen of Hearts.

(29b). $\left. \begin{array}{l} \text{Be} \\ \text{Are} \end{array} \right\}$ Napoleon and I'm the Queen of Hearts.⁷

We cannot rule out (27), though, since at this stage a plausible case could be made for the relatedness of (29a) and (30).

(30). You're Napoleon and I'm the Queen of Hearts.

If we grant that having only one rule of you-deletion is a real generalization, then the solution called for by (26) will immediately be eliminated, since it fails to capture this generalization. (27) remains as a serious alternative,

transformed if-clauses.

We have two choices regarding the derivation of pseudo-imperatives. Either we can have a rule like (27), which is not completely implausible, or we can generate pseudo-imperatives as underlying co-ordinate structures, and then have a rule of interpretation which optionally assigns the conditional reading to this structure. The second choice seems to me to be considerably more appealing, since we can specify by means of such an interpretive rule precisely what kind of conditional interpretation can be assigned to such a structure. For the transformational approach, on the other hand, we will have to specify in the rule that it cannot apply if this interpretation is not applicable, as in (32).

(32a). If you're so smart, how come you're not rich?

(32b). *Be so smart and how come you're not rich?

However, the means by which one would go about blocking a rule like (31d) I find obscure. The problem arises when we try to determine how we would represent the fact that the interpretation of (31a) is different from the interpretation of other if-then constructions.

One could conceive of attacking the problem from two directions. While this is not a particularly central issue, it might be instructive to consider in some detail the arguments against the kind of blocking presented here, since the example has a certain paradigmatic flavor.

The two methods of attack are the following: consider the blocking characteristic to be resident in the antecedent, or consider it to be resident in the consequent. In the first case, we may identify the source of the block as the if, and hypothesize that sentences which have the interpretation of (32a) have an underlying if' in deep structure which (a) distinguishes them from other if-then sentences, and (b) blocks the application of rule (27). In the second case, we might say that if the consequent is a question, then the interpretation of (32a) is required, and rule (27) blocks.

We can dismiss the second approach if we can show that a question can show up as a consequent in both if-then and pseudo-imperatives, but without the epistemic interpretation. That this is the case is indicated by sentences such as (33a) and (33b).

(33a). If you lie around the house all day, (then) what do you expect the neighbors to say?

(33b). Lie around the house all day and what do you expect the neighbors to say?

The conclusion to be drawn from this is simply that by itself the presence of a question in the consequent of an if-then construction does not necessarily mean that the sentence will have an epistemic interpretation, although of course it may.

The other course, namely positing an if' with this interpretation, is deficient in a different respect. If we

were to propose the existence of an if', when we would have to explain why the lexical item which we are calling if' is morphologically identical to the other if, and at the same time participates in the if-then construction, just as the other if does. This is a valid argument against such a proposal, I believe, because while there is some similarity between the interpretation of various if-then constructions, it is precisely this similarity which is obscured by introducing homophonous lexical items. There is good reason why a single lexical item may be a participant in distinct but related interpretations, but it is by no means clear why homophonous lexical items should possess similar meanings and similar syntactic characteristics.

In the next section we will argue for an analysis of imperatives which involve the morpheme SUBJ(unctive) in deep structure. Since we are arguing that pseudo-imperatives and imperatives are identical with respect to you-deletion, we will be saying that both have SUBJ in deep structure. Consequently, we could say for rule (26) that it only applies if the antecedent contains SUBJ. Sentence (31b) would then not be derived from (32a), but from an if-then construction whose antecedent contains SUBJ. Presumably an interpretive rule would mark

this sentence as semantically ill-formed, in the same way as it would mark (34).

(34). ?If you should be so smart, how come you're not rich?

A peculiar kind of problem arises when if we choose not to derive pseudo-imperatives from an underlying if-then. The pair some-any behaves in pseudo-imperatives just as it does in if-then constructions. Consequently, if the two constructions are different in deep structures, we are going to have to provide some means of accounting for this behavior in the pseudo-imperative, assuming that such a procedure exists for if-then conditionals.

Although I have no such analysis worked out for some-any, it is possible to abstract the some-any problem away from pseudo-imperatives. Examples such as those below suggest that the some-any phenomenon is a product of the conditional interpretation, and not the conditional syntax.

(35a). $\left\{ \begin{array}{l} \text{If you} \\ \emptyset \end{array} \right\}$ have any money $\left\{ \begin{array}{l} \emptyset \\ \text{and} \end{array} \right\}$ John will spend it.

(35b). $\left\{ \begin{array}{l} \text{?If you} \\ \emptyset \end{array} \right\}$ have some money $\left\{ \begin{array}{l} \emptyset \\ \text{and} \end{array} \right\}$ John will spend it.

I will assume for subsequent discussions of pseudo-imperatives that some and any appear in deep structures, that there is a rule of interpretation for some and any, and that there are rules of interpretation for if-then constructions and pseudo-imperatives such that the interpretations of pseudo-imperatives

coincide with the interpretations of certain conditionals. Ultimately, the acceptability of some and any in the context of either a conditional or a pseudo-imperative will be determined on the basis of the interpretation, which is identical, although the two constructions differ syntactically.

1.3.4. The statement of you-deletion

At this point we can state the rule of you-deletion completely. We refer to the morpheme SUBJ, which will be defined and discussed at length in the next section.

(36). You-deletion (optional):

you	SUBJ	X	
1	2	3	$\Rightarrow \emptyset 2 3$

Condition: only in unembedded S's.

1.3.5. Summary

In 1.3. we have discussed the rule of you-deletion, and we have tried to show what kind of analysis of imperatives and pseudo-imperatives would be required in order for us to capture the generalization that its application is independent of the interpretation of the sentences to which it applies. We pointed out the places in which there could be doubt concerning this hypothesis, which consist of various instances of unacceptability in imperatives under certain conditions.

In the next section, 1.4, I will take a look at the syntactic properties of imperatives, and give some arguments for a deep structure which contains SUBJ, and some transformations

which will derive all the possible simple imperative surface structures. Then, in 1.5, we will return to the problem of interpreting imperatives, and we will show how variations in the acceptability of simple imperatives can be accounted for in a natural way by appealing to aspects of the interpretation, rather than placing constraints on the derivation, or on the deep structure.

1.4. The syntactic rules for imperatives and related constructions.

1.4.1. The subjunctive

1.4.1.1. Motivation for the subjunctive

While the imperative has always been thought of as having a you subject, Thorne has observed⁹ that the subject of an imperative may also be a noun phrase other than you. The following examples illustrate this fact.

(37a). All new members please assemble at the rear of the hall.

(37b). Truckdrivers keep right on grades.

(37c). All demonstrators be here by seven tomorrow morning.

(37d). Housewives watch out for daily specials.

Sentences like those in (37) may have the force of imperatives: they can be orders, requests, suggestions, or warnings.

Sentence (37c) shows also that syntactically they are like imperatives in that the bare form of the verb is used (be)

rather than the inflected form (*are). The other examples of (37) are ambiguous, since in the plural the form of all verbs other than be is the same as the bare form of the verb.

It also turns out that a noun phrase in the singular may be the subject of an imperative if it is the head of a partitive, or if a partive interpretation can be assigned to it.

(38a). Someone pick up the phone, please, before it drives me mad.

(38b). Don't anyone be here before six o'clock.

(38c). The tallest one of you come over here and help me put this light bulb in its socket.

(38d). Whoever thinks he is the smarter (of you (two)) see if he can answer the question.

(38e). Nobody say anything.

(38f). One of you people run down to the store and find out if they have any firecrackers.

(38g). Each (of you) take a card and write the name of $\left. \begin{array}{l} \text{your} \\ \text{his} \end{array} \right\}$ favorite flavor of ice cream.

(39a). *Someone picks up the phone, please.

(39b). *Doesn't anyone be here before six o'clock, please.

(39c). *The tallest of you please comes over here.

(39d). *Whoever thinks he is the smartest please sees if he can answer this question.

(39e). *Nobody says anything, please.

(39f). *One of you people please runs down to the store.

(39g). ^Each of you takes a card, please.

What these examples suggest is that there is in English a configuration of the auxiliary which permits a sentence to be syntactically tenseless even when it is not embedded.

1.4.1.2. Introducing SUBJ.

In the literature of generative grammar most discussion of the auxiliary includes the postulation of the following base rule, which was first proposed by Chomsky (1955 and 1957).

(40). AUX \rightarrow TENSE(M) (have+en) (be+ing)

Chomsky (1965) proposed that this rule be expanded to include the complementizers for-to and poss-ing.

(41). AUX \rightarrow $\left. \begin{array}{l} \text{TENSE (M)} \\ \text{for-to} \\ \text{poss-ing} \end{array} \right\}$ (have+en) (be+ing)

Let us now consider changing this expansion of AUX by including the node SUBJ as a complementizer.

(42). AUX \rightarrow $\left. \begin{array}{l} \text{TENSE (M)} \\ \text{for-to} \\ \text{poss-ing} \\ \text{SUBJ} \end{array} \right\}$ (have+en) (be+ing)

Observe that SUBJ and TENSE(M) can never appear simultaneously in the same auxiliary. We assign the characteristic to SUBJ that it is not phonologically realized, so that V+SUBJ is treated by the morphology as V+ \emptyset . The simple imperatives

The use of the subjunctive expresses a notion which is called "irrealis" to distinguish between the form of a sentence and its reading, particularly in languages such as Spanish, where the subjunctive is formally marked on the verb, and where the interpretation of the subjunctive may be the same as the indicative in certain contexts.

In English, nevertheless, it appears that the correct generalization is that past tense is subject to irrealis and realis interpretations, depending on the context. Jenkins, in an unpublished paper, has noted some strikingly similar phenomena. Jenkins noted that the modal may is subject to a number of interpretations, depending on whether or not it is inverted, and on what the surface subject is.

(45a). You may see John. (permission, possibility)

(45b). May have a Coke? (permission, request for action)

(45c). May I {examine you.
be examined by you.}

(45d). May you {examine me.
be examined by me.}

There are several logically possible approaches to data like this. One would be to say that may is subject to a number of interpretations depending on its context. Another would be to introduce into deep structure a marker which would differentiate between the various interpretations at that level. By analogy with could, which can be either "past"

or "subjunctive", one could say that there is a "present" may and a "subjunctive" may. Mechanically there are a number of possible ways of representing this.

(46a). AUX → SUBJ TENSE (M) ...

(46b). AUX → $\left\{ \begin{array}{l} \text{SUBJ} \\ \text{TENSE} \end{array} \right\}$ (M) ...

(46c). AUX → $\left\{ \begin{array}{l} \text{TENSE} \\ + \text{past} \\ + \text{SUBJ} \end{array} \right\}$ (M) ...

Notice first of all that the outputs of (46a) and (46c) will be the same, although the former will have different consequences than the latter with respect to the formulation of transformations. If we claim that may has a subjunctive and a non-subjunctive realization then (46b) cannot be an adequate expansion of AUX, unless M includes may, might, can, could, and all the forms of all the modals. For if could were analyzed as can+past or can+SUBJ, then we would expect may+SUBJ to be might, and never may. Might, on the other hand, would always be may+SUBJ or may+past, which is semantically incorrect, and which furthermore fails to account for the fact that might has the same range of interpretation as may, with the difference that it is more polite. If M expands as all the forms of all the modals, however, then (46b) fails to account for the fact that semantically the past of may and might is may have and might have respectively.

The alternative of rewriting past as have in the environment of may and might loses the generalization that the original formulation of the AUX was designed to capture, namely that no matter what the interpretation, the order of elements in AUX is M-have-be.

The other two approaches at first blush appear to be somewhat more adequate, since they enable us to generate present and past subjunctives and indicatives. In this case, of course, we will have to subcategorize various complement-taking verbs with respect to the particular form of the AUX which appears in the complement. Since there are some complements which cannot have modals, this will also have to be mentioned for certain verbs. It turns out, however, that only those complements which cannot have modals also cannot have subject-verb agreement. For example,

(47a). I demand that you { *will be } here.
 *are
 *might be
 be

(47b). I demanded that you { *would be } here.
 *are
 *were
 *might be
 *will be
 be

There are several facts about a verb like demand which this approach would have to state independently. First of all, the complement cannot have a modal. Second, TENSE must be deleted from the complement before agreement applies. Third, whatever the tense of the matrix verb, the complement bears the same temporal interpretation relative to the time of the matrix. So, for example, if the demand in (47) was made today, then you should be here today, and if the demand was made last Sunday, then you should have been here last Sunday. The temporal relationship varies from verb to verb.

What this approach fails to account for is why there are no complements which can have modals but cannot have TENSE or why there are no complements which can have TENSE but cannot have a modal. The fact that the absence of TENSE and the absence of modals do not have independent distributions among the complements of various verbs shows quite conclusively, I think, that the type of approach entailed by (46b) and (46c) is inadequate.

1.4.1.3. Some further justification of SUBJ.

The base rule (40) enables us to capture some generalizations about surface structure. We would predict, for instance, that sentences with SUBJ would have certain characteristics which are found in other TENSE-less sentences. Observe that none of the TENSE-less AUX's show do-support.

(48). do-support:¹⁰

X TENSE Y

1 2 3 → 1 do 2 3

(49a). I { *order } that you { don't } take much of
 { believe } { do not }
an interest in this place.

(49b). *Harry ordered Mary to { do not } be such a
 { don't }
fanatic about dirt.

(49c). *I was surprised at Harry's doing not like the
performance.

(50a). I order that you (*do) take some pains to keep
this place clean.

(50b). Harry ordered Mary to (*d0) sing Dixie again.

(50c). *I was shocked at Julie's doing have such a
small appetite.

Also, not precedes rather than follows be and have used as
main verbs in the complement.

Since the rule of neg-placement, (51), specifies that
not follows the third term of the structural description, we
have to say that SUBJ can also be the third term when this
rule applies.

(54c). I { expect } you not to { be here too early.
order } { have two cups of coffee. }

(54d). I was surprised at your not { being very old,
having a cold. }

Next, agreement between subject and auxiliary is not manifested in the TENSE-less constructions. Observe the examples in (54) and (38)-(39), as well as the examples below in (55).

(55a). *I asked Harry to go to the store.

(55b). *It is imperative that he finds the answer soon.

(55c). *I request that Harry is allowed to go along on the trip.

Finally, none of the TENSE-less constructions appear with modals, since they are all excluded by TENSE(M).

(56a). *It is imperative that you

{ will leave on time.
can
must
would
could
might
. . . }

with the derivational processes which give us the various surface structures identified with this construction. Recall that I have argued that the deep structure of an imperative contains

(57). NP - SUBJ - VP

where NP may be you, or a third person non-pronominal noun phrase with certain characteristics, the identification of which I don't wish to get involved with here. For a discussion of precisely what NP's may appear in this environment see Downing (1970).

It has also been suggested that (57) can be embedded, in which case it is realized in sentences which take so-called subjunctive complements.

Consider the following paradigm of simple imperatives.

(58a). You give me that hammer.

(58b). Give me that hammer.

(58c). Do give me that hammer.

(58d). *You do give me that hammer.

(58e). *Do you give me that hammer.

(59a). *You not talk to strangers.

(59b). *Not talk to strangers.

(59c). { Do not } talk to strangers.
 { Don't }

(59d). *You { do not } talk to strangers.
 { don't }

(59e). { *Do not } you talk to strangers.
 { Don't }

(59f). *Do you not give me that hammer.

If you does not undergo subject-aux inversion it must delete if do is present, and it may delete otherwise. Let us make the plausible assumption that you-deletion applies to unstressed you only. Let us also assume the convention that if any element in the sentence receives primary stress, then the stress on anything else is reduced.

Most early studies of English syntax in the framework of generative grammar postulated the existence of a deep structure morpheme EMPH, which represented emphasis, and which behaved syntactically like not with the auxiliary.¹⁴

(60a). John did not find his raincoat.

(60b). John did find his raincoat.

(60c). John found his raincoat.

From subjunctive complements alone it is impossible to tell whether not follows or precedes SUBJ. Sentences like (59) show that inversion applies to SUBJ, but since this only occurs when not is present it is impossible to say whether do is inserted before EMPH and not in the context of SUBJ, or whether do-insertion applies when SUBJ is not followed by a verb. Let us assume, since there appears to be no reason not to do so, that the placement of EMPH and not in imperatives generalizes with the placement of these morphemes in non-imperatives like (60a) and (60b).

Do-insertion is a special rule which applies in unembedded sentences which contain SUBJ.

(61). Do-insertion:

X	SUBJ	{ EMPH not }	Y	
1	2	3	4	⇒ 1 2 <u>do</u> 3 4

Condition: only in unembedded S's.

Notice now that you will always delete if not does not contract in imperatives. This suggests that when it is uncontracted not should be treated as though it were stressed, so that you will be unstressed. Let us reflect this by extending the normal neg-contraction rule as follows:

(62). neg-contraction:¹⁵

X	[+v]	<u>not</u>	Y	
1	2	3	4	⇒ { (a) 1 2+n't ∅ 4 (b) 1 2 3+EMPH 4

Condition on b): applies only if X contains SUBJ.

More evidence will be presented in a later section that inversion can apply in the context of a fronted EMPH, that is, an EMPH which has not been placed in the AUX.

(63). Inversion (in imperatives):

#	EMPH	NP	SUBJ	Y	
1	2	3	4	5	⇒ 1 2 4 3 5

Finally, let us specify that you-deletion applies only before SUBJ.

(64). You-deletion (revised, optional):

X you SUBJ Y

1 2 3 4 1 \emptyset 3 4 , if 2 is unstressed

The rules are order as follows:

(65). 1. $\left\{ \begin{array}{l} \underline{\text{not}} \\ \text{EMPH} \end{array} \right\}$ -placement (optional for EMPH)

2. do-insertion

3. not-contraction

4. Inversion

5. you-deletion

Let us proceed with the derivation of the grammatical sentences in (58)-(59). If a rule is not mentioned in a derivation then it cannot apply.

(66a). you SUBJ VP /you-deletion

\emptyset SUBJ VP

"Give me the hammer"

(66b). EMPH you SUBJ VP /EMPH-placement does

not apply

EMPH you SUBJ VP /Inversion

EMPH SUBJ you VP

"You give me the hammer."

(66c). EMPH you SUBJ VP /EMPH-placement

you SUBJ EMPH VP /do-insertion

you SUBJ do EMPH VP /you-deletion

\emptyset SUBJ do EMPH VP

"Do give me the hammer."

(66d). not you SUBJ VP /not-placement
you SUBJ not VP /do-insertion
you SUBJ do not VP /not-contraction(a)
you SUBJ don't VP /you-deletion
∅ SUBJ don't VP

"Don't talk to strangers."

(66e). EMPH not you SUBJ VP /not-placement
EMPH you SUBJ not VP /do-insertion
EMPH you SUBJ do not VP /not-contraction(a)
EMPH you SUBJ don't VP /inversion
EMPH SUBJ don't you VP

"Don't you talk to strangers."

(66f). not you SUBJ VP /not-placement
you SUBJ not VP /do-insertion
you SUBJ do not VP /not-contraction(b)
you SUBJ do not* VP /you-deletion
∅ SUBJ do not* VP

"Do not talk to strangers."

Notice that it is not necessary to place the condition on you-deletion (64) that the you be unstressed. The presence of EMPH, which can be interpreted as emphasis, prevents the deletion of you by causing inversion to apply, destroying the environment of you-deletion. If EMPH is moved to the AUX, then do is inserted and you is deleted, indicating the shift of emphasis (66c). Observe that the difference in the placement of EMPH

is also manifested semantically. (66b) derives an emphatic order, while (66c) corresponds to an emphatic request.

(67a). "You give me the hammer (*please)", $\left. \begin{array}{l} \text{ordered} \\ * \text{requested} \end{array} \right\} \text{Tom.}$

(67b). "Do give me the hammer (please)", $\left. \begin{array}{l} * \text{ordered} \\ \text{requested} \end{array} \right\} \text{Tom.}$

1.5. Imperative readings

At this point let us turn our attention to the range of interpretations which Jespersen classifies as "requests": We will be considering simple imperatives and other constructions as well. First I will consider some of the interpretations which simple imperatives may have, and also I will try to establish the unmarked values of certain aspects of the interpretation of such sentences in the absence of explicit specification. Then I will go on to show that certain aspects of the interpretation of imperatives are not unique to them, but can be found in other constructions as well. I will also be considering some of the ways in which imperatives can be unacceptable, and I will relate such cases of unacceptability to inconsistencies in the semantic interpretation.

1.5.1. The interpretation of simple imperatives

1.5.1.1. Assumptions about the speaker's point of view

The imperative may be used in a number of social contexts. Each of these contexts consists of some type of relationship

In most of these cases the basic relationship between the speaker of the imperative and the hearer is that the former wants the latter to do something. Furthermore, it is fair to assume that the speaker believes that the hearer has willful control over performing the activity.

Given an imperative sentence as a linguistic object, without quoting it and appending some judgement to it concerning the precise relationship between the speaker and the hearer, what can we ascertain about the interpretation of such a sentence? Out of context, we know that the speaker wants the hearer to do something. We know that the speaker believes the hearer to be willfully capable of doing this. We also know that the speaker expects the hearer to do what is desired of him. Finally, we know that the speaker is using the utterance in order to get the hearer to perform the desired activity. Let us try to isolate these characteristics of imperatives by pointing out the strangeness of imperatives in which they are neutralized by other aspects of the sentence, usually giving rise to contradictions, or the assumption of implausible or unusual contexts.

1.5.1.1.1. The desires of the speaker.

(69a). "Please sit down, Mr. Jones", said Tom, but I can't imagine why, for Tom couldn't stand Jones's presence for fifteen seconds.

(69b). "Please sit down, Mr. Jones", said Tom, but I

can't imagine why, for Tom liked him and always asked him to stay for hours on end.

In (69a) the observer, who is commenting on the behavior of the speaker of the quoted string, is expressing surprise over this behavior. In sentence (69b), however, the surprise appears to us to be ill-founded, and at odds with the assumptions that we make about the desires of the speaker of the imperative. In (69a) the observer presumes that Tom's request that Jones sit down is consistent with Tom's desires and feelings about Jones, i.e. he wouldn't have asked him to sit if he didn't want him to. Since he dislikes Jones, it is surprising that he asked him, hence wanted him, to sit down. Perhaps, the observer will conjecture, Tom was going to do away with Jones by dropping some heavy object on him while he was sitting down. This type of conjecture relies on the supposition that Tom must really want Jones to sit down.

In (69b) the observer's remark appears to be inconsistent, since in this sentence the fact that Tom asked Jones to sit down certainly is in accord with his k i n d feelings towards Jones. The type of explanation which would make (69b) consistent would be one which involved something along the following lines: the observer is aware of a plot against Jones by Tom, which includes Jones sitting down. In other words, given the imperative sentence, we attempt to construct a context in which the speaker's desires, assumed by virtue of his

utterance of the sentence, are consistent with the meaning of the sentence.

It is also possible, of course, for the utterer of an imperative sentence to be insincere, as is illustrated in (70).

(70). "Please sit down, Mr. Jones", said Tom, although that was the last thing he wanted Jones to do.

Austin (1962) has noted an impressive number of conditions which must be satisfied in the real world in order for a sentence which involves some kind of speech act, for example an imperative, to be "felicitous". What we are discussing here involves, in fact, those things which we can assume about the world, assuming first that the utterance is a felicitous one. Since the purpose of this discussion is to remove certain possible objections against collapsing the various instances of a syntactic process into a single transformation, not all of Austin's material, while interesting, is equally relevant to the matter at hand. It is important to recognize that the distinction, which is brought out in Austin's work, between the conditions which must be met in order for a particular utterance to be felicitous, and whether or not these conditions are met for any given utterance, is in fact a distinction between what is properly part of grammar and what is not. Given any sentence, what is constant, and part of grammar, are the felicity conditions which are associated with it. What is variable, and hence not part of grammar, are the real-world facts according to which the felicity conditions

are or are not satisfied. If an imperative is felicitous because the speaker is sincere, or if it infelicitous because the speaker is insincere, the fact remains that the relationship between the abstract notion of "sincerity" and the felicitousness of the sentence is invariant.

For example, a sentence like "sit down, please" is felicitous if I really want you to sit down, and infelicitous if I do not. However, a sentence like "*do, please, you sit down" is ungrammatical no matter what I do or do not want. The difference is that ungrammaticality is definable in terms of the grammar alone, while the felicity condition relates the real world to the representation of the sentence. In this way, the felicitousness of a sentence is not purely part of the domain of grammar, as ungrammaticality is.

1.5.1.1.2. The willful control of the hearer.

The second characteristic which we may assume to apply to the speaker in the case of most imperatives is that the speaker believes that the hearer is capable of performing the desired activity and can consciously act to do so. There are a number of different classes of sentences which, by virtue of their interpretation, clearly conflict with this assumption about imperatives, thus causing semantic violations.

One such class consists of sentences with stative main verbs, stative predicate adjectives, and stative predicate nominatives.¹⁶

- (71a). *Know the answer.¹⁷
- (71b). *Like mushroom pizza pies.
- (71c). *Inherit six television sets.
- (71d). *Develop into a leader of the New Left.
- (71e). *Dream of your motorcycle.
- (72a). *Be tall.
- (72b). *Be taller than your sister.
- (72c). *Be dead on arrival.
- (72d). *Be allergic to peanuts.
- (72e). *Be afraid of heights.
- (73a). *Be a fearful fellow.
- (73b). *Be a (thirty-five-year-old) spinster.
- (73c). *Be a native of New York.
- (73d). *Be the President of the United States.
- (73e). *Be a giant.

The violations in (71) consist of the use of a verb in a context where the subject cannot willfully be in the state which the verb describes. Notice the similarity of the sentences in (74) and (71).

- (74a). John knew the answer (*on purpose).
- (74b). Bill likes pizza pies (*deliberately).
- (74c). Osgood inherited six television sets (*with malice aforethought).
- (74d). Edgar (*purposely) developed into a leader of the New Left.

The use of an adverb such as deliberately indicates the speaker's belief that the subject of the sentence is a possible agent of the verb. In (74) the use of inherently non-active (stative) verbs with such an adverb leads to a semantic violation. A similar violation would occur if we were to explicitly assert the agency of the subject with one adverb and deny it with another, as in (75).

(75). *John spoke to Mary accidentally but on purpose.

An interesting fact about the verbs in (74) is that some of them may not appear with accidentally, while others may. For example,

(76a). *John accidentally knew the answer.

(76b). *Bill accidentally likes pizza pies.

(76c). Osgood accidentally inherited six television sets.

(76d). Edgar accidentally developed into a leader of the New Left.

Apparently the reason for this phenomenon is that accidentally as it is used in these examples means due to accidental external circumstances, and that knowing and liking are not caused by external circumstances, while inheriting and developing are. Notice that accidentally here contrasts with due to predictable circumstances, not with deliberately or on purpose. Since the word may be used in two senses, we may take note of the fact that (76c), for example, actually has two readings, one of which is anomalous. This anomaly occurs when accidentally is

accidentally is interpreted as a contrast to deliberately, in which case agency is implied for the subject of the stative verb inherit. Examples such as the following are ambiguous and acceptable for both readings.

(77a). Bill accidentally met his sister in Filene's basement.

(77b). Harry accidentally failed Spanish.

Let us now look at this interpretation in terms of imperatives. From the preceding examples ((74) - (75)) we have found that verbs such as know, inherit, develop and like, which are verbs of physical or mental state, cannot be used where the interpretation that subjects of such verbs must be agents is forced by the context.

We find, now, that when complement-taking verbs are used which paraphrase imperatives, the same assumption about the subject (in this case the subject of the complement) is present.

(78a). *I order you to know the answer.

(78b). *I request that you dream of your motorcycle tonight.

(78c). *I beg that you develop into a leader of the New Left.

While suggesting may also be rough paraphrases of imperatives, sentences with suggest, advise, recommend, etc. in the matrix

do not illustrate this point, since they do not require that the subject of the matrix verb has any interest whatsoever in the performance of the activity by the subject of the complement sentence. For example, the complement of suggest may contain a condition for the execution of the complement by the complement subject, which leads to the interpretation that the subject of suggest is not unconditionally committed to his suggestion being acted upon.

(79). I suggest that you take an umbrella if $\left\{ \begin{array}{l} \text{it's raining.} \\ \text{you want to.} \end{array} \right\}$

In the case of order, on the other hand, the acceptability of such a sentence with a condition depends on the condition not being in conflict with the assumed desires of the matrix subject.

(80). I order that you take an umbrella if $\left\{ \begin{array}{l} \text{it's raining.} \\ \text{*you want to.} \end{array} \right\}$

If the utterer of a suggestion is not committed to his advice being acted on, then it follows that he can perfectly well suggest something which he knows to be impossible to perform.

(81). I suggest that you inherit six TV sets.

Since an imperative may be interpreted as suggestion, it follows that an imperative may have a well-formed interpretation even if the hearer is being asked to do something impossible. However, if this latter is the case, then most readings of the imperative are excluded. That is, either

the speaker desires the action to be done and believes that the speaker has willful control over doing it, or he does not desire it to be done, and he need not believe that the hearer has willful control.

The sentences in (72) and (73) may now be subsumed under the same description that was applied to those in (71). That is, they describe mental or physical states ("tall", "afraid", etc.) over which the subject can have no control.

We now observe an additional characteristic of imperatives which separates them into two groups. In one group are the imperatives which are unacceptable whether they are negative or positive.

(82a). *(Don't) know the answer.

(82b). *(Don't) like pizza.

(82c). *(Don't) be taller than your sister.

(82d). *(Don't) inherit six television sets.

(82e). *(Don't) be a native of New York.

In the other group are the imperatives which may be negative, but not positive.

(83a). { *Develop } into a leader of the New Left.
 { Don't Develop }

(83b). { *React } violently to every sudden noise.
 { Don't react }

(83c). { *Be } afraid.
 { Don't be }

- (83d). { *Be } stupid.
 { Don't be }
- (83e). { *Be } a quivering blob of jello.
 { Don't be }
- (83f). { *Be } as fat as your father is.
 { Don't be }

In the first set of examples not only can the hearer not put himself into the appropriate state, but he also cannot willfully prevent himself from being in or entering that state. In the second set of examples, while again the hearer cannot put himself into the state in question, he is capable of willfully avoiding that state, or of removing himself from it. There is no reason why this should not be. In the case of violent reactions, for example (c.f. (83b)), while the hearer may reasonably be expected to be unable to make his nerves jittery, he may reasonably be expected to be able to calm himself. Note the difference between (84) and (85) in this connection.

(84a). *Agitate yourself.

(84b). *Be nervous.

(85a). Calm yourself.

(85b). Be calm.

In this case of tallness, on the other hand ((82c)), we neither expect that the hearer will be able to willfully add to his height, nor do we expect that the hearer will be able to

willfully reduce his height.

From all this we may draw the conclusion that when a speaker utters an imperative that is not intended as a suggestion then he believes that the hearer can be an agent, in a very general way. That is, the hearer is willfully capable of doing what the speaker desires him to do, or else he can put himself into the state which the speaker wants him to be in. Whether this is in fact the case depends, of course, on the speaker's knowledge of the hearer, and of the actions or state which he is eliciting. The description of such knowledge is beyond the range of that which must be handled by the grammar.¹⁸

What this is intended to show is that the starred sentences above are unacceptable not because they violate any syntactic constraints or rules, but because they presuppose certain things about the world which are false. The nature of this presupposition is, simply, that one has willful control over the event described by the sentence. There are subtle differences between individual cases which are unacceptable that derive from differences in the ways in which one lacks willful control over different events. An example which illustrates this is the following.

(86a). Find out what John did yesterday.

(86b). ?Find out that John did something yesterday.

We can see that it is insufficient, and incorrect, to put some feature on find out which selects with the imperative interpretation, since the unacceptability of (86b) is not purely a consequence of the verb find out. Rather it is function of the kind of thing that one is being asked to find out, namely something which one knows as soon as the sentence is uttered. Since find out presupposes that one does not know what it is that one is to find out, (86b) is unacceptable. One may have a description of what it is, but not the content.

(87). Find out Bill's answer (,?which was that he refuses to pick up the garbage.)

All the grammar tells us is that the sentence in question may have the imperative interpretation. The semantic component tells us that if a sentence with this interpretation is to be acceptable, then it must be that the hearer has control over the performance of the event he is being asked to perform.

1.5.1.1.3. What the speaker expects.

The third characteristic which is claimed to be a basic part of the imperative reading is that the speaker expects the hearer to do what he wants him to do. In the normal case the speaker expects his order to be obeyed, his request to be satisfied, his warning to be heeded, his advice to be taken. As has been pointed out before, a characteristic of this sort may be superseded by other material in the discourse, or by the general context, although I rather doubt that it is possible

to supersede this aspect of the reading in the utterance of the imperative itself.

1.5.1.1.4. The speaker's attempt to elicit an action.

Another aspect of the interpretation of an imperative which is not a suggestion is that the speaker, in uttering an imperative, is attempting to elicit an action from the hearer. This aspect of the interpretation is not entailed by the other aspects of interpretation mentioned already, as can be seen from the following example, which expresses the other aspects, but is not "elicitive".

(88). U.S. I want you to get out of Vietnam, I think you can get out of Vietnam, and I expect that you will, eventually.

(88) is different from (85).

(89). Get out of Vietnam, U.S.

In the case of an imperative we may assume that if the hearer performs the desired act, then the speaker will be satisfied.

Let us now consider some cases of unacceptability of imperatives which were discussed in 1.3.2. At that time I noted that the argument for having only one rule of you-deletion depends in large part on showing that the kinds of unacceptability discussed in 1.3.2. were due to semantic, and not syntactic violations. Further development of the data revealed that the argument in favor of the existence of one and only one rule of you-deletion did not depend entirely on determining

the source of the unacceptability discussed. It is nevertheless crucial to the establishment of our hypotheses to show that the kinds of unacceptability encountered here are semantic, and that they can be accounted for by considerations of semantic consistency which are quite independent of the specific restricted range of data that imperatives entail. In this way we can arrive at some notion of what the distinction between semantics and syntax, by constantly working in the direction of greater generalizations.

It is important, therefore, to keep in mind the kind of condition discussed in section 1.3.2A. The conclusion drawn in that section was that you-deletion cannot apply if you precedes a modal. I showed that this condition held regardless of the intended interpretation of the sentence, or, to put it another way, that the unacceptability caused by violating this condition had nothing to do with the interpretation of the sentence in question.

In 1.5.1.1. I have tried to establish certain facts about the interpretation of imperatives. In the following few sections I will be looking at several cases of unacceptability in imperatives which were introduced in 1.3.2. I will show that these cases are consequences of the facts about interpretation of imperatives discussed above.

1.5.1.2. The interpretation of passive imperatives.

Back in 1.3.2B I touched briefly on the subject of passive

imperatives, promising to return to it later. Let us resume the discussion in more depth here.

The basic question which we must answer about passive imperatives is why only some of them are acceptable. As I indicated in 1.3.2B, if it were the case that the semantics of passives and imperatives were mutually inconsistent, it would follow that none would ever be acceptable. Since some are acceptable, it follows that passive imperatives which are unacceptable cannot be so solely by virtue of the fact that they are both passives and imperatives.

For the sake of convenience, I repeat the sentences in (8)-(10).

- (8a). Be welcomed by the Prime Minister, the Foreign Minister, and seventeen chicken colonels.
- (8b). Be toasted to a crisp by the vicious Miami sun.
- (8c). Be hit on the shoulder by falling rocks.
- (8d). Be given a pat on the head and told to leave quietly.
- (8e). Be hailed as the greatest pool player since Ivan Kholodnopivo.
- (9a). Don't be seen by the washerwoman.
- (9b). Don't be found with a lot of gold in your money belt.
- (9c). Don't be surprised by our knock at the door.
- (9d). Don't be known as a big spender in Juarez.

(10a). Don't be believed by Harry to have been claimed by Sheldon to have been visited in the night by Myra.

(10b). Don't be allowed to keep loaded dice in your room.

(10c). Don't be arbitrarily evicted by an absentee landlord.

It can be seen that our discussion in the previous section stands us in good stead when dealing with examples such as these. Notice first that the passive describes a state which the surface subject enters when the action represented by the verb is executed by the deep subject, which appears in the agent by-phrase.¹⁹ Thus if John hits Bill, Bill is then in the state of having been hit by John. We would expect, then, that any problems encountered in the case of passive imperatives should reduce to the problems which we have already discussed concerning stative verbs, nouns and adjectives. In particular, we would expect such sentences to be unacceptable in case it is impossible for us to envision the hearer putting himself in a position whereby a certain thing will happen to him at the hands of something or someone else. The precise judgements in each case should depend on how we view the world, and on our usage of the main verb of the imperative.

For example, compare (8a), (9a), and (10a). In the first of these sentences we assume that the welcome by the Prime

Minister and the others would tend to depend on whether those individuals, in their own opinion, consider one to be welcome in their country. There would be nothing that the hearer could do in order to insure a welcome, if this were the case. However, the sentence is quite acceptable in a context in which it is taken for granted that the ministers and colonels will present a welcome to anyone who presents himself to them. Perhaps they have been paid off, or perhaps they like all strangers. Given this condition, it is appropriate to suggest that one do what is necessary in order that what is described will take place, considering that one really has to do very little at all.

Similarly, one may properly utter the sentences in (90), below, if it is assumed beforehand that the activities mentioned are already underway, or will commence upon the exertion of a minimum of effort of the part of the hearer.

(90a). Be shot at by Arab guerillas.

(90b). Be acclaimed as a divine being by the teeming millions of Asia.

(90c). Be swept up in a great tide of humanity.

(90d). Be acknowledged as a great leader.

In the case of (9a) the hearer is being urged to avoid a certain position, and it is assumed that he is capable of doing so. It is also assumed that all the hearer has to do is avoid showing up in view of the washerwoman. This can be contrasted

with the corresponding positive imperative.

(91). Be seen by the washerwoman.

In this case we assume that the washerwoman can't help but see the hearer if he puts himself within viewing range of her. This must be assumed for the sentence to be acceptable. If we use a verb which expresses an action over which the washerwoman has willful control we observe a shift in acceptability.

(92). ?Be spoken about by the washerwoman to her mother.

Sentence (11a) is similar to (92). In both examples the deep subject is involved with the action to such an extent that the hearer really has very little control over the situation at all. It seems that the prime requisite for such sentences to be acceptable is that the hearer be capable of placing himself in a position where the event will take place, and furthermore that he have little more to do than be present.

A pair of examples which perhaps illustrates this more clearly is

(93a). ?Be hit by falling rocks.

(93b). Be run over by a subway train.

Intuitively, (93b) is felt to be a more reasonable request than (93a). I suspect that this is because the location of the falling rocks and the time at which the rocks fall are more uncertain than the same parameters with respect to subway trains. While one might have to wait years to be hit by

falling rocks in a certain place (assuming no human intervention), one is fairly sure of being hit by a subway train if one stands on the subway tracks. In a land where subway trains run randomly over the countryside, but where the rocks fall on schedule, the situation is reversed.

In general, the surface subject of a passive imperative lacks control over being in a position such that the event described will happen to him, particularly if the verb is one of mental process (believe, forget, think, etc.) or of emotional state (like, love, admire, amuse, surprise, amaze, etc.). If the deep subject is a randomly occurring natural phenomenon, then the hearer also will have no control over the situation. If, however, the occurrence of the event is predictable, either as a consequence of one's knowledge of nature, or of the way society is structured, then the hearer can reasonably be expected to be able to let such an event happen to him. Let us emphasize that the linguistic information which may be gleaned from a passive imperative is only that the speaker believes that the state which he is asking the hearer to enter is of the type just discussed. Whether or not it in fact is of this type is irrelevant to the grammatical description of the language, although the linguistic description of the sentence and facts about the world, taken together, do explain why we find certain sentences strange.

Notice, incidentally, that we could not capture the fact that some passive imperatives are acceptable and some

unacceptable by a syntactic device, such as a condition on the passive transformation. The preceding discussion has shown, I think, that the source of the unacceptability is a distinctly semantic phenomenon, depending as it does to a great extent on the speaker's beliefs and knowledge about the world. Any attempt to represent this phenomenon as part of a condition on a transformation whether ultimately successful or not, simply obscures what is going on here.

1.5.1.3. Imperatives with perfect have or progressive be, and certain statives.

In 1.3.2D and E I observed that one requirement for the generalization of you-deletion was that imperatives with aspectual have or be, if unacceptable, would have to be unacceptable in terms of the interpretation, and not the syntax. One might tend to suspect that this is the case because of the acceptability of some sentences with aspectual have or be, particularly if a time adverbial is specified in such cases.

Let us inquire into the "time" of an imperative in case it is not overly specified by means of an adverbial. By "time" I mean the time at which the speaker desires the hearer to perform the action described by the sentence.

It is possible, first of all, for the time of an imperative to be generic. If the event described by the imperative involves entering a state, such as quiet, glad, brave, etc. then it is assumed that the speaker desires that

(96b). Read that poem { \emptyset
every Christmas. }

(96c). { \emptyset
Whenever you run into him } smile and say hello.

Nevertheless, these adverbials merely specify a set of times at which the imperative is applicable. The sentences in (96) are not generic, since the time is non-unique, not unspecified.

We are interested here particularly in the imperatives with specific time. I will try to show that the unmarked specific time of the imperative is immediately following the utterance of the sentence. Then I will show how this conflicts with the use of aspects in the absence of adverbials which override the unmarked time.

The demonstration that the unmarked value of time for non-generic imperatives is immediately after the time of the utterance of the sentences (which I will call "now") is based on the notion of contrast. Use of the conjunction but between clauses requires that the speaker of the sentence view the two clauses as contrastive in some way. In particular, with time adverbials but can be used to contrast the time at which an event does not take place and the time at which it does. For example,

(97a). Harry didn't pass the bar exam this year, but

he

{
he will next year.
he didn't last year either.
*he did this year.
}

(97b). Tom has a ready smile this year, but

{
*he will
next year.
he did last
year, too.
he won't next
year.
}

(97c). George rode no horses in 1962, but he rode

{
some in 1961.
none in 1961 either.
none in 1962.
}

In the case of some imperatives we find that contrasting "now" with the unspecified time of the imperative results in readings which are somewhat strange.

(98a). ?Give Bill a book, but do it now.

(98b). ?Open the window please, but do it now.

(98c). ?Park the car, but do it now.

(98d). ?Write your mother a letter, but do it now.

There are many imperatives where, owing to the nature of the activity involved, it is assumed that the action cannot be performed now, and the contrast is thus made acceptable.

(99a). Read War and Peace, but do it now.

(99b). Cook tomorrow's breakfast, but do it now.

(99c). Throw a party for your twenty-sixth birthday,
but do it now.

These examples should not obscure the fact that in the absence of any prejudicial information about the time at which the action should be performed, or must be performed, the unmarked time is immediately after now. By prejudicial information I mean anything which we know about the action to be performed which would suggest that "now" could not be the time at which to do it. Generally, this has to do with the entire sentence, rather than just with the verb. For example, while the request "read War and Peace now" may be unreasonable, the request "read this page now" is much more likely to be reasonable. It should be realized, of course, that considerations of this sort are extra-grammatical.

We should observe at this point that under no conditions can the time of the imperative be in the past. Part of the meaning of desires and expectations is that they concern events in the future, immediate or otherwise. An imperative, expressing as it does both a desire and an expectation, is necessarily non-past, and can be specified as such by whatever means is used to mark desired or expected events as non-past.²⁰

Let us now examine the time associated with the perfect. Jespersen (1964, V,23.6.1.) says of the perfect that it "is a retrospective present, which connects a past occurrence with

the present time, either as continued up to the present moment or as having results or consequences bearing on the present moment." In other words, using time \underline{t} as a referent, the sentence with the perfect describes an event occurring at least before time \underline{t} . While present tense can normally be used to imply future time, the present perfect cannot, since if time \underline{t} is now, the event, which precedes time \underline{t} , cannot be in the future, subsequent to time \underline{t} .

(100a). John leaves for Italy tomorrow.

(100b). *John has left for Italy tomorrow.

(100c). Bill has six classes this coming Friday.

(100d). *Bill has attended six classes this coming Friday.

If the modal will is used, then the perfect is interpreted as referring to the state of affairs up to a certain time in the future. Notice also Jespersen's observation to the effect that the time of the perfect is not a point in time, but a time span which includes time \underline{t} . The following examples illustrate this point.

(101a). John has struck out four times

{ *last year.
this year (till now).
*tomorrow.
today (up till now). }

(101b). Joe will have been married twelve years

{	today	{ *up till now.	}
		{ at 6 o'clock this evening.	
	next June.		
	*yesterday.		
{	this year	{ *up till now.	}
		{ (in June).	

(101c). Jeanne has seen Casablanca forty-seven times

{	*last March.	}
	by last March.	
	*yesterday.	
	up until yesterday.	

In summary, the time of the imperative is the very immediate future or later, and the event represented by a sentence in the perfect aspect must necessarily have occurred at least in the past relative to time t . In the unmarked case time t for imperatives is the immediate future, so that there exists no time span that is completely non-past such that the event has occurred within this time span. For this reason then, unadorned perfective imperatives are unacceptable.

If, on the other hand, a time adverbial is used to specify a time span in the future over which the event must take place, then the corresponding perfective imperative with this adverbial will be acceptable. The function of the adverbial is to place time t in the non-immediate future.

(102a). Have finished War and Peace $\left. \begin{array}{l} * \emptyset \\ \text{by tomorrow.} \\ * \text{tomorrow.} \end{array} \right\}$

(102b). Have cooked this evening's dinner $\left. \begin{array}{l} * \emptyset \\ \text{by} \\ \text{before} \\ * \text{at} \end{array} \right\} \text{six.}$

(102c). Have seen "I am Curious (Yellow)" $\left. \begin{array}{l} * \emptyset \\ \text{by} \\ * \text{on} \\ \text{before} \end{array} \right\} \text{next Sunday.}$

A similar explanation applies to imperatives with the progressive be. In general, the interpretation of this construction is that an event begun in the past is still taking place at the time of reference. In the imperative, if the time of reference is "now", then the event which the imperative attempts to elicit must begin at some time before "now", in the past, which as we have seen is impossible. Thus sentences such as those in (103) below appear strange.

(103a). ?Be shelling peas (this very moment).

(103b). ?Be reading the newspaper (now).

(103c). ?Be going to Chicago (right now).

(103d). ?Be listening to a concert (at this very moment).

However, if a future time is specified at which the action is to be performed, then a reading in which the hearer is

state the existence of such an activity is, of course, idiosyncratic as far as the grammar is concerned.

1.5.1.4. Summary of the interpretation of the imperative.

We have established that in the normal case an imperative may have all of the following semantic properties, or none of them, in which case it must be a suggestion.

A. The speaker desires that the hearer do something.

B. The speaker believes that the hearer is willfully capable of doing this.

C. The speaker expects the hearer to do this.

D. The speaker is attempting to elicit the action from the hearer.

The use of the word "do" is rather imprecise. It is to be understood as "do" if in fact the imperative describes an action. If the imperative describing a state, then "do" must be understood as an action which one must perform in order to enter that state.

In the reading of passive imperatives the hearer is not believed to be able to act as an agent in the same sense as the deep subject of the passivized verb is understood to be an agent. Rather he is believed to be the agent of whatever action is necessary to cause him to function in the manner of the verb describing the action performed by the deep subject.²¹

The time of the desired action is the immediate future, in the normal case.

It will be recalled that an imperative sentence can have a variety of uses: order, request, warning, suggestion, etc. In the discussion which dealt with the interpretation of imperatives it was tacitly assumed that the observed semantic characteristics of imperatives would somehow be accounted for by the semantic component of the grammar, and that they would appear in some representation in the semantic representation of sentences. However, it seems likely that certain aspects of the interpretation follow quite naturally when the particular use of the imperative is identified. For example, if the imperative is used as an order, then it has most of the semantic characteristics of sentences which contain the matrix verb order. This will be gone into in more detail in the following section.

1.5.2. Sentences which share the imperative readings.

There exist a number of constructions in English which have interpretations which intersect with the interpretations of the imperative. Trivial examples of this are (107a) and (107b).

(107a). I desire that you eat your spinach.

(107b). I expect that you will eat your spinach.

Less obvious are sentences such as those in (108) below.

(108a). It is desirable that you leave the country.

(108b). It is important that you eat nothing with
cinnamon on it.

(108c). It is imperative that you pay your rent on time.

We should be able to point out the ways in which the interpretations of such examples are similar to the interpretations of imperatives, and the ways in which they differ. In this section we shall investigate the possibility of isolating certain semantic characteristics of imperatives which will enable us to compare them with examples such as these, and others.

1.5.2.1. Complement structures.

As I noted in passing in 1.4.2.3., imperatives are very close in interpretation to sentences containing verbs such as command, order, request, suggest and pray, which correspond roughly to the various possible interpretations of imperatives. That is, an imperative may serve as a command, a request, a warning, a suggestion, a prayer, etc. Such verbs are called "performatives",²² since by using one in certain contexts one is performing the act which it refers to. Thus if I say, for example (109) --

(109) I suggest that you take that carrot out of your ear.
--I am performing the act of suggesting while I am uttering the sentence.

Fraser has noted²³ that an imperative differs from a sentence of this type. Consider (110a) and (110b) below.

(110a). Stand up straight and tall.

(110b). I order you to stand up straight and tall.

Fraser's observation is that while both sentences have the force of orders, only in the second example is the notion of "order" explicit in the interpretation. In other words, out of context (110b) can only be interpreted as an order, while the interpretation of (110a) can only be determined within a range. Observe that although many different kinds of sentences may be used as orders, none but those like (110b) are necessarily and explicitly orders.

(111a). If you know what's good for you you'll stand up straight and tall.

(111b). The last man who failed to stand up straight and tall spent a month in a hospital bed.

(111c). The general likes his men to stand up straight and tall.

(111d). I don't suppose you know what happens to people who don't stand up straight and tall.

(111e). If you don't stand up straight and tall you're gonna wish you had very soon.

Given the proper context all of these sentences can be interpreted as orders by the hearer. So can an imperative, given the proper context. What we are saying, then, is that there is an aspect of the interpretation of an imperative and of sentences like those in (111) which permit them to be understood as orders. We are not saying that the interpretation

of an imperative may be an order, in the same sense that the interpretation of (110b) is an order.

The semantic status of the complement sentences depends of what the next verb above is, while the semantic status of an imperative depends on the entire linguistic and extra-linguistic context in which it is uttered. An example of how the extra-linguistic context can affect the interpretation of the imperative concerns the use of the eyes. Most people would probably interpret an imperative as a request if the speaker batted his or her eyes, but as an order if the speaker fixed the hearer with a steely gaze. Please is a linguistic device for accomplishing the former, although the absence of please, just like the absence of batted eyes, does not alone settle the question of how the imperative is to be interpreted in one way or the other. On the other hand, if request is replaced by order, there is no question about the interpretation of a complex sentence.

Let us now move on to consider another important feature of complement sentences like those which are given in (109) and (110). As a paradigm example of the former I will use imperative, while as a paradigm example of the latter I will continue to use order.

The use of a verb like order in a complex sentence entail the same assumptions about the subject of the verb that we attributed to the speaker of the sentence in the case of

imperatives. That is, the speaker a) desires that the subject of the embedded sentence perform some activity, b) expects that he will perform that activity, c) believes that he is willfully capable of doing it, and d) is attempting to elicit this activity from the subject of the complement. There is, we shall say, a kind of "pressure" on the subject of the complement to perform the activity. There is a reason that this pressure exists, which is that the subject of order desires that the subject of the complement perform the activity.

It can be seen that the reason for this pressure is not that the subject of order expects something. Nor is it because the subject of order is trying to elicit the activity. Notice that this notion of "pressure", which can be thought of as a sort of obligation, is absent from the following examples.

(112a). I expect the Mets to win the World Series.

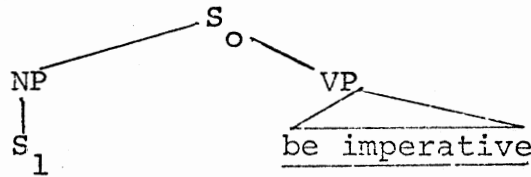
(112b). The cat tried to force the door to open.

Let us refer to the reason for this pressure as the "source" of the pressure.

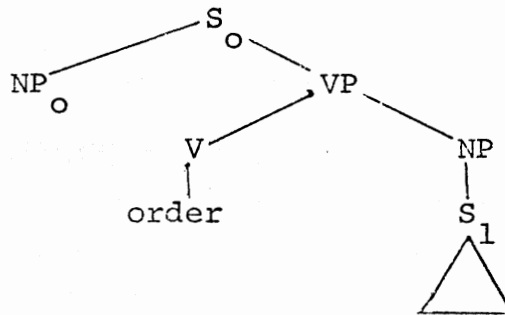
In sentences like those in (108) there is also pressure. However, the source of the pressure cannot possibly be the subject of the matrix sentence in these examples, since the complement sentence itself serves as the subject of the higher sentences, as shown by the deep structure (113a).²⁴

Compare this deep structure with (113b), which underlies sentences with verbs like order,²⁵

(113a).



(113b).



While in the case of order the source of the pressure is the subject of order, or more specifically, his desires, the judgement that a particular action is imperative is made by the speaker of the sentence, and not by a person represented by an NP in the sentence itself. If a structure like (113a) is embedded, then this judgement can be transferred to such an NP, provided that the sentence containing imperative is the complement of a verb of saying or thinking.

(114). Bill { thinks } that it is imperative that we
 { says }
 leave town tonight.

If, however, the sentence containing imperative is in an environment where it must be factive, then the speaker of the sentence is responsible for the judgement.

(115a). Bill is a man whom it is imperative that we talk to.

(115b). If it hadn't been imperative that we buy this house we wouldn't have bought it.

(115c). Harry acknowledges that it is imperative that he see this movie.

I would claim that one difference between sentences with order and the sentences with imperative resides in the source of the pressure. In (110b) it is the case that you should stand up straight and tall because "I" want you to. In (108c), however, it is the case that you should pay your rent on time not because the speaker desires it, although he might in fact, but because in his judgement external circumstances require it.

In this connection it is interesting to note that for the most part NP's which can serve as the subject of a verb like require or demand must be either animate, abstract, or personifications.

(116a). John $\left\{ \begin{array}{l} \text{requires} \\ \text{demands} \end{array} \right\}$ that we be there on time.

(116b). External circumstances require that I be there.

(116c). Legal tradition demands that you keep your mouth shut in court.

(116d). A false hypothesis $\left\{ \begin{array}{l} \text{demands} \\ \text{requires} \end{array} \right\}$ that you provide counter-evidence to it.

would not be unwilling to do something, which the suggestion offers to help him do. So, for example, (117) could be in response to the question "How do I keep all the topsoil on my front lawn from washing away in the Spring thaw?"

If a person, on hearing (117), says "Why should I plant trees on the front lawn?", then the proper response would be something like "If you want to keep all the topsoil on your front lawn from washing away in the Spring thaw, then you should." In this way, then, the source of the pressure can be said to be ultimately the desires of the complement subject, since from the suggestion it can be assumed that there is something that he wants to be able to do, assuming also that the utterance is felicitous.

We have already commented on the fact that the interpretation of suggestions lacks those aspects of interpretation which have been attributed to orders. (See 1.5.1.1). The situation is comparable in the case of sentences with imperative-type predicate adjectives. While often the speaker's judgement that an activity should be performed coincides with his desire that it be performed, the possibility exists that the speaker may only be reporting the situation and attributing the judgement to others, or using it metaphorically.²⁶ Consider the following examples, which have an acceptable interpretation if the judgement is attributed to circumstances, and not used as an expression of the speaker's personal feelings.

(118a). It is certainly desirable that you leave, though I wish you could stay and I think that you should.

(118b). It is important that you be here all day tomorrow, as much as I want you to be out in Scarsdale with the gang.

(118c). It is necessary that we pay the Pied Piper, even though we want to forget all about him when payday comes.

As far as the speaker's belief in the willful ability of the complement to perform the activity is concerned, the same kinds of observations can be made. Even if the speaker believes that something is imperative, desirable, important, etc., there is no reason to assume that he believes it is possible. Nor, for that matter, is there any reason to believe that he expects it to be done.

Finally, there is the question of whether such sentences are elicitive. Notice first that the subject of the complement of order cannot be identical to the subject of order.

(119a). ?I order myself to leave the country.

(119b). ?I order that I leave the country.

Since one may want to do something, expect oneself to do something, and believe oneself to be willfully capable of doing something, these sentences must be unacceptable because one cannot try to elicit the performance of an activity from

oneself through a speech act.²⁷ Since the following sentences are perfectly acceptable, they cannot be elicitive in this way.

(120). It is

}	important
	desirable
	necessary
	imperative

 that I find a hotel before dawn.

A slightly weaker, but still adequate case can be made for the non-elicitive character of similar sentences where the speaker and the embedded subject are not identical. We must construct examples which clearly elicit an action which contradicts with that of the complement, yet which are semantically consistent. An order, which has the property that it is being passed on by the speaker satisfies this requirement.

(121a). Although it is desirable that you shell all of the peanuts, I reluctantly order you not to shell any of the peanuts.

(121b). Although it is necessary that you reach Chicago by Monday, I regretfully order you to stay in New York until Tuesday.

Let us pause here to review the interpretations of the complement sentences which we have been discussing. We observed that with a verb like order the subject of the verb a) desires, b) believes, c) expects, and d) attempts to

elicit. A verb like suggest presupposes none of the above, and neither does the subject complement construction. In the two latter cases a(, b), and c) are possible conditions, but not necessary conditions which must be met for the sentence to be felicitous. Common to all of these sentences is the pressure reading, which may be thought of as the representation of some abstract form of force on the subject of the embedded sentence to perform a particular activity. The source of this pressure, however, depends on the choice of the complement and the choice of matrix predicate. In the case of order the source is the matrix subject's desires ("because I want you to"); in the case of suggest it is the desires, ultimately, of the subject of the complement sentence ("because it will enable you to get done what you want done"); in the case of imperative it is the external state of affairs, possibly interpreted by the speaker.

What does all this mean? First of all, we are trying to specify the direction in which investigation should go, and we are trying to discover what sorts of phenomena require explanation. In particular, there is no explanation required for the fact that a simple imperative, when it is used as an order, can be semantically unacceptable in exactly the same ways in which the complement of "I order that..." can be semantically unacceptable. If it is the case that an imperative can be used to give an order, which is a well-known fact, and

if it is also the case that "I order that,..." is a performative which one may utter while giving an order, which is also a fact, then it follows that both constructions will have the semantic characteristics of orders.

What we should do, I think, is try to specify what it is that characterizes orders, requests, suggestions, etc., and then try to find an explanation for why it is that these particular activities delimit the range of interpretations of simple imperatives. We have been seeking a well-defined characterization of this range in terms of "pressure" and "source of the pressure".

Second of all, we have been trying to show that to a certain extent, given the fact that a sentence is subjunctive, it can be determined that it has the pressure interpretation. Furthermore, in many cases it can be determined what the source of the pressure is, given the syntactic structure of the sentence and the semantics of the lexical items. We may state the generalization as follows: if a sentence with subjunctive is not embedded, or if it is a complement sentence, then it will have the pressure interpretation. In the case of pseudo-imperatives we must say that subjunctive has an irrealis interpretation, since clearly there is no sense of pressure in the antecedent of pseudo-imperatives.

In 1.5.2.2 I will consider some sentences in which this rule may apply in an interesting and unexpected way.

1.5.2.2. Why-sentences and why-not-sentences

In English there are two constructions, illustrated below, which I shall call why-sentences and why not-sentences.

(122a). Why buy a mule when a horse is so much better.

(122b). Why shave yourself in cold water all winter long.

(122c). Why lose oneself in a morass of legal problems.

(123a). Why not have a sandwich for lunch.

(123b). Why not put yourself and your family in a better position.

(123c). Why not come over to my house for dinner.

There are a number of facts about sentences like those in (122)-(123) which should be noted. First of all, why is the only WH-word which may be used precisely in this way.

(124a). *How (not) put on this button.

(124b). *What protect oneself against.

(124c). *Where sit down in this mess.

(124d). *When put out the fire.

Second of all, the sentences in (122) are close paraphrases of those in (125) below, while the sentences in (123) are paraphrases of those in (126).

(125a). Why should

}	you
	we
	I
	anyone

 buy a mule when a horse

is so much better.

Speaker B: Why $\left\{ \begin{array}{l} \text{shouldn't} \\ \text{?don't} \end{array} \right\}$ we destroy Carthage.

(128c). Speaker A: We should destroy something.

Speaker B: Why $\left\{ \begin{array}{l} \text{?shouldn't} \\ \text{don't} \end{array} \right\}$ we destroy Carthage.

(127b) is an incongruous dialogue if the why not is interpreted as why don't we, but it is acceptable if why not is interpreted as why shouldn't we, as can be seen in (128b). On the other hand, the why don't we interpretation appears to be acceptable in (128c), while the why shouldn't we interpretation is far less so in the same example.

It seems correct to say, then, that there are two quite different constructions here, which have different interpretations. The why not-interpretation is that of a suggestion or an invitation, while the why-interpretation is that of a question, albeit a special kind of question.

It is interesting to note that the why-sentences presuppose the existence of pressure. This can be observed, for example, in (127b) and (128b). Unlike other constructions which we have associated with the pressure interpretation, why-sentences do not assign it to an individual, as orders do. In fact, the why-sentence is a question about the source of the pressure.

It should be recalled from our discussion of the simple

imperative and of complement sentences that the source of the pressure is the reason for the existence of the pressure. It might be the desires of the speaker, or the desires of someone else, or it might be external circumstances as reported by the speaker. A sentence which inquires after the source of this pressure is a question about the reason for the pressure, and hence it is not surprising that such a sentence involves why, rather than how, what, where, when, etc.

For some reason the deletion of the subject in why-sentences is associated only with the interpretation of why as we have indicated above. Notice that a strict interpretation of why in these sentences, as a query about the reason why there is pressures at all, is impossible. If we paraphrase why with for what reason this distinction is brought out quite clearly, I think,

- (129a). { Why } put that package in the sink.
 { *For what reason }
- (129b). { Why } not destroy Carthage.
 { *For what reason }
- (129c). { Why } shave yourself in cold water.
 { *For what reason }

Although superficially it might appear that the deletion of the subject is due to the application of you-deletion or of a slightly extended rule of unstressed subject deletion (to account for one), some consideration of the matter will show

that in fact any noun phrase whatsoever may be understood as the absent subject, particularly if an appropriate context of discourse is available.

(130). Speaker A: I hear that all policemen have
to carry two guns, a gas mask, and
a hand grenade.

Speaker B: Why on earth carry two guns a gas
mask, and a hand grenade.

In (130) it is not necessarily the case that the first speaker is a policeman. Speaker A's comment might be a complaint, if Speaker A is a policeman, in which case the missing subject is "you". If only Speaker B is a policeman, then the missing subject is "I". If both are policemen, then the missing subject is "all policemen".

If these judgements are correct then it should be the case that we can have reflexives in why-sentences which are not yourself. Given the proper context, I believe that this is in fact possible.

(131a). Speaker A: I should get myself a haircut.

Speaker B: Why get yourself a haircut.

(131b). Speaker A: You should behave yourself in church.

Speaker B: Why behave myself in church, when...

(131c). Speaker A: John should make himself more
interesting.

Speaker B: Why make himself more interesting,
when he's sure no one would
notice.

(131d). Speaker A: We should restrain ourselves.

Speaker B: Why restrain ourselves, when
everyone else is going wild.

(131e). Speaker A: Physicists should express themselves
more clearly.

Speaker B: Why express themselves more clearly,
when they understand one another
right now.

Let us now return to the why not-sentences. Previously I observed that why not-sentences could be interpreted either as negated why-sentences, or as suggestions or invitations. The difference between the two readings was illustrated by the examples in (127) and (128). It was demonstrated that while the why-sentence involves the existence of pressure the why not-sentence does not. We also observed that this interpretation of why not-sentences was the same as the interpretation of sentences with why don't you.

(132a). "Why not come up and see me some time", suggested
the blond woman.

(132b). "Why don't you come up and see me some time",
suggested the blond woman.

It is an interesting fact that this is one of the few environments, if not the only environment, where a negative element is not interpreted as negation when it is contracted with do, or when it is not contracted at all. We will see one instance of "pseudo-negation", i.e., where a negative element lacks a negative connotation, in connection with "question-imperatives", and another in connection with "tagged" imperatives, but these cases involve modals other than do. Several other instances of the same phenomenon will be pointed out in later sections. None of them, however, involve do.

Why not-sentences with undeleted subjects may have non-you subjects and still be interpreted as suggestions. For example,

(133a). Why don't we go over to the neighborhood bar.

(133b). Why doesn't your friend come over here and sit down with us.

(133c). Why doesn't the President ask his advisors for more accurate information.

While these sentences may be interpreted as requests for information, they may also be suggestions. The presence of present tense, as evidenced by the subject-verb agreement in (133), suggest that syntactically the why not-sentence should be treated no differently than a WH-question with why. The ultimate interpretation of the construction will

be either that of a why not-sentence or of a WH-question under the appropriate circumstances.

The fact that not and n't are not interpreted as negation in why not-sentences at first suggests, along with the fact that the same interpretation may be associated with sentences with present tense, illustrated by (133), that the derivation of why not-sentences is essentially different from that of why-sentences. There are three significant differences between the two constructions.

1. The why-sentence is paraphrasable by should, and the why not-sentence by don't.
2. The why-sentence is a question about the source of the pressure, and the why not-sentence is an invitation.
3. If not appears in a why-sentence it is interpreted as verb phrase negation, but it lacks a negative connotation in the why not-sentence.

At first glance it might appear that the subjects of why not-sentences fall into the same range as subjects of why-sentences. We pointed out previously that the subject of why-sentences can be any noun phrase which can be under an obligation to do something. The following examples suggest that this might be the case with why not-sentences as well.

(134a). A: How are we going to get to Chicago?

B: Why { don't we } hitchhike.
 { not }

(134b). A: What shall we do to celebrate?

B: Why { don't we } treat ourselves to a
 { not }

good time by going to see a movie.

I am quite convinced, however, that the subject of a why not-sentence cannot be third person, nor can it be first person singular.

(135a). A: What are you going to do to celebrate?

B: Why { don't } I give myself a present.
 { *not }

(135b). A: John is having an awful problem washing his windows.

B: Why { doesn't he } get himself a ladder.
 { *not }

(135c). A: I see friends of mine coming into the restaurant.

B: Why { don't they } find themselves a place
 { *not }
to sit down over here.

In fact, it seems that only case in which the subject of the why-construction is acceptable is when it either

explicitly or implicitly involves the second person. Consider an example in which this is not the case.

(136). A: All you students are required to indicate your position on the issue.

B: Why $\left\{ \begin{array}{l} \text{don't we} \\ \text{?not} \end{array} \right\}$ express ourselves through a referendum.

In this example B, representing the students, is addressing A, who is not a student. In this case ourselves means we students, as opposed to you non-students. As far as I can tell, B should not say why not unless he is making a suggestion to a group of students, rather than to a non-student. I will admit, however, that this judgement is a rather delicate one, and that widespread disagreement is likely.

What the preceding suggests, at any rate, is that both the why-sentences and the why not-sentences may have dummy subjects. In each case there are restrictions on what the range of interpretation of this subject may be, but in neither case does there appear to be a convincing argument that there is a rule of deletion operating on the subjects of such sentences.

The two constructions are also similar in that neither possesses a phonologically realized AUX in surface structure. We may represent this fact by considering the AUX to contain the element SUBJ, as was the case with imperatives (c.f. 1.4.1).

The why- and why not-sentences would be derived from the following underlying schema.

(137). why (not) NP SUBJ VP
 △

Such an analysis poses a number of apparent problems. First, how are we to account for the ambiguity of sentences with why not that we have already noted? Second, how are we to explain the different range of interpretations of the dummy NP subject? Third, why are sentences with why and why not unacceptable if the subject NP is not a dummy? Fourth, why do sentences with non-SUBJ AUX's have the same interpretation as sentences with SUBJ?

As can be seen from the examples, the ambiguity of sentences with why not can be accounted for in a very straightforward way by relating the interpretation of the sentence as a whole to the scope of negation. We will have more to say about scope of negation in later sections, but for the moment notice simply that negation may have an interpretation with verb phrase scope, as in (127b). In the other interpretation negation completely lacks a negative connotation, which we will see is a phenomenon that can be correlated with sentence scope of negation in similar cases.

We must say, therefore, that there is an interpretation of why...(not)SUBJ, and there is an interpretation of why not,...SUBJ, both of which are idiomatic to the extent

that similar interpretations do not exist for other WH-words. The restricted range of the dummy subject in the case of why not-sentences also seems to be idiosyncratic, since as the sentences in (128) show, the restrictions are in effect just in case the AUX contains SUBJ.

Consideration of the following sentences shows that the requirement that the subject must be a dummy if the AUX contains SUBJ is also ad hoc.

(138a). Why { doesn't your friend } come over here.
 { *your friend not }

(138b). Why { should } John carry a bow and arrow.
 { *∅ }

Again, it is difficult to see how this phenomenon can be accounted for as the result of some regular process of the language.

The last apparent problem has to do with the paraphrases with do and should which we have noted. The fact that should can replace SUBJ in the AUX of the why-sentences seems to have a plausible explanation in terms of the discussion at the beginning of the section. It is also plausible that SUBJ should be associated with a suggestion, as in the why not-construction, but it is not at all clear why it should be that why don't you can also have this interpretation. What appears to be the case is that a special rule of interpretation is required to assign this interpretation of why don't you optionally.

To summarize, then, we have a deep structure which is one of the expansions of (137). After negation is moved into the AUX, an interpretation is assigned depending on whether we decide that the scope of negation is sentential or VP. If scope is sentential, then the sentence is a suggestion, and if the AUX contains SUBJ, then the surface subject NP must be a dummy, otherwise the sentence is unacceptable. If scope of negation is not sentential, or if there is no negation, then interpretation is straightforward, with SUBJ having the pressure interpretation, and the subject NP must again be a dummy. In each case the interpretation of the dummy subject falls within a range specified by what kind of sentences we are dealing with, and what the semantic environment is in which the sentence is being used (c.f. example (130) in this section).

While there is a considerable degree of idiosyncrasy involved in the interpretation of the why- and why not- constructions, there also seems to be sufficient motivation for believing that they are related to imperatives and subjunctives. The interpretation of the why not-sentences as questions concerning the source of the pressure provides some corroborative evidence for the analysis of imperatives and related constructions earlier in section 1.5.

1.5.2.3. Question-imperatives and tagged imperatives.

In this section I am going to discuss two constructions which are related to the simple imperative: the question-

imperative, and the tagged imperative. The discussion here will have to do primarily with the interpretation of these two kinds of sentence. In 1.6 I will consider question-imperatives and tagged imperatives from the point of view of their syntax.

Jespersen (1961, V,24.3.8) remarks that "a request can be expressed in various other ways than by means of an imperative, thus very frequently in the form of a question: 'Will you post this letter for me (please)!'" Here are some more examples of what Jespersen is referring to.

(139a). $\left\{ \begin{array}{l} \text{Will} \\ \text{Won't} \end{array} \right\}$ you please eat your spinach.

(139b). Would you get off my foot please.

(139c). Can you give me a hand please.

(139d). Could you tell me where Moscow, Iowa is please.

(139e). $\left\{ \begin{array}{l} \text{Couldn't} \\ \text{Can't} \end{array} \right\}$ you open the window please.

(140a). Will all of the contestants please clear the stage.

(140b). Won't everyone please sit down and talk.

(140c). Would the ladies in the audience please cover their ears.

(140d). Could the parents of little Billy Poobah please come to the lost and found and reclaim him.

(140e). Couldn't the painters do the kitchen tomorrow, please.

(140f). Wouldn't your son help me with the snow,
please.

Similar sentences with other modals are ungrammatical.

(141). { *Must
Mustn't
May
Might
Shall
Should
Shouldn't } you please let me in to see the boss.

Although the sentences of (139) and (140) bear the syntactic form of questions, as Jespersen observes, they differ from questions in several ways. First, they may be conjoined with simple imperatives, while questions cannot.

(142a). Waiter, will you bring me a glass of water, and please don't worry about the fly in my soup -- it's dead.

(142b). *Will John give me \$70 for my Edsel and please wipe that ugly leer off your face.

Second, although questions may be conjoined, sentences of the type in (140) and (141) may not be, as illustrated below.

(143a). Are you or have you ever been a child?

(143b). Can John and will John fix the sink?

(144a). ?Will you or won't you please sit down.

(144b). ?Could you or would you kindly give me a dime
for a cup of coffee,

I have marked the examples in (144) with "?", because their acceptability is very much like that illustrated in (145).

(145). ?John, please sit down and please sit down.
That is, examples like (142) and (143) are redundant: the same request is made twice in a single sentence. The unacceptability of the examples in (144) confirms our intuition that as requests they are very close in meaning, regardless of what modal appears, or whether there is negation or not on the modal.

For the sake of convenience let us call imperatives which have question form "question-imperatives". While our intuition tells us that question-imperatives and simple imperatives have the same interpretation, there are nevertheless some interesting differences which should be mentioned. Notice, for example, that while negation is given a negative interpretation in simple imperatives with the modal do, the negative element which contracts onto the modal in question-imperatives is not interpreted as negation.

(146a). Don't leave until four o'clock.

(146b). *Won't you please leave until four o'clock.

(147a). Don't you budge an inch.

(147b). *Can't you budge an inch, please.

(148a). Don't do anything suspicious at all.

(148b). *Won't you do anything suspicious at all,
please.

We see that in contexts which demand that negation be interpreted negatively the contracted negative in the b-sentences above are non-negative. In order for such sentences to be grammatical it is necessary to introduce another negative element in a position in the sentence where it will be interpreted as negation.

(149a). Won't you please not leave until four o'clock.

(149b). Can't you not budge an inch, please.

(149c). Won't you please not do anything suspicious at
all.

If the sentence lacks n't then this position after the subject must nevertheless be occupied by negation in order for the sentence to have a negative interpretation. Clearly if contraction does not take place then we will get sentences like (146b)-(148b).

(150a). Will you please not leave until four o'clock.

(150b). Can you please not sing so loud.

(150c). Could you not park your bicycle in my bathroom.

(150d). Would you please not be so complacent.

One might then inquire as to whether the sentences of (150) differ in interpretation from those of (149), and whether there is any difference in interpretation depending on the choice of modal. I believe that there is a difference in

interpretation depending on the presence of negation and the choice of modal, and that this difference has to do with the relative politeness of the imperative.

Although judgements will vary to some extent, it is possible to order the sentences in some hierarchy of politeness. To my mind the sentences below are ordered in terms of increasing relativeness politeness.

(151). { Can't
 Couldn't
 Can
 Will
 Would
 Could
 Won't } you get me a cup of coffee.²⁸

It is not immediately obvious why it should be that the question form is used with an imperative interpretation, and that the precise interpretation of the question-imperative differs from the interpretation of the simple imperative as it does. It is interesting to note, in any case, that the same differences are apparent when the imperative is tagged. That is, the tagged imperative can only have one of the modals which appear in (151), and the precise form of the tag, i.e. which modal it contains and whether it has negation or not, determines the relative degree of politeness which we may attribute to the utterance. Observe also that if negation is

present in the tags then the sentence lacks a negative interpretation, unless there is negation in the imperative.

(152). Get me a cup of coffee, { can't
couldn't
can
will
would
could
won't } you.

We note that the modals which clearly are unacceptable in the question-imperatives are also quite unacceptable in tagged imperatives.

(153). *Please let me in to see the boss { must
mustn't
may
might
shall
should
shouldn't } you.

1.6. Question-imperatives and tagged imperatives revisited.

In order to show how question imperatives and tagged imperatives bear on our hypotheses, it is necessary to show that there are syntactic generalizations which can be captured here, and that failure to adopt the strong version of the Hypothesis II will lead to the failure to capture these generalizations.²⁹

I will discuss the syntax of these constructions, and the ways in which violation of the strong version of the Hypothesis II will lead to the loss of certain generalizations. In 1.7. I will consider this kind of violation of the strong version of the Hypothesis II as it is manifested in two proposals, and I will show how they entail loss of generalization in other parts of the grammar than the one considered here.

For the sake of argument I am going to ignore for the time being the analysis of imperatives which I gave in 1.3.2. and which I believe to be essentially correct. I will make the assumption here that the deep structure of question-imperatives and tagged imperatives is substantially identical to that of imperatives, and show how this leads to serious problems with the analysis.

(154a). Open the window, $\left. \begin{array}{l} \text{will} \\ \text{won't} \end{array} \right\}$ you.

(154b). ?Do open the window, $\left. \begin{array}{l} \text{will} \\ \text{won't} \end{array} \right\}$ you.

(154c). *You open the window, $\left. \begin{array}{l} \text{will} \\ \text{won't} \end{array} \right\}$ you please.

(154d). Don't open the window, $\left. \begin{array}{l} \text{?will} \\ \text{*won't} \end{array} \right\}$ you.
Do not

(154e). Don't you open the window, $\left. \begin{array}{l} \text{*will} \\ \text{"won't} \end{array} \right\}$ you.

(155). $\left. \begin{array}{l} \emptyset \\ \text{do (not)} \\ \text{don't (you)} \end{array} \right\} \text{open the window} \left\{ \begin{array}{l} *do \\ *don't \end{array} \right\} \text{you.}$

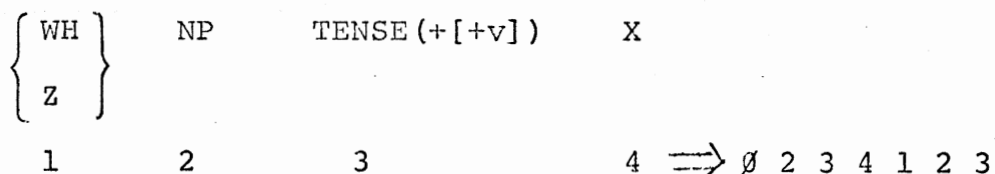
There are several generalizations which can be stated with respect to imperatives with tags and question imperatives. First of all, inversion applies to both. Second, the class of modals which are acceptable for one is the class which is acceptable for the other. That is, there is no modal such that it can appear in a question imperative but not in an imperative tag, or vice versa. Third, the distribution of negation in the tagged imperatives appears to be the same as the distribution of negation in tag questions, i.e. at most one negative element may appear. This is pointed out by sentences like (154d) and (154e).

It was believed up until recently³⁰ that since tag formation in questions copied the modal from the AUX into the tag, postulating an underlying modal in imperatives would enable us to derive tagged imperatives without adding any new rules to the grammar. Let us suppose that this is the case.

We must postulate, first of all, that in the deep structure of imperatives there is an element, which, when copied by tag formation, will cause inversion. Let us call this element 'Z'. In chapter II we will show that tag formation and inversion apply in the environment of the morpheme WH. Z has the same properties as WH with respect to tag formation and inversion. The tag

formation rule will look something like (155).

(155). Tag formation (strawman):



It can be seen that as it stands this analysis is not satisfactory, since it does not explain how the modal to the left of the tag is deleted. Application of (155) to (156a) will give the ungrammatical (156b).

(156a). Z you will eat the pie.

(156b). you will eat the pie Z you will

*you will eat the pie, will you³¹

There appears to be no way to get out of this difficulty, while preserving the generalization that only one tag rule derives all tags. One might wish to say, for example, that if (155) applies when Z is present, the third term of the structural description is deleted by the rule, as well as the first. Any such change would mean, however, that the rule which formed tags in the case of imperatives was no longer the same rule as the one which formed tag questions. So then the generalization that tagged imperatives were derived from imperatives with underlying modals by the standard tag question formation rule would have to be given up.

Another possibility which suggests itself is that the deep structure of such sentences contain two markers, one of which would go into the tag by tag formation, and the other

of which would remain behind in the imperative part of the sentence and cause the various deletions which might be required. The natural candidates for the first morpheme is WH; let us again call the second morpheme 'Z'. A typical derivation might then be as follows.

- (157). Z WH you will smile
Z \emptyset you will smile WH you will /tag formation
Z \emptyset you will smile WH will you /inversion
Z \emptyset you will smile WH will you /deletion
"smile, will you."

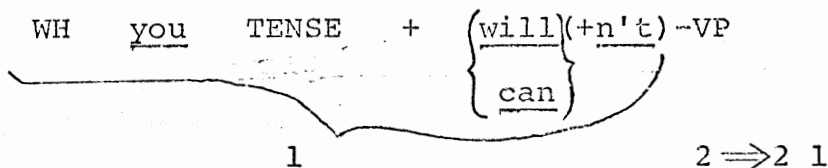
The deletion of you and will is caused by the presence of Z. We will see in 1.7 that Z has the syntactic properties imputed to the morpheme I suggested by Katz and Postal (1964). There we will conclude that an I with the syntactic properties which K-P attribute to it leads to a loss of generalizations, while an I with any semantic properties is unmotivated. On this basis alone I think we can rule out the analysis of (157), but the reader should confirm our conclusions in 1.7 for himself.

An additional factor is that WH in this analysis can have no semantic properties whatsoever, since they would conflict with the imperative interpretation of tagged imperatives. If WH did have such properties, then for yes-no questions we would have to resort to a morpheme Q, which is the counterpart of I for questions, in order to account for the interpretation. As we will show in 2.4.1, an analysis with Q is unacceptable.

Since SUBJ is not realized phonetically, it is not impossible that such a confusion might arise.

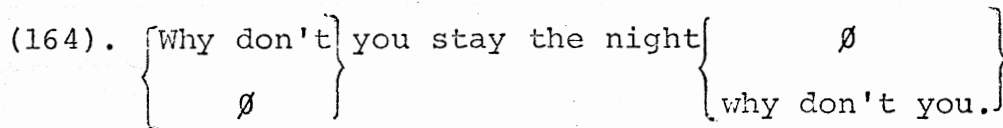
We are now in a position to derive the tagged imperatives by means of a VP-fronting rule. If this rule follows neg-contraction, then we can account for the fact that negation only appears in the tag, and when it does, it is also contraction. We must specify that the element immediately to the left of the VP cannot be not at the time the rule applies.

(163). Imperative VP-fronting (optional):



It has been suggested to me that this rule can also be extended to cases in which the form of the sentence is a question but the interpretation of the suggestion is a polite imperative.³²

An example which illustrates this is the following.



While it is difficult to see how we would formally represent the fact that this transformation does not apply unless the interpretation of the sentence is that of an imperative.

Nonetheless, it appears that this is in fact what is going on, however it is to be represented.³³

The fact that questions and question-imperatives are derived from the same deep structure means that if Imperative

VP-fronting fails to apply then either interpretation may be assigned to the sentence, with the restriction that the sentence must meet the conditions for Imperative VP-fronting in order for the imperative interpretation to be assigned. This is true even if fronting does not apply.

What has been shown here is that there is a construction for which there are certain aspects of the interpretation that cannot be determined in deep structure. One of the most striking characteristics of question-imperatives is that they are formally indistinguishable from yes-no questions. Consequently there is no syntactic motivation for saying that the deep structure of a question-imperative differs in any way at all from the deep structure of a yes-no question. So, while a deep structure difference would account for the difference in interpretation in just the same way that an optional rule of interpretation would, such a deep structure difference would at best have no effect on the grammar, and at the worst would complicate the rules and result in the loss of significant syntactic generalizations.

Next we will show how the superficially plausible deep structure accounts of the difference in interpretation between yes-no questions and question-imperatives are essentially equivalent to an approach which we will argue is unsatisfactory if extended to the full range of data that we consider in Chapter I, and in Chapter II.

1.7. Some other proposals for deriving the imperative.

1.7.1. Katz and Postal (K-P)

Katz and Postal (1964) propose that the deep structure of all imperatives contain a morpheme I which forms part of the environment for the rule which forms imperatives. According to K-P, I has "a dictionary entry that represents it as having roughly the sense of 'the speaker requests (asks, demands, insists, etc.) that'." (p.76).

One objection to this analysis involves the fact that there are sentences which, while they have the force of imperatives, do not share the imperative syntax. This has been observed before, in section 1.5.2.1, in connection with orders. Green (1968) has presented similar examples to show that requests may also take a myriad of different forms. If these sentences do not contain I, then there is no particular semantic reason that imperatives should. If these sentences do contain I, then the very specification of the contexts in which I may appear (i.e. selection restrictions) will have to make use of rules which will tell us where imperative interpretations are possible, thus making I superfluous.

This leaves the possibility that I is a syntactic marker only. In order to derive the various surface forms of the imperative, I will have to be treated like our SUBJ. Since K-P do not derive all the possible variants of the simple imperative, it is impossible to say whether this can be done

using I as they do, as a sentence-initial morpheme. However, it is possible to comment on K-P's use of I for the sentences that they do derive.

K-P describe the imperative transformation as follows:

"The imperative transformation, which applies obligatorily to any P-marker containing the imperative morpheme, drops this morpheme and, optionally, drops the string you Present will or just the string Present will" (p.78-79). The presence of Present will in the deep structure of imperatives is motivated by the tag will you, which may appear with imperatives (p.75). However, we have observed in section 1.5.2.3 that other modals may appear in the tags of imperatives, and that differences in the form of the tags can be associated with differences in politeness in the interpretation.³⁴

The K-P analysis rules out the generalization between imperatives and pseudo-imperatives. Much of this chapter has been devoted towards showing that this generalization is a real one which the theory of grammar should force us to capture. There is a way in which the K-P approach could be modified to capture this generalization. Imperatives could be derived from the same source in deep structure as pseudo-imperatives. This is what I have been proposing, in fact. For the K-P approach to maintain the use of I, however, pseudo-imperatives and imperatives would have to be derived from structures with underlying I. This would predict that pseudo-imperatives could have tags with will.

(165a). Hit me and I'll hit you back.

(165b). Hit me, will you, and I'll hit you back.

While (165a). is ambiguous between a pseudo-imperative and the conjunction of an imperative and a declarative, (165b) can only have the latter interpretation. Hence I cannot appear in both constructions without preventing tag formation in pseudo-imperatives in an ad hoc fashion. If I is not in both deep structures then the generalization about you-deletion is lost, unless I is in neither, or you-deletion is accounted for in some other way which makes no reference to I. I would conclude, then, that the K-P imperative transformation is not to be preferred over an approach which permits the generalization of you-deletion in a natural way.

1.7.2. The abstract performative hypothesis.

In a footnote to their discussion of imperatives K-P suggest that it is likely that "a case can be made for deriving imperatives syntactically from sentences of the form I Verb_{request} that you will Main Verb by dropping at least the first three elements." (p.149, fn.9). Indeed such a case has been made by Ross, although at the present time his arguments remain unpublished. Arguments similar to Ross's appear in R. Lakoff (1968a) with evidence from Latin syntax.

The keynote of the abstract performative analysis is that underlying every non-performative sentence of the language is a performative pro-verb. Hence an imperative would have the underlying form of (166), roughly.

(166). I [IMPERE
+PRO
+Performative
+Linguistic
:
:
:] YOU_S [you VP]

Nothing concerning the syntactic rules which would be required to derive the various imperative surface structures from (166) has ever been published, so it is impossible to comment on the extent to which syntactic generalizations can be captured by an approach such as this without making certain assumptions about the analysis which might not be agreed to by proponents of this approach. Since the burden of proof is on those who propose that such an approach will work, we may reserve comment until the details of the analysis are forthcoming.

The basic motivation behind (166) is the fact imperatives have the same co-occurrence restrictions as do the complements of verbs like order, request, etc. I believe, however, that the same arguments against I can be used to argue against IMPERE. It is not necessary to repeat the arguments here. The reason why the same arguments hold should be stated, however.

IMPERE, being a syntactically stronger hypothesis, shares I's shortcomings at the semantic level. What the IMPERE

hypothesis is really claiming is that I, instead of being a shapeless deep structure morpheme, previously having no particular syntactic properties to relate it to any real morphemes, should now be considered to have the following syntactic properties: it is a verb, it takes the same complements as order does, it is [+Pro], and it is a performative. This in no way changes the semantic arguments against the hypothesis, although it may make it more easily falsifiable on syntactic grounds.

There is some evidence that the subjects of imperatives and the subjects of complements of verbs like order, request do not coincide completely. This is a difficulty for the IMPERE hypothesis, since the need for assigning different syntactic features to IMPERE, on the one hand, and to all the real verbs, on the other hand, casts doubt on the motivation for IMPERE. IMPERE captures no generalizations if the difference between imperatives and complement sentences is translated from a structural difference into another representation, like a syntactic feature or a selection restriction on an abstract verb. It must be shown that this difference between imperatives and complements is captured in a more natural and principled fashion by having IMPERE rather than a well-formedness condition on interpretations.

The evidence for claiming that this difference exists is found in (167)-(169).

(167a). I { command } that the person who is staring
 { order }
 { request }
 { suggest }

vacantly at me stare vacantly elsewhere.

(167b). I { command } that the armed forces induct
 { order }
 { request }
 { suggest }

the first-born of every family.

(167c). I { command } that the committee have its
 { order }
 { request }
 { suggest }

records examined by a reputable accountant.

(167d). I { command } that the police shoot every
 { order }
 { request }
 { suggest }

jaywalker on sight.

(168a). I { command } the person who is staring vacantly
 { order }
 { request }
 { warn }

at me to stare vacantly elsewhere.

(168b). I { command } the armed forces to induct the
 { order }
 { request }
 { warn }

first-born of every family.

(168c). I { command } the committee to have its records
 { order }
 { request }
 { warn }

examined by a reputable accountant.

(168d). I { command } the police to shoot every jaywalker
 { order }
 { request }
 { warn }

on sight.

(169a). *The person who is staring vacantly at me stare
vacantly elsewhere.

(169b). *The armed forces induct the first-born of every
family.

(169c). *The committee have its records examined by
a reputable accountant.

(169d). *The police shoot every jaywalker on sight.

1.8. Summary

The goal of this chapter has been to establish the basis
for a meaningful distinction between syntax and semantics. I

have tried to show that there are different kinds of considerations involved when discussing syntactic transformations and rules of interpretation. The kinds of violations which occur can be sharply distinguished for the most part. From sections 1.1 to 1.4 I discussed what considerations were relevant to a syntactic description of the data involving imperatives, and I tried to give some clear motivations for deep structures and transformations, i.e. for considering certain phenomena syntactic. Generally, the criterion which plays the greatest role here is whether a rule, if it existed, would apply to sentences with a single type of interpretation or whether it would apply to sentences whose interpretations differed significantly with respect to the rule.

In section 1.5 I attempted to provide a plausible explanation for a number of cases of unacceptability which could not be accounted for in terms of the syntactic description given previously. The basic consideration for choosing a "semantic" rather than a "syntactic" approach to these cases is as follows: while it was possible to account for the cases of unacceptability in question by maintaining the syntactic description given in 1.4 and appealing to independent facts about interpretations, an attempt to account for these cases in the syntax would have complicated the required syntactic description, but it would not have simplified the semantics.

Footnotes to Chapter I

1. The identical subscripts under the various noun phrases in these examples indicate that the noun phrases are coreferential. (1a) and (1b) are starred only if the NP's in question are so related. In other words, the correct interpretation of (1a) and (1b) necessarily is that the object NP refers to a different person than the subject NP, provided that we ignore the subscripts.
2. For discussion concerning a superficially identical, but grammatical, construction, see Dong (1969).
3. These arguments can be found in Chomsky (1955) and in Katz and Postal (1964).
4. There are alternative ways of treating these phenomena. For example, one could generate imperatives as sentences with dummy subjects, and then supply the you subject by means of an "interpretive" rule. It is not clear that such a method differs substantively from a transformational treatment. Since an interpretive approach to imperatives entails, at the very least, a different way of discussing pronominalization, reflexivization, and numerous cases of NP deletion. In order to maintain consistency, I prefer to continue to make use of a more familiar framework. For the material at hand I suspect that the difference will be a stylistic one only, and that any choice between the two approaches, if they are different, will have to be made on the basis of material from elsewhere in the language.
5. This restriction might also appear to be an example of a more general constraint discussed by Perlmutter (1968, Ch.5). It prevents any deletion of movement transformation from applying to the subject of an embedded sentence which is syntactically a sentence. Note sentence (i) -

(i). Who did you say (*that) saw Bill?

- which is an example of this constraint where the subject is not you. Since you-deletion applies only to subjects, it could not apply in such cases.

However, the that-complementizer may delete in some embedded sentences which, we will show, have the imperative syntax and share much of the imperative reading. Even when the that-complementizer deletes, the you-subject still cannot delete, a fact which Perlmutter's constraint does not account for

Footnotes to Chapter I Continued

- (iia). I demand that you go.
- (iib). I demand you go.
- (iic). *I demand go.
6. The term "pseudo-imperative" was coined by Jespersen (1961, V, 24.3.1.) to refer to sentences which look like imperatives but which do not have the imperative interpretation. I will use this term here to refer to sentences which are of the general form Imperative and Declarative. The sentences in (ii) are examples of this construction.
7. It will be noted that the interpretation of (29a) is considerably different from the interpretation of pseudo-imperatives and the conditionals which correspond to them semantically. The point which I am trying to make here is that a rule like (26), being a formal operation, will not care much what a sentence means, and it will apply to (29a) to give the ungrammatical (29b). The only way to prevent (26) from applying to give (29b) is to suppose that underlying (29a) is a deep structure which does not meet the structural description of rule (26). I would certainly not attempt to propose such a deep structure just to show that there are two separate rules of you-deletion, since this would mean the loss of two generalizations: 1) that there is one rule of you-deletion, and 2) that there are a number of different interpretations of the if-then construction. If we proposed a deep structure which does not involve if-then, we will be at a loss to explain the curious fact that the surface structure of (29a) and of sentences with far different interpretations, all are of the form if...then.... That is, syntactically they are all the same, and this generalization can be captured at the level of deep structure.
8. c.f. Ross (1969c) for discussion of the phenomenon of pronominalization and its relationship to the presence of subordinate clauses.
9. Thorne (1966).
10. Rule ordering ensures that Y is not a verb, so that supportive do will be inserted in cases where some earlier rule has prevented TENSE from attaching to the verb by affix-hopping. This will occur if EMPH(asis) or NEG(ation) immediately follow TENSE, if TENSE has been moved away from the verb by inversion, and where the verb has been deleted, leaving TENSE unable to attach to it.

Footnotes to Chapter I Continued

11. It seems reasonable to place a constraint on this rule to the effect that both element 1 and element 3 of the structural description must be dominated by the same S-node in order for the structural condition to be met. This constraint would follow, in fact, from Chomsky's general constraint that material cannot be inserted by transformations into sentences which have already been cycled on, which we will discuss further in section 2.3.1.

12. The presence of do in (52a) is due to a special case of do-insertion which is to be handled individually, and which shows up only when SUBJ is present. Observe that this is the only environment where this can take place.

(iia). *Bill didn't be a policeman.

(iib). *Harry doesn't be quiet anytime.

Notice that do may also show up in the following cases, which contain SUBJ.

(iia). John was unable to play first violin, so I'm requesting that you do.

(iib). Just as it's important that Harry see this film, so it's necessary that everyone else do, too.

(iic). I order that everyone get out of the pool, and I demand that you do, too, Bobby Poobah.

Because of the fact that sentences like those in (ii) are not found equally acceptable by all speakers, it might be that this is a case in which the function of a rule (do-insertion in imperatives) is being analogized to sentences which are semantically similar. Notice that if the subject is not you this type of sentence is far less acceptable.

(iiia). *John was unable to play first violin, so I'm requesting that Harry do.

(iiib). *Just as it's important that Harry see this film, so it's necessary that Bill do, too.

(iiic). *I prefer that you leave now and that Bill do tomorrow.

13. Ross has argued (personal communication) that one's efforts should not be devoted to constructing transformational analyses for bodies of data as limited as the imperative.

Footnotes to Chapter I Continued

Ross correctly notes that this section treats six different surface structure patterns which may be referred to as "imperatives". I have interpreted his conclusion to be that any attempted analysis in terms of transformations will be doomed to be unconvincing, simply because there are, presumably, an unlimited number of alternative analyses which will give the correct surface structures.

If it were the case that the only surface structures found in the English language were these six, then conceivably Ross's argument might carry some weight, although it is not immediately obvious to me that this is so. However, one of the goals of this thesis is to provide analyses which not only work, but which also, hopefully, cast some light on the structure of the language. One approach to this goal, I believe, is to show that given two solutions, one involves rules which merely work, and the other involves rules which do work for one, i.e. their range is not limited to the data which originally motivated them. In later portions of this thesis I show how most of the rules which I discuss in this section have a more general application.

14. Further discussion of EMPH, and negation in this respect can be found in Chomsky (1957), Chomsky (1964c).
15. "[+v]" represents the class composed of the modals, supportive do (from (61)) and TENSE.
16. Examples such as the ones presented here were discussed by G. Lakoff (1966), who observed that the feature [stative] was relevant to both verbs and adjectives. Chomsky (1968) also observed that sentences are possible which contain predicate nominatives that are stative.
17. The acceptability of such sentences with temporal by-phrases will be discussed in section 1.5.1.2. along with the interpretation of the perfect imperative, which shares some semantic characteristics with statives.
18. It is not even universal to all languages, since there are acts which speakers of some languages can do which speakers of others cannot do. For example, I cannot reasonably expect a speaker of English to be able to say something in Tibetan, while I can reasonably expect a speaker of Tibetan to say something in Tibetan.
19. This deep subject may be a dummy NP in the deep structure. For a fuller discussion of deep structure dummy NP's see Chomsky (1965), Emonds (forthcoming), and Jackendoff (1969b).

Footnotes to Chapter I Continued

20. There is a slight difference here, in that an expected or desired event can be past time with respect to the time at which the expectation or desire is reported.

(i). Bill expected you to go yesterday.
 wanted

The precise interpretation, then, is that the event must be non-past with respect to the time at which the expectation or desire "occurred". In the case of imperatives this time coincides with the utterance of the sentence.

21. For some discussion of the semantic relationships which may exist between subject, verb, and object, see Gruber (1965), Gruber (1967), and Jackendoff (1969b).

Perlmutter (1968, 2.3) has made a proposal which seems particularly relevant in light of the semantic description given here. Briefly, his proposal is that in the deep structure of a passive whose derived subject has an agentive interpretation is a verb like get. Such a deep structure would mirror to some extent the semantic structure of the sentence, since the subject of get is always interpreted as an agent. Perlmutter's proposal also involves the deletion of this verb, so that the surface structures of sentences like those in (90) can be generated.

The main problem with Perlmutter's proposal is that it involves too many sentences. That is, there are difficulties which arise from the fact that get appears in a sentence which dominates the sentence in which the passive takes place.

(i). S [you get S [the washerwoman see you]]

If we bring in negation, we find that it can go either in the sentence with get or in the one below.

(ii). S [neg you get S [the washerwoman see you]]

(iii). S [you get S [neg the washerwoman see you]]

There are two possibilities with respect to (ii) and (iii). Either both end up as (iv), or only one ends up as (iv), then it must be (ii), since (ii) is the sentence which most accurately represents the interpretation of (iv). In this case, (iii) either is blocked, or gives a surface structure

Footnotes to Chapter I Continued

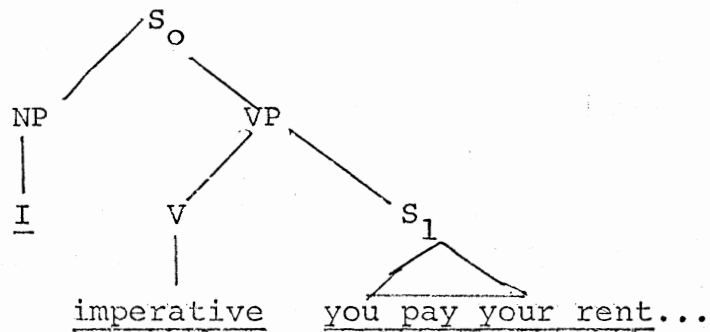
that is different from (iv). There is no apparent reason why (iii) should block, since it is structurally identical with (i). Therefore it must be that (iii) results in a surface structure different from (iv). I am at a loss as to what this might be, however.

22. For a discussion of performatives from various points of view, see Austin (1962), Ross (to appear), Anderson (1969), Fraser (1969).

23. personal communication

24. Actually, this statement is not quite accurate, since there exists the possibility that the real deep structure of a sentence like (108c) is (i) below.

(i).



This deep structure would undergo the so-called "Flip" or "Psych-Movement" transformation (c.f. Postal (1969b)) and end up like (108a). By doing this we would be able to say that subject complements may only be generated as objects.

Chomsky has pointed out (personal communication) that the output of the Flip transformation does not mean what we would expect it to mean from looking at the input. Consider what happens if we make (i) the complement of a verb like believe or consider.

(ii). *I {believe / consider} that I imperative you to pay your rent.

(iii). I {believe / consider} that it is imperative for you to pay your rent.

Presumably (ii), while clearly ungrammatical, is intended to have an interpretation similar to (iv).

Footnotes to Chapter I Continued

(vi). I { believe } that I require you to pay your rent.
 { consider }

However, (iii) does not have this meaning. It means rather something like "I consider that the property 'imperative' holds in the case of your paying your rent." It is not clear, therefore, what generalization the Flip transformation would serve to capture.

25. See Rosenbaum (1967) for an extensive treatment of complement structures in English. Jackendoff (1969b, Ch. 3) presents an alternative approach to the data.

26. Consider the semantically related use of the verb wants.

(i). This muffler wants to be replaced.

(ii). This house wants painting.

Although it might be thought perhaps that this use of want is the same as to be wanting, which is synonymous with to be lacking, the examples below indicate that want bears the notion of "need" which lack does not.

(iii). Your house { *lacks } a new paint job, or the
 { wants }
 wood will be rotten by the spring.

(iv). This town { lacks } a new city hall, but it
 { *wants }
 doesn't really need one.

In the same way a subjective judgement can be metaphorized to apply to external, abstract circumstances.

27. One can try to force oneself to do something, for example.

28. I have omitted any examples with wouldn't, since it seems to be only marginally acceptable and hence very difficult to make judgements about relative to the other modals. If it is acceptable, however, then on the basis of remarks by informants we should place it somewhere between won't and would in (151).

29. The weak version of the Hypothesis I, it will be recalled, is that all syntactic generalizations can be captured without recourse to semantic consideration, and the Hypothesis II is that we cannot capture certain generalizations if we represent certain kinds of semantic information in the deep structure as part of the phrase marker.

30. c.f. Klima, (1964), Katz and Postal (1964).
31. This is ungrammatical as an imperative, but has a nonimperative reading in which it is acceptable.
32. David Vetter, personal communication.
33. Another area into which this rule might be extended involves sentences like the following.

- (ia). Step on my toes, will he? (We'll see about that!)
- (ib). Sit on the back seat, should I? (We'll see about that!)
- (ic). Take away my teddy bear, will you? (We'll see about that!)

Here again it seems that a rule of verb phrase fronting is applying, but with one significant difference, as the examples below demonstrate.

- (iia). Not read the book, will he?
- (iib). Not phone my sister, did you?
- (iic). Not let me know what time it is, will they?
- (iiia). *Step on my toes, won't he?
- (iiib). *Sit in the back seat, shouldn't I?
- (iiic). *Take away my teddy bear, won't you? (We'll see about that!)

These examples show that, in comparison with the examples of imperatives, if the sentence lacks the imperative interpretation then negation cannot appear in the "tag", but then again, it may appear to the left of the tag. It would seem, therefore, that there are in fact two rules, one of which, (163), applies after neg-contraction, and the other of which applies before it. This second rule is stated below.

- (iv). Question VP-fronting (optional):

WH	X	VP	
1	2	3	\Rightarrow 3 1 2

Condition: This is a root transformation.

There are a number of small details which must be worked out concerning this analysis. A problem arises when the AUX contains progressive or perfect aspect, or past tense. Since the rule mentions VP, we must ask if VP is V-X or V+Affix-X. The following sentences illustrate the distinction.

- (va). $\left\{ \begin{array}{l} \text{Take} \\ \text{Took} \end{array} \right\}$ my teddy bear, did he?
- (vb). $\left\{ \begin{array}{l} *See \\ Seen \end{array} \right\}$ my brother, have you?
- (vc). $\left\{ \begin{array}{l} *Go \\ Going \end{array} \right\}$ to Coney Island, are you?

From examples (vb) and (vc) we conclude that Affix-hopping (c.f. Chomsky (1957)) precedes rule (iv). However, example (va) with take is possible only if the rule applies before affix-hopping, and (va) with took is possible no matter what the rule ordering is. To see this, consider the two possible deviations.

1. WH you Past ^{VP} take X
 WH you _{VP} [take+Past X] /Affix-hopping
 [take+past X] WH you /Question VP-fronting
 VP
 "*took my teddy bear, you."
2. WH you Past ^{VP} [take X]
 VP [take X] WH you Past /Question VP-fronting
 VP [take X] WH do+Past you /do-support; Inversion
 "take my teddy bear, did you?"

Since the second ordering above will generate the starred examples in (vb) and (vc), we may draw one of several conclusions. It may be the case that rule (iv) is a spurious generalization, and the sentences considered here ought to be derived by some other analysis. Possibly the analysis of Affix-hopping is incorrect, and should be revised to account for these sentences. Or it may be that none of the examples are grammatical.

My feeling is that rule (iv) is not a true generalization. A solution which derives the examples we have been considering

Chapter II

2. Yes-no questions and tag questions.

2.1. The goals of the chapter.

Fundamentally, this chapter has three goals, each of which operates on a particular level. I will be dealing almost exclusively with what have been called "yes-no questions" and "tag questions". On the syntactic level my goal will be to establish the deep structures from which these constructions are derived and the transformations which are used to derive them. On the semantic level I will be concerned with establishing the distinctive aspects of the interpretations corresponding to such constructions and providing some notion of the rules of interpretation required. On the level of general theory I will be concerned with showing that there is a striking lack of isomorphism between the well-motivated deep structures for the sentences considered and their interpretations. The implication of this for linguistic theory is that any attempt to make the relationship between deep structure and interpretation an isomorphic one will result in a failure to capture the significant syntactic generalizations which are entailed by the data.

As in Chapter I, the general format will be as follows: first, a summary of the syntax; second, some discussion of the interpretations; third a summary of the relationship between the syntax and the semantics of the construction under discussion.

2.2. Yes-no questions

2.2.1. Some transformations

A rule which is central to the derivation of yes-no questions is Inversion. What the rule does has been generally agreed upon by writers in the field of generative grammar since Chomsky (1957) first stated it. However, the conditions under which inversion applies have often been the subject of discussion.

Chomsky's original inversion rule was as follows:

(1). T - optional¹ (Chomsky (1957))

NP - TENSE (+ $\left. \begin{array}{l} M \\ \text{have} \\ \text{be} \end{array} \right\}$) - X

1 2 3 \Rightarrow 2 1 3

Notice that there are no conditions on this rule other than those stated in the structural condition, which are, essentially, that in order for inversion to apply, the elements which invert must be present. In particular, the application of this rule is independent of any deep structure morpheme like WH, Q, or the pro-verb question (see below). In Chomsky's analysis, inversion was completely optional, and NP-fronting, which I will not repeat here, applied after T_q had applied, and was dependent on it. That is, if inversion hadn't applied, the NP-fronting rule, which applied to WH-words, could not apply. This analysis depends crucially on the principle that a noun phrase may not become WH if it is not fronted, thus guaranteeing that all WH-noun phrases will be in sentence initial position.

aux¹ (i.e., TENSE (+ $\left\{ \begin{array}{l} \text{Modal} \\ \text{have} \\ \text{be} \end{array} \right\}$)) to attract to. Second, WH

was generated in the base, and not derived transformationally. Yes-no questions, for Klima, occurred when the optional term following WH in (3) was absent.

Katz and Postal observed that Klima's analysis assumed that one could have only one WH in any sentence. As counter-examples to this they point out sentences like the following (K-P (1964), pg. 91, examples (95) and (96)).

(4a). Who did what to whom.

(4b). What did who do what.

K-P go on to postulate an underlying morpheme Q which has the semantic properties of 1) giving the correct reading to questions and 2) correctly relating the question reading to inversion. For K-P, then, Q accounts for the selectional properties of questions and takes over the role of causing inversion in questions. The K-P rule of inversion is stated in terms of sentence-initialization Q, and not sentence-initial WH, as does the rule of Klima's.

(5). T2: (KP (1964))

$$\# + Q - X - NP - TENSE + \left\{ \begin{array}{l} \emptyset \\ \text{have} \\ \text{be} \\ \text{Modal} \end{array} \right\} - \left\{ \begin{array}{l} \text{Verb} + Y \\ Y \end{array} \right\}$$

1

2

3

4

5

\Rightarrow 1 2 4 3 5

Condition: 2 dominates WH

Rule (5), it can be seen, is substantially identical to rule (1), with the difference being that the latter does not mention "# + Q" as part of the environment. The inclusion of this term makes inversion obligatory, in a sense, since it cannot apply unless Q appears in the deep structure. On the other hand, Q is generated optionally by the base, and so the optionality of the process is disguised, rather than eliminated. However, K-P argued that introduction of Q into the base was more than a method for eliminating the optionality of a transformation, since obviously such a notational maneuver will in itself have no empirical significance. In fact, K-P attempted to show that with Q one was able to capture significant generalizations about the kinds of sentence with which they were dealing. Thus the consequences of postulating a Q (or a similar device) in the deep structure are not trivial, since one is making certain claims about the way certain sentences are derived, the way they are related to other sentences, and the kinds of interpretation which are possible for sentences which contain Q. We shall return to a discussion of just this kind of problem in 2.4.

In the remaining part of this chapter I will refer to the rule which causes the inversion of subject and auxiliary as "Inversion". Since it is quite clear that inversion does indeed

(7c). Do you like pizza.

(7d). $\left. \begin{array}{l} \text{Will} \\ \text{Must} \\ \text{Can} \\ \text{Should} \end{array} \right\} \text{you lock the door.}$

Another rule which is of great interest to us here is "neg-contraction". This is an optional rule which attaches not to a modal or TENSE and changes it into n't.

(8). neg-contraction:

TENSE (+ $\left. \begin{array}{l} \text{M} \\ \text{have} \\ \text{be} \end{array} \right\}) - \underline{\text{not}}$

1

2 \Rightarrow 1 + n't

Neg-contraction gives sentences like those in (9).

(9a). John isn't $\left. \begin{array}{l} \text{a truckdriver.} \\ \text{ready.} \\ \text{coming home.} \end{array} \right\}$

(9b). You haven't $\left. \begin{array}{l} \text{any bananas.} \\ \text{seen the movie.} \end{array} \right\}$

(9c). You don't like pizza.

(9d). You $\left. \begin{array}{l} \text{won't} \\ \text{musn't} \\ \text{can't} \\ \text{shouldn't} \end{array} \right\} \text{lock the door.}$

This analysis of Inversion and neg-contraction is standard in the literature. The optionality of neg-contraction results

in two kinds of surface structures if Inversion applies after it. In the case where both rules apply, the contracted neg inverts with the auxiliary.

- (10a). Isn't John { a truckdriver.
ready.
coming home. }
- (10b). Haven't you { any bananas.
seen the movie. }
- (10c). Don't you like pizza.
- (10d). { Won't
Mustn't
Can
Shouldn't } you lock the door.

However, if neg-contraction does not apply, then Inversion gives rise to the following kinds of sentences.

- (11a). Is John not { a truckdriver.
ready.
coming home. }
- (11b). Have you not { any bananas.
seen the movie. }
- (11c). Do you not like pizza.
- (11d). { Will
Must
Can
Should } you not lock the door.

(13a). John accused Mary of being a shrew.

(13b). John criticized Mary for being a shrew.

As in the case of imperatives we may inquire as to the attitude of the speaker towards the proposition which he expresses. Here, the situation is made somewhat complicated by the fact that we have to deal both with the attitudes of the speaker of the sentences, and with the attitudes of the subject of the complement-taking verb.

As Langendoen and Savin observe, the sentences in (13) each involve both a presupposition and an assertion. In (13a), his assertion is that Mary is a shrew, and his presupposition is that this is bad. In (13b), however, he presupposes that Mary is a shrew, and he asserts that this is bad. The speaker of the sentence, however, only presupposes what John asserts. In (13a) the speaker presupposes that it is bad for Mary to be a shrew, but does not presuppose that she is one. In (13b) the speaker presupposes that Mary is a shrew, but does not presuppose that it is bad for Mary to be a shrew. What the speaker asserts in each case is what John did.

Let us designate the proposition asserted by the speaker by A, and the proposition presupposed by the speaker by P. If A should happen to be false, and the speaker knows this, then he is telling a lie. If he does not know that A is false, then he is unwittingly uttering a falsehood. However, if P is false, and the speaker is aware of this, then his misdirection is far

more subtle than if he were lying. For his entire utterance can be neither true nor false if the presupposition is false.

Consider (14), for example.

(14). I lost my shovel.

If I had a shovel, but did not lose it, then in uttering (14) I would be lying. However, if I never had a shovel in the first place, then it can neither be true nor false that I lost it, since "my shovel" never existed. The presupposition of (14), then, is that I had a shovel to lose in the first place.

Now when we consider sentences with embedded complements the situation becomes somewhat more complex. In a sentence like (15) for example --

(15). John admitted that Mary lost her shovel.

-- there are a number of possible realities, depending on
a) whether John, Mary or the shovel exist, b) whether John said what I claim he said, c) whether Mary lost her shovel, d) whether I believe that Mary lost her shovel, and e) whether John believed that it was wrong for Mary to lose her shovel. If John, Mary or the shovel do not exist, then the situation is the same as in (14). If John didn't say that Mary lost her shovel, and Mary did lose her shovel, then I am lying. If John did say that she lost her shovel, and she did, then I am telling the truth. But if Mary did not lose her shovel, then it can be

neither true or false that John admitted it, although he may have said it. The word admitted in this case is being used inappropriately, since its use involves the presupposition that the complement is true.

Consider another example:

(16). It is surprising that Mary is a Commie.

If Mary is a Commie, then it may or may not be surprising, then (16) may be true or false. If Mary is not a Commie, then (16) can neither be true or false, since it attributes a property to something that is non-existent, namely the proposition that Mary is a Commie.

It can be seen, too, that whether the speaker believes that the complement sentence is true or false has not the slightest bearing on whether (16) is true, false, or neither. It does, however, have a bearing on what the speaker thinks he is doing when he utters (16). If he believes that the complement is false, then he is deliberately trying to misdirect the hearer, by causing him to presuppose a falsehood. This is parallel to a conscious and deliberate lie, where the speaker in some way tries to get the hearer to believe a proposition to be true. The difference is that in the case of a lie the proposition in question is asserted by the speaker. The intent in both cases seems to be the same, however. Notice that the speaker may be thinking he is lying when he utters an assertion, but whether he is or not depends on whether the proposition

asserted is false or true. The truth value of the asserted proposition is quite independent of the speaker's attitude towards it.

The relationship between what the speaker believes is true and whether he believes he is lying is parallel to the relationship between what the truth is and whether he is lying. On the one hand he may think that he is lying, and on the other hand his assertion may in fact be false and he is lying. It is possible to abstract the relationship away from the reality, and to state it in the form of a condition on the felicity of the assertion. If the proposition which the speaker asserts is false, then the speaker is lying. From this it follows that if the speaker thinks that the proposition which he is asserting is false, then in some way he also believes himself to be lying, or else is unaware of the notion of "lying".

In sentences which involve presuppositions the speaker is committing some kind of misdirection if the presupposition is false. Similarly, if the speaker thinks that the presupposition is false, then he is consciously trying to misdirect, although the presupposition might well be true. A felicity condition on sentences would be, then, that if the proposition which the speaker presupposes is false, then the speaker is misdirecting.

Before departing the subject of assertion and presupposition I should make mention of a paper entitled Fact, by Kiparsky and

Kiparsky (forthcoming). This paper deals for the most part with the attitude of the speaker towards the truth value of the complements of certain verbs, and the syntactic behavior of such complements. Kiparsky and Kiparsky associate the feature [+Factive] with the complement sentence if it is the case that the proposition represented by this complement is necessarily presupposed by the speaker of the sentence. We may refer to such a complement as a "factive" complement, and to a verb which takes such a complement as a "factive" verb.

2.2.2.2. N-scope and Q-scope.

Jackendoff (1969b) distinguishes between two kinds of negation: sentence negation and verb phrase negation.

Examples of each are given in (17a) and (17b) respectively.

(17a). Not many men were here yesterday.

(17b). Many men were not here yesterday.

Jackendoff's scope rule for negation says, essentially, that the scope of negation in the AUX can be the entire sentence if there is no quantifier in the (surface) subject NP, that it can always be the VP if negation is in the AUX, and that negation which is syntactically outside of the AUX can be the constituent to which it is attached. In (17a) not can be considered to be attached to the NP many men or to the sentence as a whole. The distinction shows up rather clearly in a number of examples with until. Jackendoff points out the fact that until can only occur with a sentence that does

not express a point action. So for example,

(18a). John slept until four o'clock.

(18b). *John didn't arrive until four o'clock. ?

but

(19a). John didn't sleep until four o'clock.

(19b). John didn't arrive until four o'clock.

and

(20a). The guests arrived until midnight.

(20b). The fruit flies died until their number reached
a sub-critical point.

It would seem to be the case that a negated verb phrase constitutes a suitable environment for until because of the fact that not-doing an action, whether it be a point action or otherwise, is felt to be a continuous "action" in itself. For a sentence like (19b) we require the interpretation of not to be verb phrase negation. Observe what happens to the interpretation of such a sentence if we emphasize the negation.

(21). John $\left\{ \begin{array}{l} \text{didn't} \\ \text{did not} \end{array} \right\}$ arrive until four o'clock.

With emphatic stress on negation the interpretation which is forced is that of sentence negation, which may be paraphrased as (22).

(22). It is not the case ...

This reading with (21) links until with a point action, giving a reading paraphrasable by (23).

(23). *It is not the case that John arrived until four o'clock.

However, when the verb itself expresses either point action or durative action, then an ambiguity will arise when there is negation, since negation can have either sentence or verb phrase scope.

(24). Your son didn't talk until he was two years old. One interpretation of (24) is that your son only began talking after he was two years old (verb phrase negation), and the other, that he spoke only intermittently, not continuously, between the time he was born and his second birthday (sentence negation). With emphasis in negation only the second reading is possible.

(25). Your son $\left\{ \begin{array}{l} \text{didn't} \\ \text{did not} \end{array} \right\}$ talk until he was two years old.

We will refer to sentence negation with the notation "N-scope=S" and verb phrase negation with "N-scope=VP".⁵

Another kind of scope we will be referring to is Q-scope, which is an abbreviation for the scope of a question. Grammarians have long been aware of the distinction between a yes-no question and a WH-question. Q-scope is a way of expressing this distinction. If the scope of the question is the entire sentence (yes-no question) then we will say that Q-scope=S. Otherwise it may be that Q-scope=NP or some other constituent.

The determination of Q-scope is quite straightforward in any approach which generates WH or WH-words in the base. If, for

example, we adopt Klima's analysis of questions (Klima (1964)), which involves attraction of an indefinite some+NP to sentence-initial WH, then we can say that Q-scope=S if the sentence contains a WH, but attraction to WH, which is optional, does not apply. Of all the sentences in (27) below, only (27d) will not be derived from (26) by attraction of some+NP to WH, and only for (27d) will Q-scope=S.

(26). WH someone saw something someplace.

(27a). Who say something someplace.

(27b). What did someone see someplace.

(27c). Where did someone see something.

(27d). Did someone see something someplace.

The determination of Q-scope is equally straightforward, however, if we choose to generate WH in the questioned constituent itself, or if we generate the WH-words themselves in deep structure. For the Klima type of analysis Q-scope would be determined after attraction to WH. Otherwise it could be determined at the deep structure level.

2.2.2.3. Some comments on declaratives.

Not surprisingly, a declarative sentence may represent a number of linguistic acts, just as an imperative sentence may, although of course the set of acts differ between the two cases. Certainly the least subtle difference between the two is that the notion "truth-value" has relevance to the declarative sentence, while it is meaningless with respect to

the imperative. So, for example, while it is meaningful to ask "is that true?" if I say "Mary is a shrew", it is quite meaningless to ask the same question if I say "give me a can of beans, please." Following a suggestion by Hale⁶ I will denote this difference by the terms "irrealis" and "realis", where the first applies to sentences like declaratives and the second to sentences like imperatives. More precisely, the realis/irrealis distinction applies to clauses, whether they are embedded or root.

Austin (1962, pg. 161) identifies a class of verbs which designate the kinds of things one could be doing when one utters a declarative sentence. I will list those which seem most appropriate to the present discussion.

(28). affirm report deduce argue swear remark
state concede agree correct rejoin conjecture
testify answer mention postulate

The class of verbs to which those in (28) belong are called "expositives" by Austin. They are "used in acts of exposition involving the expounding of views, the conducting of arguments, and the clarifying of usages and references." What Austin was aiming at in classifying acts in such a way (he also had four other classes) is some general notion of the type of activity one engages in when uttering a sentence. To the list of verbs in (28) may be added a number of other verbs, which can easily be found in a thesaurus.

As Austin notes, the list of expositives is very large. In fact, one should say that it consists precisely of those constructions which can be put on the utterance of a declarative sentence. There appears to be no practical limit, given appropriate circumstances, to the number of ways in which a declarative sentence may be used. Significantly, Austin elsewhere distinguishes between what one is saying (the locutionary force), what one is doing in saying it (the illocutionary force), and what one is doing by saying it (the perlocutionary force).⁷ The perlocutionary force is the intended consequence of the utterance of the sentence. This aspect will not concern us here further, since its relationship to the sentence itself is of no direct linguistic significance.

Nor, for that matter, will we be concerned here with the illocutionary force of the sentence, except insofar as it is uniquely associated with the sentence. So, for example, if someone asserts "John accused Mary of being a shrew", then he is asserting that John, the subject of accuse, asserted that Mary is a shrew. The relationship between John and the complement of accuse is independent, however, of the truth of the proposition which the speaker asserts, or of the reason why the sentence was uttered. If the proposition is denied by someone, then he denies that John asserted that Mary is a shrew. If he reports the proposition, then he reports that John asserted

(30b). John entertained $\left\{ \begin{array}{l} * \emptyset \\ \text{the idea} \end{array} \right\}$ that Mr. Jones was here.

(30c). John contemplated $\left\{ \begin{array}{l} * \emptyset \\ \text{the proposition} \end{array} \right\}$ that the world

was flat.

I propose that we proceed as we did in the case of imperative sentences - while admitting that there are a variety of possible interpretations in vacuo for a particular type of sentence, we should also note that there is one interpretation which is most preferable. Recall that in the case of imperatives we observed that two possible interpretations were that of suggestion and of ordering. The difference, we concluded, was in the source of the pressure interpretation, i.e. whether it is the speaker's desires or something else. In the case of declaratives we have a somewhat similar situation. The difference between asserting the proposition and merely entertaining it again turns on the speaker's involvement in what the sentence conveys. If the speaker is neutral, then while the proposition nevertheless has a truth value, there is no involvement on the part of the speaker with the truth value of the proposition. If he asserts the proposition, then he is "responsible" for the truth of the proposition. In this respect imperatives and declaratives are quite analogous.

A difference, of course, is that a proposition which is not asserted may be uttered for its own sake, while such is not the case with an imperative; that is, an imperative always involves pressure whatever the source. One might wish to say that a proposition always has a truth value, whatever the source of the responsibility for it may be, but since I will not be trying to exploit the parallelism between declaratives and imperatives, I don't believe that it would be particularly fruitful as far as the subsequent discussion is concerned to follow up on this line of inquiry.

Let us say that in the "normal" case the declarative main sentence is an assertion. That is, when someone utters such a sentence we can assume that he believes it to represent a true proposition. Considerable literature exists concerning assertions, beliefs and so on, but having no desire to become enmeshed in the topic I will treat assertion itself as a primitive. I do not believe that the internal structure of an assertion, if there is one, will have any bearing on the discussion of the various types of questions to follow. We will mention, from time to time, the assertion involved in a particular sentence. By this will be meant simply what the speaker is responsible for the truth value of when he utters a realis sentence.

2.2.3. The interpretation of yes-no questions

2.2.3.1. Preliminary analysis

In section 2.2.1 I pointed out that there have been a

number of proposals for the derivation of yes-no questions which appear to have some degree of plausibility. I also hinted that it could be shown that yes-no questions should be derived from the same marker which underlies WH-questions. This particular claim is debatable; however, I would claim that no matter how these sentences are derived, there is a very strong argument for deriving all yes-no questions from the same syntactic source. It is by no means obvious from considering the interpretations of yes-no questions that this should be the case, since they often vary in interpretation quite radically. We shall see that the differences in interpretation fall within certain well-defined limits, and that there is a principled way of handling this difference without recourse to differences in underlying syntactic structure.

Consider, for example, the sentences in (31).

(31a). Are you going to George's party?

(31b). Aren't you going to George's party?

(31c). Are you not going to George's party?

Each of these sentences should be read with rising intonation.

A most important fact about these sentences is that they can all be derived by the same sequence of transformations.

In (31b) negation contracts onto the progressive are, and then Inversion applies to each sentence.

(33a). A: Are you going to George's party?

B: Yes, I am.

A: { I thought you were.
*I thought you were.
*I thought you weren't.
I thought you weren't. }

(33b). A: Aren't you going to George's party?

B: Yes, I am.

A: { I thought you were.
*I thought you were.
*I thought you weren't.
*I thought you weren't. }

(33c). A: Are you not going to George's party?

B: Yes, I'm not.

A: { *I thought you were.
I thought you were.
I thought you weren't.
*I thought you weren't. }

The two starred sentences in (33c) are so marked because they are inconsistent with the biases entailed by the preceding part of the dialogue. They are both biased toward the notion that B's answer was negative, although clearly each is based on a different expectation on the part of speaker A. The same is the case with the second and third of A's responses in (33b).

However, with his fourth response A does not contradict what B has said, but rather it contradicts what A indicated that he thought in the first place by phrasing his question as he did. The starred sentences in (33c) are out for the same reason as the starred sentences in (33a) are out: in this case, they have a bias towards a positive answer from B, which is not in evidence. In fact, a positive answer on B's part is impossible here, since the question is not about whether he is going to do a particular thing, but about whether he isn't. B could have answered "No, I am," where "am" contrasts with "are...not", but he could not have answered "No, I'm not".

(31a) and (31c), then, seem to be straightforward yes-no questions. What about (31b)? Surprisingly, (31b) does not have both interpretations of (31c), and, as we have observed, the negative element lacks a negative connotation. The difference between (31a) and (31b) appears to be one of bias. While the first has no bias, the second has the expectation that you are in fact going to George's party.

The type of bias involved here differs considerably from the presuppositions discussed in 2.2.2.1. If someone asks the question "Did you visit your sister?" when I do not in fact have a sister, it is impossible to answer either "yes" or "no" without presupposing that I have a sister. The absence of a natural answer of a truth value in the corresponding declarative:

if the declarative has no truth value, then the question cannot be answered by "yes" or "no". The truth of the presupposition is a felicity condition on both the declarative and the question, therefore.

However, if it is not true that you are going to George's party, then (31b) still seems to be a felicitous question. The answer would be something like "as a matter a fact, I'm not." The strict notion of presupposition which we have been using is inapplicable here, and we are dealing with another kind of phenomenon which might be called presupposition, but which we are calling "bias" and "expectation" to avoid confusion.

Let us now take a look at (31c). We have already noted that this sentence is ambiguous. It is possible to demonstrate that the source of the ambiguity may be considered to be precisely the ambiguity of scope of negation in the position immediately preceding the verb phrase (we will call this position the AUX-neg position, since in this case negation is in the AUX.) As we noted in 2.2.2.2, AUX-neg negation is usually ambiguous between sentence negation and verb phrase negation. An example in which this is not the case is provided in (34).

(34). Many of the fruit flies won't die until tomorrow. It is precisely a sentence of this type which is not ambiguous when questioned like (31c).

(35). Will many of the fruit flies not die until tomorrow.

That is, (35) cannot be construed as a question about whether or not many of the fruit flies will die some time tomorrow, with the expectation that many will.

(36). A: Will many of the fruit flies not die until tomorrow.

B: Yes, many $\left\{ \begin{array}{l} *will. \\ won't. \end{array} \right\}$

We would predict from this that sentences which may only have the positive bias interpretation, such as (31b), would show the same distribution as sentences with sentence negation do. However, since such sentences are not interpreted negatively, it is impossible to show that semantically the negation is in fact sentence negation. What we can do is show that just where only verb phrase negation is possible, questions like (31c) are unambiguous and questions like (31b) are ungrammatical. Consider (36) along with the examples below.

(37a). *Won't many of the fruit flies die until tomorrow.

(37b). *Won't John arrive until four o'clock.

As far as the syntactic structure is concerned, negation in AUX-neg position is no different in questions than it is in declaratives. That is, (38a) and (38b) are syntactically identical with respect to the position of negation in the sentence.

(38a). Mary will not like this.

(38b). Will Mary not like this.

Since it is the case that the rules for the interpretation of AUX-neg negation are valid for a sentence like (38a), and since they also predict correctly one possible interpretation of negation in (38b) and the only possible interpretation of negation in (35), there is no reason not to conclude that the general principles of interpretation of negation are the same in both types of sentences, declaratives and questions. To put it another way, there is no reason to claim that there exists a special principle for interpreting negation in AUX-neg position in yes-no questions.

What we can say, instead, is that sentence negation means something different in yes-no questions than it does in declaratives. That is, what is at variance is the interpretation of sentence negation, and not the principle for interpreting negation in certain syntactic positions.

If we identify the reading of (31c) which contains the presupposition as an instance of sentence negation, then it follows that sentences like (31b) should also be treated as instances of sentence negation. We should point out here that there are cases, too, where sentence negation appears in questions with a negative connotation. Consider the following examples.

(39a). Didn't some of the sailors see the movie?

(39b). Didn't any of the sailors see the movie?

(39c). Did none of the sailors see the movie?

It seems that all three of these sentences are questions about whether some of the sailors saw the movie, but that they differ in presupposition. (39a) is biased toward the proposition that there exists a group of sailors who saw the movie; (39b) and (39c) is biased towards the proposition that there is no sailor who saw the movies, or alternatively, that it is not the case that any one of the sailors saw the movie. In other words, the expectation of the last two sentences is the expectation of the first with sentence negation added.

If a question has sentence negation then the interpretation procedure is quite straightforward. The questioned proposition is represented by all of the sentences less negation, and the expectation is the same, usually, as the questioned proposition.

(40a). If Q-scope=S then the question proposition=S.

(40b). If Q-scope=S and N-scope=S then the expectation=S.

Since (39b) and (39c) are synonymous, however, and since in the latter case negation appears syntactically incorporated into the quantifier some, we must say that in (39b) negation is semantically incorporated into the quantifier. That is, if we represent the reading of none as neg+some, then we can represent the interpretation of neg...any(=some) as neg+some under certain conditions. The incorporation of neg into any

is otherwise motivated, since it accounts for the synonymy of sentences like (41a) and (41b).

(41a). I didn't see anyone in the park.

(41b). I saw no one in the park.

We may now extend (41b) to handle incorporate negation.

(40b'). If Q-scope=S and if N-scope=S then if neg has been incorporated into the subject, the expectation is that it is not the case that S; otherwise the expectation is that S.

For example, in (39c) S is "some of the sailors saw the movie", and N-scope=S, but negation has been incorporated in not the subject as none. The expectation here is a negative one: "it is not the case that any of the sailors saw the movie." In (39a), however, S is the same as in (39c), but negation is not incorporated into the subject. Hence the expectation here is positive: "some of the sailors saw the movie."

What all of this shows is that there is an intricate relationship between the position of negation in question and the precise interpretation of that question, and that this relationship is a function of the interpretation of negation as either sentence or verb phrase negation. The principles of interpretation were originally motivated for declarative sentences, and they may be carried over to questions with a

minimum of alterations. The most significant difference between the interpretation of negation in declaratives and in questions is that inversion in questions may move the negative element away from the verb phrase.

2.2.3.2. The role of intonation.

The reader may recall that I specified in the previous discussion that the sentences under consideration were to be read with rising intonation. The reason for this is, very simply, that the interpretation of such sentences changes somewhat when they are uttered with level intonation. Consider the following examples with such intonation.

(42a). Does John like mushrooms.

(42b). Doesn't John like mushrooms.

(42c). Does John not like mushrooms.

The first impression that one gets about the last two sentences is that they are more "emphatic" than the corresponding questions with rising intonation. It is difficult to say whether (42a) differs significantly from its variant with rising intonation, and I suspect that it doesn't, at least not with respect to the presuppositions which it involves.

However, the difference in sentences with sentence negation seems to be much more clear-cut. (We are only considering (42c) with sentence negation here.) Consider the following dialogue.

(43). A: Aren't you the fellow who introduced my daughter to marijuana.

B: No, it's not true, you're lying.

If the intonation on A's question is level, B can interpret it to be an accusation (which presupposes, incidentally, that it is bad to introduce the daughter to marijuana.) If the intonation is rising, however, we might say that B's reaction was somewhat more emphatic than was called for by the question. It seems, in fact, that the question with level intonation becomes an assertion. It differs from a standard assertion in that the speaker nevertheless is trying to elicit a response from the hearer. Consider the following examples with their corresponding declarative assertions.

(44a). Bill Smith is John's uncle.

(44b). Isn't Bill Smith John's uncle.

(45a). We have a lot to be happy for.

(45b). Don't we have a lot to be happy for.

(46a). The world is round.

(46b). Isn't the world round.

(47a). Harry thinks that John is a Commie.

(47b). Doesn't Harry think that John is a Commie.

The construction of which the b-sentences are examples is frequently found in monologues, where the speaker is trying

to argue a point by establishing premises and drawing conclusions from them. In order to convince the hearer of the correctness of his conclusions he must get him first to agree to the premises, which he may do by asking a question like the b-sentences, and then waiting for a word of assent or an equivalent response. In this sense, the speaker is not trying to elicit the truth value of the questioned proposition, but rather he is trying to elicit some gesture of agreement which will indicate that the hearer acknowledges the truth of the questioned proposition. Use of the question form indicates that the sentence is not a simple assertion, however, but in some way the level intonation indicates that the sentence is fundamentally an assertion. It is also elicitive in a sense, since it requests a response from the hearer, but the type of response with its appropriate is strongly constrained by the type of question⁹. (48) summarizes these observations.

(48). If Q-scope=S and N-scope=S then if intonation is level the sentence is an assertion, and it intends to elicit a gesture of agreement as to the truth of the asserted proposition. If intonation is rising, then (41b') applies.

The presupposition in sentences to which (48) applies is identical, as we would expect, to the asserted proposition. It should be pointed out also that while the representation of any and some are substantially the same, any cannot appear

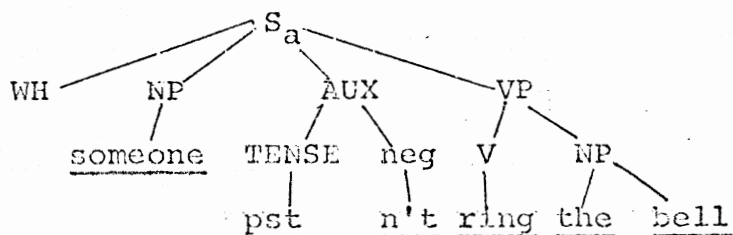
in a non-affective environment.¹⁰ Since assertion in itself is not such an environment, and since pseudo-negation (i.e., negation which lacks a negative connotation) is not such an environment either, we would expect to find a difference in grammaticality between sentences like (49a) and (49b) with level intonation.

(49a). Didn't someone ring the bell.

(49b). *Didn't anyone ring the bell.

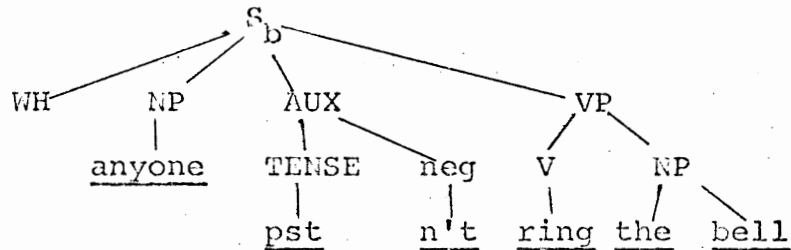
The second example is ungrammatical. Clearly this must be closely related to the ungrammaticality of the corresponding assertion "*anyone rang the bell." Following Jackendoff, we treat some and any as independent lexical items which differ by the value of one feature, called [X]. Any has the feature [+X], and items which are [+X] must be in construction with an affective element in order to avoid a semantic contradiction. We take the derived structures of the sentences in (49) immediately before inversion.¹¹ For each sentence we generate a proposition in its semantic representation, which we call P. We assume for the moment that each sentence contains an element which indicates that it is a question.

(50a).



$P_a =$ " SOME one ring the bell "

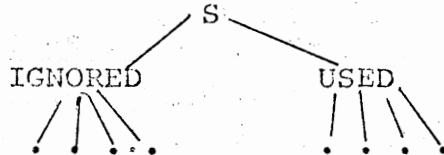
(50b),



$P_b =$ " [SOME] one ring bell "

The assignment of the proposition ignores such elements as neg, TENSE and WH; it is possible that all such elements are generated in the Pre-Sentence, thus providing a natural division of the sentence into "that which is ignored in the assignment of P" and "that which is used in the assignment of P" at the deep structure level as follows.

(51).



For some purely syntactic arguments in favor of this analysis of the base, see Jackendoff (1968c).

(52). Q-scope_a=P_a Q-scope_b=P_b
 N-scope_a=P_a N-scope_n=P_b

From this information and from the knowledge that the intonation on these sentences is level, we derive the

questioned, presupposed and asserted propositions. We denote the peculiarity of the kind of question which we are dealing with by "question*", which means simply that the hearer is expected to agree that the proposition in question is true.

- (53). Questioned* proposition_a
Asserted proposition_a =P_a
Presupposition_a
Questioned* proposition_b
Asserted proposition_b =P_b
Presupposition_b

Now, since P_b contains [SOME] we check to see if the occurrence of [SOME] in any of the three propositions is in construction with an affective element. In fact, in neither the question*, the assertion, or the presupposition is this the case, so these components of the reading of (49b) are ill-formed.

If the intonation on (49a) and (49b) are rising, then the results are somewhat different. In this case P_a and P_b, and Q-scope and N-scope are the same as they were for the examples with level intonation. The rules of interpretation give the following, however.

- (54). Questioned proposition =P_a
Presupposition =P_a

Questioned proposition_b = P_b

Presupposition_b = it is not the case that P_b

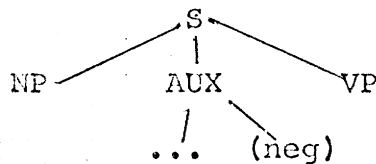
Since in the case of P $\begin{bmatrix} \text{SOME} \\ +X \end{bmatrix}$ is in construction with an affective environment, either question or not, this component of the reading is semantically well-formed.

2.2.3.3. Summary.

The observations of the preceding sections taken together constitute, I believe, a very strong argument for the independence of a well-defined range of syntactic phenomena from a certain range of semantic phenomena.

In 2.2.1. I showed that we could account for all the attested surface structures of yes-no questions in a very natural way by considering the interaction of a number of quite well-motivated transformations. The structures to which these rules apply, which may be deep structures or very close to deep structures, may be characterized by the following tree scheme.

(55).



The rules which generate the surface structures are

- (56). 1. neg-contraction (optional)
- 2. Inversion

Next I showed that while these transformations account for the available surface structures quite neatly, the

interpretation of such sentences as they generate is in no way determinable from the deep structures alone. More precisely, I showed that there are three aspects of the interpretation which depend crucially on the output of these transformations, in particular neg-contraction, and of intonation. These three aspects are: what is being elicited, what, if anything, is being asserted, and what, if anything, is presupposed. Contraction is the most crucial aspect of the derivation, since this determines what the N-scope will be. If we accept the significance of the syntactic generalizations mentioned then this proliferation of different interpretations leads quite directly to the conclusion which constitutes the essence of the hypothesis which we are arguing, which is that there are syntactic generalizations which can only be captured by postulating deep structures that contain no information about certain aspects of the interpretation. This conclusion will be discussed more explicitly in 2.4.1, where I will show that inclusion of the type of semantic information noted here in the deep structure precludes the capturing of these generalizations.

2.3. Tag questions.

2.3.1. The syntax of tag questions.

The most extensive treatment of the syntax of tag questions that I know of is Klima (1964, p. 264), while Katz and Postal (1964) discuss the semantics of tag questions to

some extent. A tag question is a sentence of the following form.

(57a). John is heavy, isn't he.

(57b). John isn't heavy, is he.

(57c). John is heavy, is he.

Klima's rule of tag question formation reads as follows.

(58). Tag question formation (Klima (1964)):

WH nominal - X - aux¹ (aux²) MV

1 2 3 4 5 6 ⇒

∅ 2 3 4 5 1 2 4 (not)

("where not is absent from the tag if X in the source contains a negative preverb.")

There are a number of generalizations which Klima seeks to capture through this analysis. First of all, just as in yes-no questions, inversion must occur, but it must occur in the tag. The choice of a marker like WH, which obligatorily causes inversion, is motivated by this fact. While we could conceive of inversion being optional in the case of untagged sentences, resulting in

(59a). Did you go to the fruit market?

or

(59b). You went to the fruit market.

the fact that inversion must take place in the tag and only in the tag if it exists suggests that there is some element which causes the inversion in the first place.

(60a). *You are a sneaky chap, you aren't.

*You aren't a sneaky chap, you are.

(60b). *Don't you like anchovies, do you?

*Do you like anchovies, don't you?

Klima's rule accounts for these facts by copying the inversion-causing WH from the head of the sentence to the head of the tag. As a consequence of this analysis it follows that WH (or some similar marker) may be used to account for inversion in yes-no questions as well. These facts effectively rule out the analysis of Chomsky (1957), in which inversion is optional.

The second generalization which Klima must capture is that at most one not/n't may appear in a sentence with a tag question. While the three examples of (57) are grammatical, (61) is not.

(61). *You don't have any peaches, don't you.

Klima accounts for this by inserting a not into the tag optionally if the sentence originally lacked negation in the AUX. I will have more to say on this shortly.

The third generalization which Klima must capture is that the distribution of negation in the tag is the same as it is in yes-no questions. Compare (62) with (63).

(62a). Did you go to the fruit market?

(62b). Can't you find the paddle?

(62c). Will John not cook the steak?

(63a). You didn't go to the fruit market, did you?

(63b). You can find the paddle, can't you?

(63c). John will cook the steak, will he not?

That is, tag question formation must precede inversion, and inversion must apply to the tag after contraction, so that the full range of structures can be achieved.

A significant characteristic of Klima's rule is that not is placed optionally after the copied aux,¹ where aux¹ consists of the string TENSE (+ { Modal }).

{
 have
 be
}

This would seem to be equivalent to the claim that there are two rules of neg-placement, since there is no principled way of explaining why the structural change of (58) is not (64a) or (64b), or why not shows up in the tag at all.

(64a). ⇒ ∅ 2 3 4 5 (not) 1 2 4
 "*Harry is a pushover, not is he."

(64b). ⇒ ∅ 2 3 4 5 1 (not) 2 4
 "*Harry is a pushover, is not he."

One rule of neg-placement applies in the normal situation, and the other rule, which has been incorporated by Klima into the tag formation, inserts not into the tag under the appropriate circumstances. The fact that this is mechanically part of the tag formation rules should not obscure the fact

that it is indeed a second rule of neg-placement. Clearly it would be desirable to generatize the procedure by which not is placed in the sentence, in order to avoid ad hoc statements such as this second neg-placement rule.

Notice, now, that if tag question formation were to precede the placement of not in the sentence, then a sentence which contained a tag would in fact have two positions into which not could be placed, which would be quite indistinguishable as far as neg-placement was concerned. That is, there would be one in the tag, and one in the rest of the sentence to the left of the tag. Let us state the rule of tag question formation as follows:

(65). Tag question formation:

(neg)	WH	NP	TENSE	(+ {	M have <u>be</u>	})	X	
1	2	3	4				5	
	1	∅	3	4	5	2	3	4

If not is present in the deep structure, rule (65) will give (66).

(66).

not NP TENSE (+[+v]) W WH NP TENSE (+[+v])¹²

The rule of neg-placement will then give one of the following.

(67a).

NP TENSE (+[+v]) not X WH NP TENSE (+[+v])

(67b).

NP TENSE (+[+v]) X WH NP TENSE (+[+v]) not

In this way we can account for the fact that at most one not may appear in a sentence with a tag question, in general.

It should be noted that it will be necessary to constrain these rules in order to reduce the scope of the variable "X" which appears in (65). If neg-placement applies after tag formation, we must insure that negation will not be placed into the AUX of a sentence embedded in X. It should only be permitted to end up in the original AUX of the root sentence or in the copy of it which is created by the tag formation rule.

We must say, then, is that neg-placement does not insert morphemes into sentences which have already been cycled on. We may also say that the WH-NP-AUX which is created by the tag rule is attached directly to the top S, or, if it is an S node, then it is somehow exempted from being excluded from the scope of neg-placement by general constraints. Perhaps a case can be made for considering such a newly created constituent to be part of the root sentence, or perhaps the general constraint against putting material down into sentences does not apply in case the sentence is newly created by a transformation. Hopefully further research will settle this particular question satisfactorily.

Another point which must be accounted for was mentioned to me by Ross (personal communication). He notes that the tag may contain more than one modal, and that the distribution of modals in the tag is the same as the distribution of modals in case of ellipsis.

(68a). John would have been going, { wouldn't he have been.
wouldn't he have.
wouldn't he. }

(68b). The house has been being eroded, { *hasn't it been being.
hasn't it been.
hasn't it. }

(69a). John would have been going and { I would have been too.
I would have too.
I would too. }

(60b). The house has been being eroded, and the church
{ *has been being too.
has been too.
has too. }

The solution to this problem would be to revise the tag formation rule so that it copied the entire AUX, and to have another rule which progressively deletes modals from the right of the sentence. The revised version of tag formation is somewhat less complex than rule (65).

(70). Tag question formation (revised):

(neg) WH NP AUX X

1 2 3 4 5 \Rightarrow 1 \emptyset 3 4 5 2 3 4

The rule for the deletion of the modals may be stated approximately as follows:

(71). Progressive modal deletion:

M M #

1 2 3 \Rightarrow 1 \emptyset 3

Condition: under identity with modals elsewhere in the sentence - usually preceding, but sometimes following, as is the case with pronoun reference.

The third term in the structural description is intended as a general catch-all to indicate the effective end of the sentence. It is difficult to make this definition precise, but it is meant to include the position before a sentence-final adverb, as in sentences (69a) and (69b).

This rule will apply not only to tags, but also to ellipsis. This means, in effect, that the rule of ellipsis can also be broken down into two parts, one of which is rule (71), and the other of which is the deletion of verb phrases under identity with another verb phrase appropriately located in the sentence.

2.3.2. The interpretation of tag questions

In discussing the interpretation of tag questions I will be concerned with showing that precisely the same relationship exists between the derivation and the interpretation of such sentences as exists with yes-no questions. While the syntactic structures can be derived quite elegantly, given the deep structures and the transformations, the interpretation of sentences even derived from exactly the same deep structure again differ quite radically from one another. Nevertheless, we will see that the principles established for yes-no questions will, with some modifications, operate equally well for the tag questions which we will be considering.

2.3.2.1. Preliminary analysis

Consider first the following sentences, uttered with the intonation patterns described below.

(72a). John likes mushrooms, doesn't he.

(72b). John likes mushrooms, does he not.

(72c). John doesn't like mushrooms, does he.

(72d). John likes mushrooms, does he.

The intonation pattern is not identical in all cases. In particular, (72b) and (72c) may be uttered with a rising intonation throughout the sentence, or with a level intonation on the tag. We may represent these intonations as follows:

Intonation 1: You don't like ↑ me, ↑ do you ↑ .

Intonation 2: You don't like me ↓ , do you ↓ .

Intonation 3: You don't like me ↓ , do you ↑ .

Sentences (72a) - (72c) may also have intonation 4, below.

Intonation 4: You like me ↓ , ↑ don't you ↓ .

We will discuss the effect of the different intonations in section 2.3.2.2. For the time being, let us turn our attention to (72a) - (72c) with intonation 3. The first two sentences are synonymous. They are both questions about the truth value of the proposition "John likes mushrooms", with the expectation that John in fact does like mushrooms. Sentence (72c) is ambiguous, however. The reading with which we are concerned at the moment is similar to that of (72a) and (72b), except that the questioned proposition and the expectation are both "John does not like mushrooms", or more precisely, "it is not the case that John likes mushrooms."

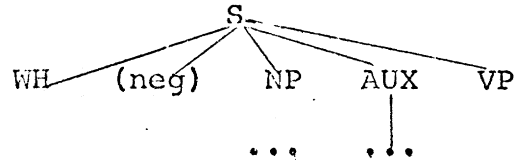
In the preceding section we argued that these three types of tag questions can be derived by applying the following transformations:

- (73). 1. Tag formation
2. Neg-placement
3. Neg-contraction
4. Inversion

The set of deep structures to which these rules apply is given by (74), which is the same as the set of deep structures which

we argue underlie yes-no questions.

(74).



A most interesting consequence of these rules, and in particular of neg-placement, is that sentences such as these tag questions are all derived from the same deep structure, with the precise configuration of the surface structure depending on which position we choose to place neg in, and whether contraction applies or not. Yet we have indicated that these tag questions differ radically in interpretation.

Here we have another argument, then for the independence of syntax and semantics, in the restrictive sense that we have been associating with "independence". To recapitulate briefly, we found in 2.3.1. that the rule of tag question formation provided the neg-placement rule with two environments which would satisfy the structural condition. This seems to be the most natural analysis, because it predicts exactly that neg may appear either in the tag or in the pre-tag part of the sentence. If neg-placement preceded tag formation, then the latter rule would be complicated by the need for specifying what part of the AUX may be copied if neg appears in it. Such a complication can be found in Klima's rule of tag question formation, in fact. Given the analysis which I have proposed, it follows that the interpretation of

the tag question will be independent of the deep structure which underlies it.

Let us consider now (72c) and (72d). The first is to be read with intonation 3, while the second is to be read with intonation 2. (72d), while it may also be derived in a quite straightforward fashion from the deep structure (74) without neg, nevertheless resembles the other tag questions only slightly as far as interpretation is concerned, and it is also quite different in interpretation from the corresponding yes-no question which would be derived if tag formation failed to apply in the derivation. In fact, it is not at all clear that this type of tag question is a question at all, and most linguists who have discussed tag questions have mentioned it only in passing. It does not appear that this type of tag question is eliciting the truth value of a proposition. The reading seems to be the following: the speaker is repeating a certain proposition, and he is expressing doubt that the proposition is true. (72d) may be paraphrase as (75), for example.

(75). { They say } that John likes mushrooms, but I kind
 { It is said }
 { I hear }
 { I'm told }
 of doubt it.

In other words, the speaker entertains the proposition that John likes mushrooms and at the same time has the expectation that he does not.

Sentence (72c), we mentioned, is ambiguous. One reading is parallel to that of (72a); the second reading is parallel to that of (72d), with the difference being that the proposition entertained is "John doesn't like mushrooms", and the expectation is "John likes mushrooms." We may ask what the source of this ambiguity is.

Clearly the ambiguity of (72c) is related in some way to the presence of the negation, since the only difference between it and (72d) is the absence of negation in the latter, which is unambiguous. This should give us a fairly strong clue as to what is going on here, since as we noted in 2.2.3.1, the ambiguity of negation in AUX-neg position underlies the ambiguity of certain yes-no questions. We might expect, therefore, that the same type of relationship holds here.

If we consider tag questions which may have only one of the two interpretations of negation, we find that they are unambiguous.

(76a). Many men don't like Mary, do they.

(76b). Most of the fruit flies won't die until
tomorrow, will they.

(76c). John didn't arrive until round about midnight,
did he.

(77a). Not many of the men like Mary, do they.

(77b). Not all of the children will stay home from school, will they.

(77c). Not every sailor has morals, does he.

Careful consideration of these sentences will show, I think, that those in (76) only have the "doubt" interpretation, while those in (77) only have the question cum presupposition interpretation. The ambiguity of (72c) can thus be attributed to the ambiguity in N-scope, since (76) and (77) show that where N-scope is invariant, there is only one reading possible.

A very important difference between tag questions and yes-no questions is the content of the questioned proposition and the direction of bias. Only in the tag questions is it possible for the bias to be negative and for the questioned proposition to contain sentence negation. Compare the examples in (78).

(78a). Isn't John a funny fellow?

(78b). John isn't a funny fellow, is he?

(78c). John is a funny fellow, $\left\{ \begin{array}{l} \text{is he not.} \\ \text{isn't he.} \end{array} \right\}$

Only (78a) and (78c) are synonymous. This is quite significant, since it means that the proposition P which we associate with the sentence and which the rules of interpretation operate on must be established after tag question formation applies; otherwise there would be no difference between any yes-no

questions and tag questions derived from the same source. These rules may be stated as follows. The entire sentence less the tag is called the "declarative".

(79). In a tag question, the proposition P is the proposition which the declarative represents.

- a. If the intonation is intonation 3 or 4 then if $N\text{-scope}=S$ then the questioned proposition= P and the expectation is that P.
- b. If the intonation is intonation 1 or 2 then if $N\text{-scope}\neq S$ then the expectation is that it is not the case that P, and there is no questioned proposition.

There remain two possibilities which we have not yet considered: where $N\text{-scope}=s$ and the intonation is intonation 1 or 2, and where $N\text{-scope}\neq S$ and the intonation is intonation 3 or 4.

2.3.2.2. The complexities of intonation.

First, let us consider the following sentences, uttered with level intonation (intonation 2).

(80a). Snow isn't white, is it.

(80b). Snow is white, isn't it.

(80c). Snow is white, is it not.

These sentences all have the interpretations of the corresponding yes-no questions with level intonation. That is, they are assertions, they presuppose what they assert, and they

elicit agreement on the part of the hearer as to the truth of the asserted proposition (c.f. 2.2.3.2.) One can even imagine a situation where both a tag question and a yes-no question might be used in succession.

(81). A: You were home last night ↓ weren't you. ↓

B: (no answer)

A: I said, weren't you home last night. ↓

B: (nods sullenly)

A: Why didn't you admit it the first time I asked? ↑

The difference between the tag questions and their corresponding yes-no questions again lies in the determination of the proposition P. Having determined proposition P the rest is straightforward.

(82). If the intonation is intonation 2 and if $N\text{-scope}=S$, then the tag question asserts P, questions* P, and the expectation is that P.

Let us see at this point to what extent we can consolidate the rules for the interpretation of both yes-no and tag questions.

2.3.2.3. An overview of the interpretive principles.

Notice first that if $Q\text{-scope}=S$ and the intonation is 3 or 4, then the sentence is a question in the usual sense. Furthermore, if $N\text{-scope}=S$ there is a presupposition as well. However, if $N\text{-scope}\neq S$, or if there is no negation at all, a tag question is unacceptable with intonation 3, although yes-no questions are fine.

(83a). *Mary is your friend ↓ is she. ↑

(83b). *You like donuts ↓ do you. ↑

(83c). *Bill can sing ↓ can he. ↑

It seems fairly clear why these sentences are unacceptable. Intuitively, we feel that they are both asserting the proposition and questioning it in the same breath, give rise to a semantic inconsistency, which the paraphrases in (84) explicate.

(84a). *Mary is your friend, but is she your friend?

(84b). *You like donuts, but do you like donuts?

(84c). *Bill can sing, but can he sing?

Because of the fact that tag questions are composed of two phrases, we can get twice as many intonations as we can with yes-no questions. From the point of view of the declarative part of the tag question there is either a rising or a level intonation, (and the same is true with respect to the tag. Let us call intonations 1 and 2 "smooth" intonations, while intonations 3 and 4 are "broken". Let us also refer to the intonations on yes-no questions as "singulary", and we will use the terms "rising" and "level" to refer to the intonation on the inverted part of the sentence. We can summarize the various interpretations of yes-no question and tag questions as follows.

		Level	Rising
N-scope=S	Broken	Expectation P Question* P Assert P	Expectation P Question P
	Singulary	Expectation P Question* P Assert P	Expectation P Question P
	Smooth	Expectation P Question* P Assert P	*
N-scope≠S	Broken	*	*
	Singulary	Question P	Question P
	Smooth	Expectation not P	Expectation not P

One combination of possibilities which we have not discussed is if N-scope=S, the question is a tag question, and intonation is rising (intonation 1). Such a situation is represented by the examples in (85).

(85a). ? Not many men like to dance ↑, do they? ↑

(85b). ? George didn't stay home because he wanted to do anything special ↑, did he? ↑

It seems quite clear to me that these sentences are semantically inconsistent in some way. It is likely that they are simultaneously biased towards and against P. However, since it is very difficult to make a judgement in such a case, let us see if we can ascertain some general principles of interpretation on the basis of the remaining cases in the above table, and then

see if these principles account for the unacceptability of these sentences in a plausible way.

We can see from the table above that if $N\text{-scope} \neq S$, i.e. if we have verb phrase negation or no negation at all, then intonation plays no role. The asterisks in the table indicate sentences which are unacceptable under the given intonation - it is difficult to say what the interpretation of such sentences might be, but it seems that they are equivalent as far as their unacceptability goes. The following pairs of sentences show that in the unacceptable and the acceptable cases, the intonation has no effect.

(86a). *John likes my tractor ↓, does he. ↓

*John likes my tractor ↓, does he. ↑

(86b). Did you sleep well last night. ↓

Did you sleep well last night. ↑

(86c). You have a wart on your nose ↓, do you. ↓

You have a wart on your nose ↑, do you. ↑

If $N\text{-scope} = S$, however, intonation does make a difference, but the surface structure does not. Each group of sentences in (87) appears to have a single interpretation.

(87a). Bill stole your protractor ↓, didn't he. ↑

Didn't Bill steal your protractor. ↓

Bill stole your protractor ↓, didn't he. ↓

(87b). Not many folks came to the fair, ↓ did they. ↑

Didn't many folks come to the fair. ↑

We may state our principle of interpretation as (88). It will be noted that (88) is nothing more than a collection of statements about what sentences mean when they have a certain intonation and surface structure - there is no general principle which relates a particular component of the syntactic structure to a particular component of the interpretation regardless of context.

(88a). If N-scope=S then

(a) if intonation is level, the expectation is that P, the questioned* proposition=P, and the asserted proposition=P.

(b) if intonation is rising, the expectation is that P, and the questioned proposition=P; however, if the intonation is smooth, the sentence is unacceptable.

(88b). If N-scope \neq S then

(a) if intonation is smooth, the expectation is that it is not the case that P

(b) otherwise the questioned proposition=P

(c) if intonation is broken, the sentence is unacceptable.

What is most striking about these "rules" of interpretation is that they are so obviously ad hoc. At the present time there does not seem to be any way of coming up with a more

general way of stating the facts, and of relating them to other facts about interpretations. This is precisely the point that I have been trying to make, however - there are syntactic generalizations which must be captured, but the semantic description is comparatively irregular and ad hoc.

2.3.2.4. Summary

In section 2.3.1. we showed that there were significant syntactic generalizations which could be captured if we ignored the interpretations of the sentences considered. We have now analyzed the full range of yes-no and tag questions as being derived from the deep structures characterized by (74) by application of the rules in (73). Inclusion of the tag questions into the inquiry, we have seen, has required the addition of only one rule, that of Tag question formation. However, when we begin to consider tag questions we found that, although they could all be derived by sequence of transformations in (73) from the same deep structures which underlie yes-no questions, the range of possible interpretations for sentences which these deep structures underlie must be extended in several unpredictable directions. The fact that there is no change required in the deep structures themselves, however, taken with the fact that only one rule must be added to the grammar for tag questions, argues quite strongly that this level of deep structure is linguistically significant.

Furthermore, these facts argue that there are components of the interpretation which should not be represented in or related to deep structure, but which should be associated with a shallower level of the derivation.

It will also be recalled that at the end of section 2.3.2.3. I indicated that the principles by which the interpretations of such sentences could be associated with the sentences were somewhat irregular. This is quite an acceptable result with respect to our hypothesis, since we have claimed that there are syntactic generalizations which can and must be captured by means of a level of deep structure, but we have left open completely the question of whether such an approach is also motivated on semantic grounds. As we have seen, even within this small range of data there are idiosyncracies of interpretation. These idiosyncracies operate at the level of derived structure, however; therefore they can not be brought to bear on the evaluation of the adequacy of our hypothesis, which only claims generalizations for the deep structure level.

2.4. Q and the higher verb.

As I noted in section 2.2.1, Katz and Postal (1964) proposed that the deep structure of every question contain the morpheme Q, which "indicates semantically ... that the sentence is a question, i.e., a paraphrase of an appropriate sentence of the form I request that you answer...." (p. 89). There have also been some recent proposals that the deep structure of all questions have not Q, but in fact something very much like the underlined

phrase in the above quote.

Katz and Postal note that the existence of tag questions and yes-no questions with sentence negations, i.e. questions which involve bias, indicate that there is an "important gap" in their theory. In essence, it is not at all clear how such biases can be worked into an analysis of the type they propose. We have seen, however, that yes-no and tag questions with sentence negation and with level intonation do not have the reading which is represented by Q at all; the kind of response which they elicit is different from the kind of response elicited by a "normal" yes-no question, and is constrained by the fact that they also involve an assertion.

I do not presume to try to fill in the gap which K-P observe, since I haven't the slightest idea how this could be done adequately. I will try to show, however, that any analysis which tries to maintain that Q has certain well-defined semantic properties peculiar to questions will be forced to give up some very fundamental syntactic generalizations.

Let us make the minimum assumption about what the revised analysis might look like. We assume that "Q-S" represents the K-P deep structure for a simple yes-no question. If we consider a yes-no question with sentence negation and rising intonation, then something will have to be added to the deep structure which represents the bias of such a question, since Q

does not have this property. Let us call this added thing "X". We represent the deep structure as, roughly, "Q-S and X".

While neither S nor X contain negation in the deep structure, the surface structure of this sentence, of which an example is "don't you go to school anymore?", clearly has negation in it. To get this surface structure, then, we require a transformation which will do the following, under the conditions noted:

- (89). If the questioned proposition is P and the expectation is also P then insert a negative into S and delete X, and whatever attaches it to Q-S.

So far so good. However, notice that this negative element must have the interpretation of sentence negation, since otherwise we would get a sentence which has an unbiased interpretation, like "Do you not go to school anymore?"

If this analysis also involves the scope rule for negation then it cannot possibly work, because there is always the chance that neg will be interpreted as verb phrase negation. If this analysis didn't involve the scope rule for negation, which is more likely in this context, then somehow it must be specified that the neg goes into the place where sentence negation would be found in the base.

At this stage there is a problem. In sentences which do not involve Q both sentence negation and verb phrase negation may show up as not in the AUX. If that happened here, however, it might just turn out that contraction would not apply, giving verb phrase negation only, after inversion applied. So what we would have to do is insert not simply neg or not by (89), but n't, in order to insure that it wouldn't be left behind when inversion applied. Furthermore, a simple question like "Did John not leave?" must have negation in its deep structure. How, then, are we to prevent this "true" negation from contracting and inverting, thus giving rise to the wrong surface structure for its previously determined reading, which is "Q-S", where S contains neg?

In sum, then it is necessary to arrange things so that the only environment in which negation will not contract is where it is verb phrase negation in a yes-no question, and the rule which inserts neg must in fact insert n't. Such ad hoc conditions on contraction and the distribution of n't suggest very strongly that the K-P analysis is unsuitable.

The higher verb analysis differs from the K-P analysis in that the questioned sentence does not contain a Q, but is rather dominated by something like I question whether.... It seems quite clear from the preceding discussion that any difficulty with an analysis with Q will be found in a higher

verb analysis as well. The source of this kind of uniformity lies in the insistence in both approaches that there is some component of the reading of a question which is invariant over all questions, and which can be represented by a single lexical or syntactic element in deep structure. The introduction of the question* interpretation can only serve to compound the difficulty, since an analysis with a new morpheme "Q*" or its higher verb equivalent will require another transformation like (89), but subtly different, which will result in exactly the same ad hoc conditions on n't as we have just been discussing.¹³

One further point should be made here. Even granting that the analysis which involves a rule like (89) can be made to work, a rule like (89) is questionable on universal grounds, since there appear to be no well-motivated transformations in any language which insert material into lower sentences.¹⁴

Footnotes to Chapter II

1. I have restated this rule and the others quoted below into a standard format.
2. Klima (1964)
3. A recent paper by McCawley contains within it a proposal that the underlying order of English sentences is not Subject-Verb-Object, but Verb-Subject-Object. This entails the notion that the so-called "inverted" word order is in fact the natural underlying order, and that the surface word order arises through the general application of an inversion rule; i.e., V-S-O S-V-O. This proposal involves a number of assumptions which I am unable to accept:
1) that each auxiliary is the main verb of a deep structure sentence, 2) that TENSE is the main verb of a deep structure sentence, 3) that there is a rule of "predicate-raising", and 4) that Verb-Subject-Object is a more "natural" order from the point of view of the simplicity of the grammar. For McCawley's full proposal see McCawley (1970).
4. Unless, of course, we wish to say that inverted structures arise as the result of the application of a number of formally unrelated rules. There is no evidence that there are structures which can be considered to be "intermediate" between inverted and uninverted structures, however.
5. N-scope=NP, N-scope=AdvP and, in general N-scope=any constituent are also possible. We shall not discuss them at any great length here. For more detailed discussions of N-scope see Jackendoff (1969b), Chomsky (forthcoming).
6. Personal communications
7. See Austin (1962, pp. 94-107).
8. c.f. Lasnik (1970).
9. This does not mean that a "no" answer is inappropriate, but only that the speaker in using a sentence of this type, would consider it to be inappropriate.
10. Klima (1964)
11. The reason for requiring that we deal with structures before inversion will be discussed in section 2.3.2.1. It is not crucial here.

Footnotes to Chapter II continued

12. The term [+v] represents $\left\{ \begin{array}{c} M \\ \text{have} \\ \underline{\text{be}} \end{array} \right\} .$

13. R. Lakoff has presented a concrete proposal which derives tag questions from deep structures involving the higher sentence. I suppose that.... In view of the preceding discussion I will not deal with this proposal here, since it relies on exactly these assumptions which I have indicated result in the loss of significant syntactic generalizations. For the details of R. Lakoff's proposal see R. Lakoff (1969).

14. Chomsky, class lectures, M.I.T., Fall 1969.

Chapter III

3. Notes on some other instances of inversion

3.1. Introduction

Besides yes-no questions, tag questions, question-imperatives and tagged imperatives, there are yet a number of other instances of inversion in English. Superficially, at least, these cases of inversion appear to be related to those which we have been considering in the preceding two chapters only formally. That is, they involve the same syntactic device of Inversion, but the conditions under which Inversion applies and the interpretation of the sentences to which it applies are different in these cases.

I have presented a number of arguments, based on the material in the preceding two chapters, that there are certain characteristics of sentences which can best be accounted for by an approach which involves a well-defined level of deep structure different from the level of semantic interpretation, and some rules of interpretation which operate on derived structures. In Chapter III, I present further evidence for this point of view. In particular, I will attempt to show that there is a rather intricate relationship between inversion, the placement of the morpheme EMPH, the presence of negation in the sentence and its position in the sentence, and the interpretation of the sentence. The consequence of this relationship, it will be shown, is such that the greatest degree of syntactic

generalization will be obtained by deriving all the sentences in question from one of a well-defined set of deep structures, and by applying certain fairly general rules of interpretation to the derived structures, as was the case with yes-no questions and tag questions, question imperatives and tagged imperatives.

In general I will follow the same pattern of argument in this chapter as I have in those preceding. For each case, I will discuss first the syntactic derivation and then the possible range of interpretation. From time to time I will summarize the conclusions and consolidate them into a more general framework.

3.2. "Emphatic" inversion

Examples of the kind of sentence which I will call an instance of "emphatic" inversion are given in (1).

- (1a). Boy, are you going to be in trouble!
- (1b). Don't you like mushrooms!
- (1c). Won't Mary be surprised!
- (1d). Was John put off by that remark!
- (1e). Is it snowing!

In 3.2.2. I will discuss how these sentences are emphatic. First, however, let us examine some plausible ways of deriving them.

3.2.1. Some syntactic possibilities

There seems to be no doubt that Inversion applies in this type of sentence in precisely the same fashion that it applies to the other constructions which we have discussed. The question which we must consider here is what is it that causes inversion in sentences like those in (1). There are two logical possibilities which we have discussed in other contexts: WH or EMPH. WH, as we have seen, (c. f. 2.1.1.) is the element which causes inversion in questions, and EMPH is an element which, we postulated, causes inversion in imperatives (c. f. 1.4.2.). It can be seen that there is no way to decide between these possibilities in terms of the framework we have proposed, since we have permitted optional interpretations of certain types of sentences. For example, we have claimed that a sentence like (2) may be interpreted either as a yes-no question, or as an imperative.

(2). Will you feed the baby.

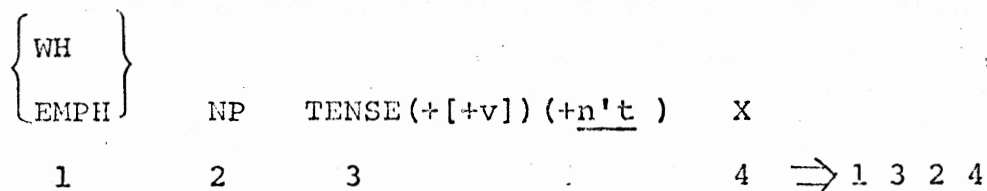
Since we have argued that this optionality in interpretation is not reflected in the syntactic structure, the possibility exists that sentences like those in (1) may also be derived from the same deep structure as (2).

I believe that it can be shown, however, that EMPH can be given certain semantic properties which will account for the interpretation of sentences like those in (1), as well

as a number of other cases which I will discuss in this chapter. Since EMPH has the desired syntactic properties, the choice of EMPH over WH must rely on a treatment of the semantic characteristics of each. If it can be shown that in a large number of cases EMPH correctly predicts what the interpretation will be, while WH does not, then we have provided some justification for our choice. For the purposes of the syntactic analysis, then, we will proceed with the working hypothesis that EMPH is what causes the inversion in the sentences under consideration, as we will try to provide justification for this choice in section 3.2.2.

Since EMPH can appear in imperative sentences, there seems to be no principled reason why it cannot also appear in declaratives. Let us say, then, that EMPH constitutes an environment for the application of Inversion just as WH does.

(3). Inversion (revised):



Generalization of emphatic inversion correctly predicts that the sentences which we are considering may or may not have contracted negation which inverts with the auxiliary. That is, as well as emphatics like (1a), (1d), and (e), we will also get sentences like (1b) and (1c) since inversion follows neg-contraction.¹

3.2.2. Interpreting emphatics.²

Up until this point we have been referring to the sentences in (1) as "emphatics". However, it can be seen that the interpretation of such sentences differs significantly from the interpretation of another type of sentence which has also been termed "emphatic". Compare the examples in (4) with those in (5).

(4a). You will be surprised.

(4b). You will be surprised.

(4c). You will be surprised.

(5a). Will you be surprised.

(5b). *Will you be surprised.

(5c). Will you be surprised.

There are four important points to be noted about this group of sentences. First, (5b) is ungrammatical, and the reason for this is certainly not obvious. Second (4b) is three-ways ambiguous, and (4c) is two-ways ambiguous. Third, the sentences in (5) are not ambiguous, and fourth, their interpretation corresponds to one of the interpretations of (4b) and (4c).

3.2.2.1. Non-inverted emphatics.

Consider first the interpretation of the sentences in (4). One possible reading of each sentence is that the stressed word is in contrast with some other word which carries a similar semantic function. This is illustrated by the following dialogues.

(6a). A: If Nixon is elected President, Bill will
be very surprised.

B: { And } you will be surprised.
 { No, }

(6b). A: If Nixon is elected President, I might
be surprised.

B: (No,) you will be surprised.

(6c). A: If Nixon is elected President, I will be
disappointed.

B: { And } you will be surprised.
 { No, }

In these dialogues, you contrasts with Bill, will contrasts
with might, and surprised contrasts with disappointed.

The second possible reading for (4b) and (4c) both is what
I will call the "superlative emphatic" interpretation. In each
case, no matter where the stress is placed, the speaker is
expressing the notion that the subject of the sentence will
possess a particular attribute, or engage in a particular
activity, to a considerable degree. The distribution of stress
in these cases is curiously like that of really, and the
interpretation of these sentences is also very much like that
of sentences with really.³

(7a). You { will } be surprised.
 { will really }

(7b). You will be $\left\{ \begin{array}{l} \text{surprised.} \\ \text{really surprised.} \end{array} \right\}$

There is also a third interpretation of (4b) which is illustrated by the following dialogue.

(8). A: If Nixon is elected President I $\left\{ \begin{array}{l} \text{might not} \\ \text{won't} \end{array} \right\}$
be surprised.

B: You will be surprised.

That is to say, not only may will contrast with another modal, but it may also contrast with another modal with negation, or with itself plus negation. We have will/might, will/might not, or will/won't. A related case is illustrated by (9), where the contrast lies in the time denoted by TENSE.

(9). A: Bill has a wart on his nose.

B: Bill did have a wart on his nose. However,
it was removed.

It is interesting to note that when the stress falls on the modal the range of contrast is defined by the range of possible denotations of the AUX. The AUX may contain TENSE, TENSE M, or TENSE M neg. Consequently, the single stressed modal may denote a contrast in TENSE, in the modal, or with neg. Past tense, for example, may denote either past time or uncertainty. In contrast, then, present tense may indicate either present time or certainty. Or, as we have noted, it may indicate affirmation, as a contrast with denial.⁴

For the present let us lump these three possible interpretations together as "contrast", with the general observation that the contrast may range over the elements in the AUX which may show up as a single stressed item in surface structure.

Our problem now is to account for the ambiguity encountered in the sentences of (4). A hint is given by the examples in (7). We have already employed a morpheme EMPH to account for the inversion in imperatives and in emphatics like (5). Let us hypothesize now that EMPH may be attached to certain constituents, and that stress is placed on a constituent to which EMPH is attached. Underlying the sentences in (7) will then be roughly the following.

(10a). You will $\left\{ \begin{array}{l} +EMPH \\ \text{really} \end{array} \right\}$ be surprised.

(10b). You will be $\left\{ \begin{array}{l} \text{surprised } +EMPH. \\ \text{really surprised.} \end{array} \right\}$

A sentence like (4) will have (11) underlying it.

(11). You+EMPH will be surprised.

We may now appeal to Jackendoff's notion of attraction to focus. Jackendoff (1969b, Ch. 5) noted that there are many adverbs which may attract to the point of focus within their scope. One of the clearest examples of this behavior is even (c.f. Anderson, 1969).

(12a). Even John bought a yoyo at the toystore.

(12b). Even John bought a yoyo at the toystore.

(13a). John even bought a yoyo at the toystore.

(13b). John even bought a yoyo at the toystore.

In (12) the scope of even is John, so whether focus is the normal end of the verb phrase, toystore, or the point of emphasis, yoyo, even is not attracted to focus. However, in (13) even may have the verb phrase within its scope. In (13a) focus is toystore, so that this sentence may have the interpretation of (14b). In (13b) focus is yoyo, so that this sentence may have the interpretation of (14c). In (13a) the scope of even may remain the entire sentence, giving the interpretation of (14a), due to the fact that under normal intonation the entire sentence may constitute the focus.

(14a). It is even the case that John bought a yoyo
at the toystore.

(14b). Even at the toystore John bought a yoyo.

(14c). John bought even a yoyo at the toystore.

Let us consider really, now. Really bears a certain resemblance to even, in that under normal intonation both may have the entire sentence as scope. One reading of (15) is (16).

(15) Bill really was elected Mr. America in 1904.

(16). It is really the case that Bill was elected
Mr. America in 1904.

One way that really differs from even is in the fact that even can attract to a constituent which is not normally in focus

only when that constituent is emphatically stressed, while this is not the case with really. To give a concrete example, even will not attract to the verb of a sentence unless that verb has the stress peak. Normally focus will include the verb phrase, but not the verb itself.

(17a). George even scrubbed the floors. ("What George even did was scrub the floors.")

(17b). George even scrubbed the floors. ("What George even did to the floors was scrub them.")

Really, on the other hand, will attract to any element which has the semantic property that it can be discussed in terms of degree. (Let us call this property the property "D".) Consider the following examples.

(18a). Bill really has a long nose.

(18b). Harry really crushed a large beetle.

(18c). Harry really crushed that beetle.

(18d). George really gave Mary a suspicious look.

(18e). The bomb really went off with a bang.

(18f). John really likes ice cream.

(19a). It really is midnight.

(19b). It really seems that your brother has a long nose.

(19c). Harry really admitted that he had crushed that beetle.

(19d). John really wrote Bill a check.

The lexical items in (18) which have the property D are long, crush, large, suspicious, bang, and like. In (19a) there is no such element, and in the other sentences in (19) the D-items do not fall within the scope of really.

It seems likely that the class of things to which really may attract have to do with states or with changes in state. So for example, crush involves a change of state, becoming crushed, while long and suspicious describe states. However, the use of really can be extended in a metaphorical way to almost anything.

(20). Bill really wrote that letter. Yessir, he just churned it out.

In any case, whatever the class of things to which really may attract may be, it is certainly not true that there are always in focus, where focus is determined by the stress contour of the sentence. What seems to be going on is that really is an element by itself defines a position of focus in the sentence. That position makes a difference is shown by the examples in (21), where in order for really to attract to a constituent the constituent must be emphatically stressed. Otherwise really only has the entire sentence as its scope.

(21a). Really, Bill $\left. \begin{array}{c} \text{wrote} \\ \text{wrote} \end{array} \right\}$ that letter.

(21b). Really, Bill has a $\left. \begin{array}{c} \text{long} \\ \text{long} \end{array} \right\}$ nose.

(21c). Really, John { likes } skydiving.
 { likes }

Of course, when stress shows up another reading is introduced, in which really is not attracted to the stressed element, and the emphasis is interpreted as contrast. This is fairly straightforward and need not concern us further.

The examples in (4) suggest that EMPH also has this property of inducing focus on any constituent within its scope that has the property D. Just in case there is no such element within the scope of EMPH, the superlative emphatic interpretation is impossible. In the following examples the scope of EMPH is the verb phrase, or the entire sentence.

(22a). It is midnight.

(22b). It does seem that your brother has a long nose.

(22c). Harry did admit that he had crushed that beetle.

(22d). John did write Bill a check.

In the examples below the scope of EMPH is the subject NP.

(23a). You were surprised.

(23b). Bill has a long nose.

(23c). Mary likes skydiving.

Incidentally, our analysis of these emphatics justified to a certain extent by the fact that it correctly predicts that if EMPH is on a verb the superlative emphatic interpretation will be impossible, if the verb lacks the property D and is not found in the AUX (i.e. is not be or have). We have claimed that

this interpretation is possible only when the scope of EMPH is the verb phrase. If EMPH is attached to a verb in the verb phrase, then it cannot have VP-scope, but if it is attached to be in the AUX, then it will have this scope. Consider the following examples.

(24a). John looked surprised.

(24b). John saw a large beetle.

(24c). John has a terrible cold.

(24d). I read a great book yesterday.

The only possible interpretation of these sentences is a contrastive one: John didn't say he was surprised - he looked surprised; John didn't eat a large beetle - he saw one; you say that John doesn't have a terrible cold, but he has a terrible cold; I didn't lost a great book yesterday - I read a great book yesterday. Notice that with the emphasized element in the AUX, however, the superlative emphatic interpretation becomes possible.

(25a). John is surprised.

(25b). That was a large beetle.

(25c). That is a terrible cold you have.

(25d). That is a great book I read yesterday.

3.2.2.2. Inverted emphatics.

As I observed early in the preceding section, inverted emphatics are not ambiguous like non-inverted emphatics may

be. The interpretation of inverted emphatics is that of superlative emphasis, as can be seen by comparing sentences which contain elements with the property D in the verb phrase with those that do not.

- (26a). Does Bill have a long nose!
- (26b). Did Harry crush a large beetle!
- (26c). Did Harry crush that beetle!
- (26d). Did George give Mary a suspicious look!
- (26e). Did that bomb go off with a bang!
- (26f). Boy, does John like ice cream!
- (27a). ?Boy, is it midnight!
- (27b). ?Does it seem that your brother have a long nose!
- (27c). ?Boy, did Harry admit that he had crushed that beetle!
- (27d). ?Did Bill write Harry a check!

It is the case that there can be emphatically stressed elements in an inverted emphatic. Since we have been attributing emphatic stress to EMPH attached to a constituent, and inversion in emphatics to sentence-initial EMPH, it seems that we are forced to assume that there can be more than one EMPH in any given sentence. This is quite an acceptable position to be in, because of the numerous clear cases in non-inverted emphatics where more than one stress peak is present.

- (28a). John didn't tell Mary the story: he gave her the magazine.

(28b). Maybe you like to swim in the ocean, but I prefer to float in a bathtub.

I will assume that EMPH is distributed through the sentence by a copying transformation similar to that proposed for WH in Kuroda (1969). While an may only attach to NP's, EMPH can attach to almost any element.

A sentence like (29a) and (29b) as its underlying structure, and (29c) as an intermediate stage of the derivation. Similarly for (30) and (31).

(29a). Will you be surprised.

(29b). EMPH you will be surprised.

(29c). EMPH you+EMPH will be surprised.

(30a). Will you be surprised.

(30b). EMPH you will be surprised.

(30c). EMPH you+EMPH will be surprised+EMPH.

(31a). You'll be surprised.

(31b). EMPH you will be surprised.

(31c). You will be surprised+EMPH.

One peculiarity of the rule which distributes EMPH is that sentence-initial EMPH may delete, as in (31) but need not, as in (29) and (30).

Since the examples in (26) have the superlative emphatic interpretation, we must explain how this interpretation is assigned if EMPH is in sentence-initial position, as it must be if inversion is to apply. If we say that EMPH has the

property of attracting to focus within its scope, just as not does, then we have not added any new convolution to the theory of grammar, and we account for the data.

It happens that if EMPH is in sentence-initial position it will not attract to focus in the subject, and as the examples in (27) show, it must attract the focus in the verb phrase. EMPH cannot have the interpretation that it was when it appears in the AUX in contrast with sentence negation.

It is not at all clear why EMPH can have sentence scope when it is in the AUX, but can only have verb phrase scope when it is in sentence-initial position. Since inverted emphatics only have a verb phrase scope interpretation we must state this as a fact until some motivated explanation is forthcoming.

It seems also that EMPH with VP scope limits the interpretation of emphatically stressed elements within the scope to the superlative emphatic interpretation. Normally such elements could also have a contrastive interpretation. Compare the examples in (32).

(32a). Tom's face was red, rather than green.

(32b). *Boy, was Tom's face red, rather than green.

(32c). *Tom's face was red, rather than green.

While (32a) has the contrastive interpretation with stressed red and green, it seems that (32b), with the intonation indicated

by the comma, is somewhat strange, and in the same way that (32c) is strange. If this judgement is accurate then it would be correct to say that a contrastive interpretation of emphasis within the scope of EMPH is impossible.

The last point about emphatics which was noted at the beginning of section 3.2.2. is that a sentence like (33) is unacceptable.

(33). Will you be surprised.

It does not appear, however, that all such examples are equally bad. For example

(34). Isn't he the sweetest thing you've ever seen.

(34b). Boy, are we gonna bomb them.

(34c). Boy, did we have a good time.

I am unable to say that these examples are completely natural-sounding, yet they sound somewhat better than (33). It may be that such examples are grammatical, but that the stress pattern makes them awkward, or the solution may be deeper. The question, I think, should be left open until we arrive at a better understanding of the relationship between syntax and prosody, which I do not expect to do in this work.

3.2.3. Summary.

Probably the most significant observation concerning the inverted and non-inverted emphatics is that both have the superlative emphatic interpretation. We argued that this fact

could be captured very nicely by assuming that one could have EMPH in the AUX position of the sentence, or in sentence-initial position. We showed how this could be used to explain a number of phenomena: a) inversion in emphatics, b) the ambiguity of non-inverted emphatics with EMPH in the AUX, and c) the synonymy of inverted emphatics and non-inverted emphatics under one interpretation. We also showed how EMPH behaves like certain adverbs with respect to the assignment of scope.

This analysis of EMPH also argues strongly against the suggestion that inverted emphatics might be derived from sentences with underlying WH. If this were the case we would have no way of accounting for the synonymy mentioned above, which is intimately related with the scope of EMPH in a number of positions in the sentence. It would be too much to expect that WH could be made to perform all the functions of a question particle and of EMPH besides, particularly since WH-words may themselves be contrastively stressed.

(35). I wonder where he is, not who he is.

It seems conceivable, however, that WH and EMPH are really a single morpheme which contains a binary feature distinction. I cannot see an overwhelming amount of evidence which would force us to adopt this analysis at present.

3.3. So and neither

The next case of inversion to be considered is that which takes place after so and neither. I will be considering sentences like the following.

At first glance there seems to be little in common between this use of so and the other we have discussed, except for the fact that so is involved in both bases.

A third use of so is illustrated by the following examples.

(42a). Everyone said that Wilma would stay the night, and so she did.

(42b). Everyone said that Wilma wouldn't stay the night, and so she wouldn't.

Aside from the difference in interpretation, the only difference between this use of so and the use illustrated in (36) is that the latter involves inversion, while this one does not. Is there any way that we can account for inversion where it occurs, and at the same time relate the syntactic phenomena in some consistent and interesting way?

One possibility that suggests itself is that inversion in the examples in (36) is caused by some deep structure morpheme, like WH or EMPH. Since we have not been treating inversion as an optional rule, let us see if we can plausibly maintain the point of view that it is obligatory by postulating an EMPH in sentences like those in (36).

(43a). John likes Mary and so EMPH Bill does,

"John likes Mary and so does Bill."

(43b). John doesn't like Mary and neither EMPH Bill does.

"John doesn't like Mary and neither does Bill."

As a point of departure let us say that the structure of the sentences in (36) is roughly that of (43). We observe that the difference between these sentences and those in (42) is simply the presence of EMPH in one case and the absence of EMPH in the other. We may now consider the question of whether so in each case has a source that is not so, and whether the source of so is the same in all cases. At first glance one might be inclined to relate the sentences in (42) to the construction illustrated in (44).

(44a). John said that Mary wouldn't leave, and
leave she didn't.

(44b). John expects that Mary will eat all the cheese,
and eat all the cheese she will.

(44c). John believes that Mary is stupid, and stupid
she is.

(44d). John claims that Mary isn't a lady, and a lady
she isn't.

A transformation would derive the sentences in (45) from those in (44) above.

(45a). John said that Mary wouldn't leave, and so she
didn't.

(45b). John expects that Mary will eat all the cheese,
and so she will.

(45c). John believes that Mary is stupid, and so she is.

(45d). John claims that Mary isn't a lady, and so she
isn't.

There are a number of reasons why we would not want to say that there is a formal transformational relationship between the two constructions. First of all, the construction in (44) can show up where so cannot, as in (46).

(46a). John hoped that Mary wouldn't leave, but

{leave} she did.
{*so }

(46b). John expected Mary to eat all the cheese, but

{eat all the cheese} she didn't.
{*so }

(46c). John thinks that Mary is a lady, but { a lady }
she isn't. { *so }

A transformation, then, which derived so from such a fronted verb phrase as eat all the cheese would have to be constrained just in case the clauses differed in negation, as these examples show. Then again, the rule would have to account also for the appearance of so in place of the noun phrase a lady in a sentence like (45d). While it is implausible that there is a transformation which replaces a noun phrase by an adverb, it is certainly not impossible. There is, however, a stronger argument against this analysis than the mere implausibility of the transformation involved.

It seems to be the case that in fact the same sentence may contain both so and the verb phrase, predicate nominative or predicate adjective. That is, it appears that the presence

of so is independent of the deletion. Consider the following examples,⁵

- (47a). John said that Mary wouldn't leave, and so she didn't leave.
- (47b). John expects that Mary will eat all the cheese, and so she will eat all the cheese.
- (47c). John believes that Mary is stupid, and so she is stupid.
- (47d). John claims that Mary isn't a lady, and so she isn't a lady.

On the other hand, it is quite clear that the deletion does not depend on the presence of so.

- (48a). John said that Mary wouldn't leave, and she didn't.
- (48b). John expects that Mary will eat all the cheese, and she will.
- (48c). John believes that Mary is stupid, and she is.
- (48d). John claims that Mary isn't a lady, and she isn't.

Since there is an independent rule of ellipsis which will account for the deletion in sentences like (48), and (44), it seems quite reasonable to suppose that it does, in fact. There appears to be no reason to derive so from a verb phrase, nor is it clear that it can be done. For dialects in which

sentences like those in (44) are grammatical, there must be an independent rule of (predicate) topicalization.

It seems that there is a similar argument for the case where inversion occurs after so. The following examples show that often after so, and most of the time after neither, it is not necessary to delete the verb phrase.

(49a). John likes Mary and so does Bill like Mary.

(49b). John doesn't like Mary and neither does Bill like Mary.

(49c). The Yankees won't win the pennant, and neither will the Red Sox win the pennant.

(49d). The Orioles will win the pennant, and so will the Mets win the pennant.

(49e). I don't care who wins the pennant, and neither does Bob care who wins the pennant.

As we have seen, it is possible to delete the verb phrase, etc. in cases like these. The rule of ellipsis is the same as the rule which applies in sentences like (44) and (48), above. In this case also it does not appear that a rule which derives so is plausible.

It is still not completely clear, however, what is going on here. Notice that while we can have either so or neither in case inversion applies, we can only have so if inversion does not apply.

(50). They said she wouldn't leave, and *neither she will.
so she won't.

Furthermore, it is impossible to get (51).

(51). *John didn't want to leave, and so didn't Bill.
If we consider neither to be derived from neg+either, where either is the variant of so after neg, then we can characterize what is going on in (50) and (51) as follows: if EMPH is present then the rule neg+either neither must apply, and if EMPH is absent, then this rule must not apply.

Let us recall that too and either behave in much the same fashion, with either appearing only in the environment of negation. Notice that both too and either have the property that if ellipsis has not applied they must follow the verb phrase.

(52a). Bill caught a tuna fish and John caught a tuna fish too.

(52b). *Bill caught a tuna fish and John

{	caught too.
	did too catch.

(53a). Bill didn't catch a tuna fish and John didn't catch a tuna fish either.

(53b). *Bill didn't catch a tuna fish and John didn't either catch a tuna fish.

However, when the adverb precedes the AUX the distribution is somewhat different.

(54a). Bill caught a tuna fish and John too caught a tuna fish.

9. too EMPH
10. so EMPH
11. either EMPH
12. either EMPH
12. too
13. so
14. either
15. EMPH

We have discussed in a previous section the treatment of 15. If 11 and 14 turn up, then a rule of interpretation like the some-any rule will rule them out as violations of some kind, since either requires a negative environment. Combinations 8 and 13 are also straightforward: not will go into the AUX, and so will remain in sentence-initial position.

From 7 we expect one of two results. Either not will be emphasized, as in (63a), or we will get an inverted emphatic, as in (63b).

(57a). John is not a golddigger.

(57b). Isn't John a golddigger.

In order to account for (57a) we need a rule which attaches EMPH to not optionally. We assume that subsequent rules will treat not+EMPH as though EMPH were a feature on not. The same will be true for other constituents to which EMPH may attach.

To a sequence like 1 we will first apply the rule which moves too into a non-initial position in the sentence, either after the subject or after the verb phrase. Then 1 can be handled like 7. The results of this will be one of the following.

(58a). John too is not a golddigger.

(58b). John is not a golddigger too.

(58c). Isn't John too a golddigger.

(58d). Isn't John a golddigger too.

If so or too are followed by EMPH then the same rule which attaches EMPH to not may apply, and the resulting element is moved into the AUX in the same position that not would be.

(59). They claim that Bill is not a cowboy, but he

is $\left\{ \begin{array}{l} \underline{\text{too}} \\ \underline{\text{so}} \end{array} \right\}$ a cowboy.

This rule is optional also. If it does not apply we get

(60a). Bill is a cowboy and so is Harry.

(60b). Bill is a cowboy, and boy, $\left\{ \begin{array}{l} \text{is Harry one too.} \\ \text{is Harry too one.} \end{array} \right\}$

In the case of 12 too will be placed in one of its possible positions, and furthermore, if not is present, as in 4, then neg-placement will apply. With 5, so is not moved, but not will be. Corresponding to these three combinations will be sentences like the following.

- (61a). John too is a cowboy.
- (61b). John is a cowboy too.
- (61c). John too isn't a cowboy.
- (61d). John isn't a cowboy too.
- (61e). ...and so John isn't (a cowboy).

This leaves us with 2, 3, and 6. We will consider so and either to be optional variants in the case of 2 and 3, so that not { so } becomes neither before EMPH. This gives
{ either }

- (62). ...and neither will Bill.

Combination 6 will be treated like 4, with placement of either instead of too, giving

- (63). ...and Bill won't (mow the grass) either.

A review of the preceding discussion will show that the following ordered rules are required.

- (64a). not { so } EMPH \implies neither EMPH
{ either }
- (64b). Placement of too and either
- (64c). Incorporation of EMPH into not, so or too
- (64d). Placement of not, so+EMPH and too+EMPH
- (64e). Attachment of EMPH
- (64f). Inversion

The rule (64b), which is optional, precedes (71c) so that optimally we may get emphatic inversion with too in the sentence or emphatic too in the AUX (c.f. 9 and 10 below).

What follows are some sample derivations, corresponding to the fifteen combinations of (62).

- (65). 1. not too EMPH NP TENSE X
not \emptyset EMPH NP TENSE X too / (64b)
not+EMPH NP TENSE X too / (64c)
 \emptyset NP TENSE not+EMPH X too / (64d)
(c.f. example (58b))
2. not so EMPH NP TENSE X
neither EMPH NP TENSE X / (64a)
neither EMPH TENSE NP X / Inversion (64f)
(c. f. example (63))
3. same as 2
4. not too NP TENSE X
not \emptyset NP TENSE X too / (64b)
 \emptyset \emptyset NP TENSE not X too / (64d)
(c. f. example (61d))
5. not so NP TENSE X
 \emptyset so NP TENSE not X / (64d)
(c. f. example (61e))
6. not either NP TENSE X
not \emptyset NP TENSE X either / (64b)
 \emptyset \emptyset NP TENSE not X either / (71d)
(c. f. example (53a))
7. not EMPH NP TENSE X
not+EMPH NP TENSE X / (64c)
 \emptyset NP TENSE not+EMPH X / (64d)
8. not NP TENSE X
 \emptyset NP TENSE not X / (64d)
9. too EMPH NP TENSE X
too+EMPH NP TENSE X / (64c)
 \emptyset NP TENSE too+EMPH X / (64d)
(c. f. example 59))
10. too EMPH NP TENSE X
EMPH NP TENSE X too / (64b)
EMPH TENSE NP X too / Inversion (64f)
(c. f. example (58d))

11. same as 9
12. semantically anomalous
13. too NP TENSE X
 ∅ NP TENSE X too / (64b)
 (c. f. example (61b))
14. so NP TENSE X
 (c. f. example (42a))
15. semantically anomalous
16. EMPH NP TENSE X
 EMPH TENSE NP X /Inversion (64f)
 (c. f. section 3.2)

3.3.2. Interpreting so

First, it is important to take into consideration the three different interpretations of so as it is used in the examples of section 3.3.1. One of each is repeated below for convenience.

(59). They claim that Bill is not a cowboy, but he is so a cowboy.

(36a). John likes Mary and so does Bill.

(42a). Everyone said that Wilma would stay the night, and so she did.

Sentence (59) is synonymous with (66).

(66). They claim that Bill is not a cowboy, but he is a cowboy.

Emphatic stress on so in the AUX is contrastive with not; it represents an affirmation in contrast to a denial.

Sentences like (36a) contain a contrast also. In this

example the subjects of the two clauses are in some sort of contrastive relationship. It turns out, however, that the constituent in contrast need not be the subject with this use of so. For example,

- (67a). Mary will eat the pizza, and so will she drink the Coke.
- (67b). Mary won't eat the pizza, and neither will she drink the Coke.
- (67c). Harry found a pigeon in the garden, and so did he find one in the park.
- (67d). Harry wouldn't give Mary a kiss on her birthday, and neither would give her one on his.

Finally, so can be used as it is in (42b). In this case so seems to have the meaning of "in fact" or "indeed". There are cases where this use of so leads to redundancy, in precisely the same way that indeed and in fact do in similar cases.

- (68a). ?John acknowledged that Mary had cut off all her hair, and

{	so
	indeed
	in fact

 she had.
- (68b). ?John is a nice guy, and

{	so
	indeed
	in fact

 he is.

(68c). ?Mary admitted secretly that she hadn't quit
 school, and $\left. \begin{array}{l} \text{so} \\ \text{indeed} \\ \text{in fact} \end{array} \right\}$ she hadn't.

The analysis of so sentences which appears in the preceding section is based on the supposition that there is one lexical item so which is subject to one of these interpretations depending on the context in which it is found. We have shown how a large number of sentences can be generated if we accept the existence of only one so. Now we shall show that it is possible to devise rules of interpretation for these cases which are reasonably general.

The first thing to be noted in this respect is that when inversion occurs, so appears to be attracted to focus. If we consider so to have roughly the same interpretation as too, then the following sentences illustrate the attraction of so to focus in case of inversion.

(69a).	John likes Mary and	$\left. \begin{array}{l} \text{so does Bill (like Mary)} \\ \text{Bill too likes Mary} \\ \text{Bill } \left\{ \begin{array}{l} \text{likes} \\ \text{does} \end{array} \right\} \text{ Mary too} \end{array} \right\}$
(69b).		
(69c).		
(69d).		
(70a).	Bill likes Mona and	$\left. \begin{array}{l} \text{so does } \left\{ \begin{array}{l} \text{Bill} \\ \text{he} \end{array} \right\} \left\{ \begin{array}{l} * \emptyset \\ \text{like Mary} \end{array} \right\} \\ * \left\{ \begin{array}{l} \text{Bill} \\ \text{he} \end{array} \right\} \text{ too likes Mary} \\ \left\{ \begin{array}{l} \text{Bill} \\ \text{he} \end{array} \right\} \left\{ \begin{array}{l} \text{likes Mary} \\ * \text{does} \end{array} \right\} \text{ too} \end{array} \right\}$
(70b).		
(70c).		
(70d).		
(70e).		

- | | | | |
|--------|---------------------|-----------------------------|------------------------|
| (71a). | John likes Mary and | } so does Bill (*like Mona) | |
| (71b). | | | *Bill too likes Mona |
| (71c). | | | Bill likes Mona { *too |
| (71d). | | | ,too } |

Example (71d) is an instance of too with sentence scope.

The interpretation of (71d) is (72).

- (72). John likes Mary and it is the case, too, that
Bill likes Mona.

Or, we could leave out it is the case and that in (72) and get the same interpretation.

Example (70c) shows that if too follows the subject then its scope is the subject NP. This example is starred precisely because the too is imposing a contrast between subjects that does not exist, since they are identical. (69b), on the other hand, is acceptable, since it contains a real contrast. (71b) suggests that if the subjects were contrasted by too, then the predicates must be identical. Compare (71b) with (73), where this is the case.

- (73). John likes Mary and Bill too does.

We may say as a general principle that when constituents in two clauses are contrasted by too they must not be identical or coreferential, and everything else in the two clauses must be identical. If this is correct, as it seems to be from considering (70c), then we would expect a sentence like (71c) to be unacceptable by virtue of having violated this principle. If the

scope of too in (71c) is the verb phrase, or if it is Mona, then we would predict that it would be unacceptable, since the material not in contrast, namely the subject, is not identical to the subject of the preceding clause. The following example shows that the scope of too can be a verb phrase.

(74). John burned the toast and $\left\{ \begin{array}{l} \text{he} \\ *Bill \end{array} \right\}$ spilled the
milk too.

In (69c) and (69d), however, the scope of too cannot be the verb phrase, since it is not being contrasted.

What seems to be going on here is that the scope of too is the entire sentence, and that it is attracted to the constituent in focus, whether it be the subject, the verb phrase, or a constituent of the verb phrase. The intonation plays a small role here, since if the only constituent in contrast is the sentence itself, then only (71d) is possible. Or, to put it another way, if the intonation is that of (71d) then attraction to focus may not apply.

So, it appears, is like too, except for the fact that so must attract to focus within the sentence. This is where EMPH comes in. We recall that EMPH follows so at the beginning of the sentence. EMPH has the property that it attracts to focus, where "focus" must appear in the verb phrase and be defined by the property D when EMPH stands alone in the pre-sentence. We found, too, that EMPH attracts to focus if

focus is defined by emphatic stress on a constituent.

All this suggests an analysis as follows: so has the property of sentential scope, while EMPH has the property of attraction to focus. In the semantic representation the sequence so+EMPH is considered as a unit with sentential scope and attraction to focus; that is, the greater scope of so supersedes the more restricted scope of EMPH, while the mobility of EMPH supersedes the immobility of so.

We would predict from this that in the absence of EMPH we would not get attraction to focus. In fact, we would predict a reading which corresponds to that of sentences with too with comma intonation. There will also be a difference, however, which we have yet to explain. Consider the following sentences.

(75a). They said that John would burn the toast, and

{ he did, too. }
{ so he did. }

(75b). They said that Bill wouldn't spill the milk, and

he didn't, { too. }
{ either. }

so he didn't.

(75c). John raises pigeons, and { Mary breeds hawks, too. }
{ *so Mary breeds hawks. }

(75d). Charlie won a car, but { Mary lost a shoe, too. }
{ *so Mary lost a shoe. }

While so in these examples may only be used to contrast the occurrence of an event with the non-occurrence of the same event, too may be used to express this contrast, or to express a contrast between one event and another.⁶ I see no particular explanation for this fact, except to say that it is a fact.

The interpretation of this so is that of re-affirmation, or of asserting what had previously been believed. In the case of deny we would expect that the distribution of negation would be a mirror-image of the distribution of negation in the case of say, since semantically deny is say that it is not the case. The rule for interpreting so will assign to the sentence which contains it some representation of the notion that this sentence is asserting what a previous sentence merely characterized as having been believed by others.

(76a). Mary denied that she was over forty, and so she

{ wasn't. }
{ *was. }

(76b). Mary denied that she wasn't under forty, and so

she { *wasn't. }
{ was. }

Sentence (76b), especially with was, is rather complicated. Several minutes of deep thought will show, I believe that the "judgements" are correct.

3.3.3. Summary.

Let us first summarize the rules which were discussed in section 3.3.1.

(81). EMPH-attachment (optional):

- a) EMPH X A Y
 1 2 3 4 \Rightarrow 1 2 3+1 4
- b) # EMPH
 1 2 \Rightarrow 1 \emptyset

Let us now consider the following question: To what extent would the grammar be simplified or complicated if instead of one so we had three so's? This question is motivated by the observation made in the preceding section that the interpretation of so differs according to the context in which it is found.

Let us say that so₁ is the one found in inversion, that so₂ is the one found in the AUX with contrastive stress, and that so₃ is the third so.

A look at the preceding rules reveals that three of them mention so: (77), (79), and (80). Rule (77) applies to so₁, and mention of this in the rule will not complicate the rule itself; we will, however, be concerned with accounting now for the derivation of sentences with the sequence

not $\left\{ \begin{array}{l} \underline{so}_2 \\ \underline{so}_3 \end{array} \right\}$ EMPH

in the presentence. Rule (79) will apply only to so₂, but we must then worry about the sentences

$\left\{ \begin{array}{l} \underline{so}_1 \\ \underline{so}_3 \end{array} \right\}$ EMPH in the

presentence. Rule (79) is optional for not and too, so we shall have to add to it the condition that it is obligatory

for so₂. Or, perhaps, we might wish to have so₂+EMPH as a lexical entry. Finally, rule (80) will require no change except the change of so to so₂.

Basically, what would happen if we chose to have three so's instead of one is that we would find ourselves with a lot of sequences in deep structure which seem to be perfectly acceptable, except that they do not correspond to any well-formed surface structures. In some cases, too, the wrong so will turn up in the right place, so-to-speak, giving a good surface structure with the wrong meaning. A sentence like "...and so he did" could, under this analysis, come from any one of the three combinations in (82).

(82). ...and $\left\{ \begin{array}{l} \text{so}_1 \\ \text{so}_2 \\ \text{so}_3 \end{array} \right\}$ he did.

Then again, (83a) will end up as (83b).

(83a). not so₃ EMPH he did.

(83b). *so didn't he.

What seems to be the problem here is that the rules which we have stated are rather biased against the notion that there are three so's, and so they are simply unable to accept this notion gracefully. A large part of the difficulty arises, no doubt, from our attempt to treat too, either and so as fundamentally the same kind of element, and also from our attempt to work in

EMPH. I have no doubt that a solution involving three so's can be worked out along other lines, but for the sake of comparative brevity I will not try it here. Rather significantly, such an approach would entail giving up the notion of inversion after EMPH in the context of so and neither. It is worthwhile to see how much mileage one can get out of something like EMPH, since it is never very clear until all the evidence has been considered that it exists.

As luck would have it, our analysis of so falls right in with our hypothesis that there are some things about the interpretation which you cannot determine until certain optional rules have applied. Since this is so, it might induce those who doubt the hypothesis to propose an alternative analysis for so, neither, too, emphatic inversion, non-inverted emphatics, and either, which is certainly desirable.

It is interesting to note, also, that the way in which the interpretations shift from derivation to derivation in material discussed here in 3.3 is very much like the way it was seen to happen in derivations in previous sections, and in Chapter II. Almost invariably the shift in interpretation can be directly attributed to the movement of an element in the sentence whose scope depends on its position and the location of foci in the sentence. Most likely we would want to say that this is not an accident, that exactly this kind of shift

in interpretation should in principle be permitted by the theory of grammar.

3.4. Inversion after neg, and so on.

In this section I will consider the phenomenon which has actually been referred to by some phrase like "inversion after negation". Some examples:

- (84a). Never will we see such glory again.
- (84b). Not once has he listened to what his father was saying.
- (84c). At no time will we allow such a thing to happen.
- (84d). In no way could he climb the fence.
- (84e). Rarely has so little been done by so many.
- (84f). Scarcely had the bell rung when John commenced to speak.
- (84g). Only once did John try to tie his shoelace with one hand.

Curme (1931, III, pg. 348) claims that "the most common forms causing inversion are negatives, interpretives, and adverbs expressing restriction." Exactly what is meant by restriction is difficult to say, since Curme's examples include, besides rarely, also seven times, particularly, bitterly and gladly. One question which we might address ourselves to here concerns the general characterization, if one exists, of the items after which inversion applies. I am somewhat skeptical about Curme's

classification, because if his examples are grammatical the term "restriction" is effectively meaningless, considering the broad range within which his examples fall. In any case I feel that most of his examples are ungrammatical. For our purposes it will suffice to consider the class of items after which inversion occurs to consist of negatives, rarely, scarcely and only.

We will be considering two basic questions. First, what is it about these items that causes inversion? Second, what effect does inversion have on the interpretation of sentences which contain these items?

3.4.1. Syntactic analysis.

For the time being let us assign the feature [+F] to rarely, scarcely, only and the negatives, so that we may refer to them easily.

For the most part inversion must take place after [+F]. Consider the following examples.

- (85a). *Never we will see such glory again.
- (85b). *Not once he has listened to what his father was saying.
- (85c). *At no time we will allow such a thing to happen.
- (85d). *In no way he could climb the fence.
- (85e). *Rarely so little has been done by so many.
- (85f). *Scarcely the bell had rung when John commenced to speak.

Let us also assume, following Jackendoff (1968c), that ADV appears in the base in the pre-sentence position, and that it may either remain in that position or be moved into one of a number of positions elsewhere in the sentence by a rule of adverb movement.

We are ^wnot in a position to provide an analysis of these data which bears some resemblance to the analysis put forth for so and neither. First, we have rule which attaches not or only to the following adverb.

(90). $\left\{ \begin{array}{l} \underline{\text{not}} \\ \underline{\text{only}} \end{array} \right\}$ -attachment (optional):

$\left\{ \begin{array}{l} \underline{\text{not}} \\ \underline{\text{only}} \end{array} \right\}$ ADV

1 2 \implies 1+2 \emptyset

The rule of adverb-movement alluded to above appears to be nothing other than an extension of rule (78), $\left\{ \begin{array}{l} \underline{\text{too}} \\ \underline{\text{either}} \end{array} \right\}$ -placement.

Here, too, there are slight differences. It is not immediately clear what will happen when not, either, an adverb and EMPH are all present in the pre-sentence at once.

(91). not either ADV EMPH NP TENSE(+[+v]) X

If (84) were blocked because ADV intervened between not either and EMPH, then we would get something like (92).

(92). *John didn't see Mary in the park, and didn't
Bill see Mary in the park either.

So, for one thing, we must change (77) so that neither is formed if there is an EMPH in the pre-sentence.

(93). Neither-formation (revised):

<u>not</u>	}	<u>so</u>						
	}	<u>either</u>	X	EMPH				
1		2	3	4				
					⇒			
					<u>neither</u> 3 4			

If (94) is underlying, then we must see to it that ADV does not remain in sentence-initial position, or otherwise we will get (95).

(94). so ADV EMPH ...

(95). *Bill found an apple in the garden, and so in the garden did Mary find an apple.

The placement of adverbs in the sentence has a number of other mystifying features, such as the fact that if there is an adverb of time and an adverb of place, not all combinations of possible positions sound equally good.

(96a). In the park at noon John saw a deer.

(96b). In the park John saw a deer at noon.

(96c). At noon John saw a deer in the park.

(96d). At noon in the park John saw a deer.

(96e). John saw a deer in the park at noon.

(96f). John saw a deer at noon in the park.

It seems, for example, that the preferable orders are Time S Place, Time Place S, and S Place Time, though no

In general, then, it seems that the analysis of inversion after negation can be treated as a version of the analysis of so and neither, with some details distinguishing the two slightly. There remain two more points to consider.

First of all, we have not discussed adverbs like rarely. It has been proposed (c.f. Klima (1964)) that underlying sentences with rarely is neg. This would explain the vaguely negative connotation of rarely, as well as the fact that it constitutes an affective environments with respect to indefinites. Furthermore, in our analysis this would permit us to explain why inversion occurs after rarely: rarely would be derived from neg rarely as follows:

(100). neg rarely neg+rarely rarely.

I do not wish to rule out this analysis of rarely completely. However, by assigning the feature [+F] to rarely we can account for inversion after it in a systematic way and we can account for sentences like (101).

(101). *Rarely you have anything interesting to say.

If neg is [+F], we can get the same result by treating rarely as $\begin{matrix} \text{neg} \\ +F \end{matrix}$ + rarely, so that either analysis is satisfactory at present. The fact that most adverbs are [-F] will mean that inversion after such adverbs will be ungrammatical, as the examples in (87) illustrate.

(106a). Christmas will not fall on a Tuesday in many years.

(106d). In many years Christmas will not fall on a Tuesday.

We will discuss the difference in interpretation of these examples in the next section.

3.4.2. The interpretation of negative inversion.

Owing to the discussion of negation and scope of negation in Chapter II we will be able to take certain things for granted here. As a result of this the present discussion will involve less detective work and more demonstration than 3.3.2, for example.

Just to get started, however, let us see what a sentence like (107) means:

(107). In not many years will Christmas fall on a Tuesday.

Essentially, (107) means that Christmas will fall on a Tuesday, but rarely, i.e. in a few years. The in here means "within" the year, and not "after the time span of" a year. It has been suggested that not in (107) is sentence negation. Let us try to get at the kind of negation here by looking at the various sentences that we get by moving negation and the adverb around in a sentence like (107). This includes (103), (105) and (106).

(105) is ambiguous. It may have the meaning of (107), or it can mean that Christmas will fall on a Tuesday after a span of not many years. Sentence (106a) is also ambiguous, since it can have the meaning of (107), or it can mean that Christmas will continue to fall on a Tuesday until after many years have passed, at which time it will fall on a Tuesday no longer. The second reading is easier to get when there is a numeric quantifier before years.

(108). Christmas will not fall on a Tuesday in seven years.

Sentence (106b) is also ambiguous in this way.

(109). In seven years Christmas will not fall on a Tuesday.

Since it would seem that this ambiguity arises from the two possible interpretations of in, we might well ask why (107) itself is not ambiguous, since there is no immediately obvious reason why one interpretation should be ruled out.

We will say that the difference between the two in's is in fact one of definiteness. The use of in which means "within the span of" we will call indefinite, and the other use of in, which means "after the span of", will be called definite. It turns out that in with the indefinite few has the indefinite interpretation, while in with the definite a few is interpreted as a definite. For example,

If we suppose that rule (104), neg-incorporation, applies after the assignment of the scope of negation, then we can account for this in a straightforward way. In (111) negation is generated in the base, on the NP many years. Since not many years is also definite, and only this interpretation is possible in (111). If not was originally outside of the adverb, then the rules for the assignment of scope would treat the adverb as obligatorily indefinite, after which neg-incorporation could optionally move neg into the adverb itself.

This explains, incidentally, why a sentence like (105) should be ambiguous. If we performed the interpretation of negation after neg-incorporation, then the neg in (105) would not be in a position where we could assign sentence scope to it. Sentence scope, we recall, occurs only when neg is in the AUX, or in sentence-initial position. By assigning scope before neg-incorporation we predict that the adverb containing neg can move to the end of the sentence without destroying the sentence scope interpretation of negation. This unexpected result lends strength to the hypothesis that this ordering is correct.

Our analysis must also explain a point which was brought up in the preceding section, namely, that for some speakers inversion after only might be optional.

(112a). Only once { John danced } the foxtrot.
 { did John dance }

We would then explain the unacceptability of some of the sentences in (112) as a consequence of attaching only to a proposition in the adverb. If the adverb lacks structure, however, then phonetically and semantically the two attachment processes will have the same consequences. This is because the scope of only is the constituent to which it is attached, and the interpretation of only if its scope is a preposition is not generally well-formed.

3.4.3. Does [+F] mean anything?

In section 3.4.1. I put forth the notion that [+F] might be a meaningful feature beyond its significance as the environment for the application of inversion. It was also pointed out that to say simply that inversion applies after [+F] is to say nothing at all, since one can easily isolate the various contexts in which inversion will apply and mark them all [+F]. It would be interesting, then if [+F] defines a natural class of some kind, and if we could demonstrate this.

The elements which are [+F] are WH, EMPH, not, rarely, only, scarcely, seldom and a few others. Unfortunately I can see no succinct, sharp characterization of what is common between these elements, nor does any vague characterization seem satisfactory. There are rules which must mention all of these elements, such as attachment transformations, but such attachment transformations must also mention other things, like even and also. The interpretations of these elements

differ sufficiently to suggest that a unique semantic characterization of what they have in common does not exist either. In light of this we must consider the feature [+F] to represent the list of elements which we are considering, but not characterize it in any interesting way.

3.4.4. Summary.

What we have shown in this section is that the scope of negation is a crucial component of the interpretation of considerable number of sentences. This is something which we have been arguing in previous sections as well, and it fits in with the more general notion that scope must be determined on the basis of derived syntactic structure in order that we may preserve a number of syntactic generalizations.

Basically, the generalizations which we have been making can all be summarized in an expansion rule for the pre-sentence. A secondary generalization is that the surface structures which we have been discussing can all be characterized by a small number of transformations operating on deep structures which contain different versions of the pre-sentence. The pre-sentence may be characterized by the following schema.

(115). (WH) (not) (only) ($\left. \begin{array}{l} \underline{\text{too}} \\ \underline{\text{so}} \\ \underline{\text{either}} \end{array} \right\}$) (ADV) (EMPH)⁸

The ordered rules which we have proposed are the following.

- (116). 1. { Neither-formation
 { not }
 { only } -attachment
2. Adverb movement
 3. EMPH-incorporation
 4. neg-placement extended
 5. attachment transformations
 6. Inversion
 7. Neg-incorporation

Footnotes to Chapter III

1. There is, in some dialects, a construction that there may also be a tag formation rule which applies to sentences with underlying sentence-initial EMPH. Consider the following examples:

- (i). He's quite a ballplayer, is John.
- (ii). She'll have a fantastic wedding, will Jill.
- (iii). It's dangerous, is the pill.

and so on.

This rule differs in certain ways from tag question formation and imperative tag formation. For one thing, negation can never appear in the tag of this construction.

- (iv). *He's quite a ballplayer, isn't John.
- (v). *She's not going to have a good time, isn't Sue.

But

- (vi). He's not getting any younger, is George.
- (vii). She won't like that very much, will Mary.

Consequently, we have to say that the rule which forms such tags applies after neg-placement, unlike tag question formation, and ignores the presence of negation in the AUX, unlike imperative tag formation.

(viii). Emphatic tag formation:

EMPH	NP	TENSE(+ [+v])	X	
1	2	3	4	⇒ ∅ 2 3 4 1 2 3

The second difference lies in the nature of the NP in the tag. While tag questions must have a pronoun, and imperative tags must have you, emphatic tags must have a [-PRO] NP.

- (ix). *He's quite a ballplayer, is he.

Footnotes to Chapter III continued

(x). *Mary will have a fantastic wedding, will she.

(xi). *She won't like that very much, will she.

It appears, therefore, that for dialects which can have this construction there are three rules which create tags, which are ordered as follows with respect to the rest of the grammar

1. Tag question formation
 2. Neg-placement
 3. Emphatic tag formation
 4. Neg-contraction
 5. Imperative VP-fronting
2. For the following discussion I will presuppose the notions "focus" and "attraction to focus" as they have been dealt with in the literature. In particular, see Chomsky (forthcoming) and Jackendoff (1969b).
 3. The comparison of sentences with really with sentences having the superlative emphatic interpretation was suggested to me by N. Chomsky (personal communication), in connection with sentences like those in (5).
 4. I am grateful to Elaine Culicover for pointing out to me the full range of interpretations of this case of emphasis.
 5. The so here is not the so which means "consequently".
 6. We are using the term "event" in a specially defined way, in order to include physical and mental states as well as activities.
 7. These examples are suggested by Klima (1964).
 8. In Chapter II we examined some alternative proposals for handling questions and tag questions. As far as the material in this chapter goes, the only proposal that I know of which has implications that are significantly different from that presented here is that of Carden (1968). The essence of this proposal is that negation is a main verb, which quite clearly would be at variance with (115) if it were correct. For a reply to this proposal, see Jackendoff (1968b).

Epilogue

4. Summing up.

4.1. Review and evaluation.

We set out with the intention of showing that there was a reasonable amount of evidence in support of two hypotheses:

Hypothesis I: There are syntactic generalizations which can be captured without recourse to semantic considerations.

Hypothesis II: Representation of certain kinds of semantic information as components of underlying phrase markers in deep structure leads to the failure to capture syntactic generalizations.

It would be of some value to consider what degree of success, if any, we have had in this endeavor.

In Chapter I the main topic of investigation was the imperative, with attention also being paid to sentences which shared certain aspects of the imperative interpretation, and sentences which displayed some similarity to imperatives in their syntactic structure. We first isolated two syntactic phenomena which seemed likely to provide us with some sort of generalization: the deletion of you in imperatives and the absence of subject-aux agreement in embedded subjunctives. We showed that the process of you-deletion could be found to operate in a construction which

lacked the imperative interpretation, i.e. pseudo-imperatives (1.3). We also found that there was a large number of constructions which also manifest the same behavior in the AUX as do the embedded subjunctives, and that all these constructions could be accounted for by assuming a morpheme SUBJ in deep structure (1.4). These two accounts related primarily to Hypothesis I, and, depending on how significant one considers the generalizations captured to be, constitute to some extent evidence in favor of this hypothesis.

Sections 1.5 and 1.6 are devoted to showing how accepting the analyses in 1.3 and 1.4 forces us to account for a large number of kinds of unacceptability in terms of semantics, and how furthermore no new semantic description is necessary in order to extend the sphere of semantics to imperatives and related constructions. Section 1.7 is given over to demonstrating how, in accordance with Hypothesis II, abandonment of the deep structure level specified in 1.3 and 1.4 leads to a loss of generalizations which were captured in those sections. Once again the degree to which these arguments are convincing depends to a large extent on how significant one considers the generalizations to be.

Chapters II and III are designed to be re-enactments of Chapter I, but carried out on a smaller scale and on different data. Chapter II is devoted to demonstrating that there are a

number of generalizations to be captured in the area of yes-no and tag questions, and that the semantic description of such sentences is far less regular than the syntactic description. It is argued that any attempt to make the level of deep structure identical with the level of semantic representation will, in the case of yes-no and tag questions, result in a significant loss of generalization.

Chapter III is involved with some newer material drawn from the area of emphasis, and it treats also some comparatively exotic cases of inversion. Because of the fact that most of the material in Chapter III is new, and has not to my knowledge been discussed in the literature, there are no existing alternative analyses which would provide us with a basis for comparison with an eye towards finding evidence for or against Hypothesis II. Therefore I have restricted myself in Chapter III to arguing almost entirely in favor of Hypothesis I. Once again the significance of the generalization captured here determines what weight the evidence in this Chapter will have in evaluating the hypothesis.

It goes almost without saying that I consider the arguments presented in this thesis and the analyses which I have proposed to be strong evidence in favor of the two hypotheses. It is only fair, I think, to point out those places in which I feel that my analyses are weak, inconclusive, or leave something to be desired.

4.2. Second thoughts.

4.2.1. On the first chapter.

I would guess that a significant weak spot in Chapter I would be the statement of the rule of you-deletion (1.3.4). We require that you-deletion may apply if you is followed by SUBJ. This requires that the underlying structure of pseudo-imperatives be

(1). you SUBJ X and S

This is all well and good, but for the fact that if the subject is not you, and SUBJ shows up in deep structure, the sentence is unacceptable.

(2a). *John came home and I'm leaving.

(2b). *I be seen by my mother and I'll lose my allowance.

(2c). *We be noisy and they'll throw us out.

On the other hand, such sentences are fine if subject-aux agreement is allowed to take place.

(3a). John comes home and I'm leaving.

(3b). I'm seen by my mother and I'll lose my allowance.

(3c). We're noisy and they'll throw us out.

Significantly enough, this distinction does not happen to show up if the subject is you, since with or without agreement, the verb after you always looks the same, except for are/be.

(4). I { order } that you lie.
 { believe }

However, as we have noted several times, the form of the verb to be which shows up in pseudo-imperatives is be, and not are, when you is deleted. If you is not deleted, then either be or are are acceptable.

(5). $\left\{ \begin{array}{l} \text{Be} \\ * \text{Are} \end{array} \right\}$ a nice guy and everyone steps on you.

(6). You $\left\{ \begin{array}{l} \text{be} \\ ' \text{re} \end{array} \right\}$ a nice guy and everyone steps on you.

It is not clear why this should be, or how we should account for it. Another unexplained fact is that sentence (122) has a slightly different interpretation with be than with are. Be seems to indicate some activity on the part of the subject, while are does not.

I also find the discussion of why- and why not- sentences somewhat unsatisfactory, due primarily to the fact that the description of the two constructions is not completely taken care of by independently motivated rules. It may be, as I suggested, that this is an inherent property of idiomatic constructions which perhaps were once completely rule governed, but are no longer. I don't think that we have sufficient experience with idiomatic constructions to accept such an explanation without further investigation.

Chapter I also brought up a number of odd constructions, most of which are discussed in footnotes. I think that there is considerably more to be said about the various kinds of question verb phrase fronting, but unfortunately these topics were not

central to the overall discussion.

4.2.2. On the second chapter.

One of the most difficult problems with the second chapter is determining the contours of intonation and relating them to interpretations. I think that it is quite possible that my discussion of intonation and its interpretation in 2.2.3.2. and 2.3.2.2. would be entirely different if a few more intonational facts were brought into consideration - perhaps the interpretive rules would become far more regular, or maybe they would become much more irregular. There is always the danger in dealing with intonation to get into the area of "para-linguistics". A question which must always be kept in mind is to what extent the statements which are made about intonation are grammatical, and to what extent they are extra-grammatical, perhaps having to do with the more general area of gesture.

Again, there are some constructions, such as emphatic tag formation, which were discussed in this chapter, but not at length. The possibility always exists that further investigation into these areas may afford us greater insights into the data to which we have given the greater share of attention.

Another serious problem is presented by the following sentence, suggested by Haj Ross.

(7). John ordered beans and Bill hash, didn't they?

Since the underlying structure of such a sentence would be something like "WH_S [John ordered beans] and S [Bill ordered hash] " it would be impossible to apply the tag formation rule as we have stated it to get John and Bill into the tag. This is because the tag rule is a copying rule, and John and Bill never appear as a constituent in this sentence.

Needless to say I find this sentence quite unacceptable. While I admit that it would be a problem if it were grammatical, I am happy to say that its ungrammaticality is a bit of negative evidence in favor of the tag formation rule as we have stated it: we would predict that sentence (7.0) could not be generated by the grammar, and in fact it cannot be.

4.2.3. On the third chapter

A number of issues were not resolved in this chapter, probably the most significant is the questions of why EMPH can only have verb phrase scope when it is in sentence-initial position. Another question is whether there is any independent motivation for the feature [+F] which was discussed inconclusively in 3.4.3.

It must also be noted that there are a number of uses of so which were not discussed in 3.3 because it was felt that they would make the discussion too unwieldy and too complicated, without contributing any great insights. Some illustrations of these uses of so are given below.

- (8a).. So fat was John that he couldn't fit through the door.
- (8b).. Mary thinks John is fat and I think so too.
- (8c).. I don't have so many friends any more.
- (8d).. It is not so that John is fatter than Mary.
- (8e).. John is fat, but not excessively so.
- (8f).. They told me to leave, and so I left.

No doubt there are numerous others which I have omitted.

A case of inversion which we did not discuss, and one which is related to (8a) above is the following.

- (9).. Such an idiot is Bill that yesterday he tied his own shoelaces together.

Finally, we did not deal with the occurrence of ever in emphatics, as illustrated by sentence (10).

- (10).. Boy, was he ever angry!

There exists the possibility that this ever and the ever which appears in questions can be shown to be the same syntactic element in deep structure. More tentative is the notion that this ever can be shown to be the same ever as that which shows up in whatever, wherever, whenever, however, and whoever (*whyever). This would be in support of our first hypothesis, particularly since the element ever receives decidedly different interpretations depending on its context. However, discussion of this topic did not seem to be integral

to the thesis as a whole, which was devoted to more far-ranging phenomena.

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