EXISTENTIAL SENTENCES IN ENGLISH

by

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ABSTRACT

This thesis is an investigation of certain syntactic and semantic characteristics of English sentences containing existential there. In Part I, the there-insertion analysis of the syntax of such sentences is examined and compared with a variety of alternative analyses which have appeared in the literature, including the PS Hypothesis and the Cleft Reduction Hypothesis of Jenkins, the analysis of Kuno, in which existential sentences are derived from underlying structures with subject position locatives, and the reanalysis of the there-insertion hypothesis by Lmonds. It is concluded that only a movement analysis similar to there-insertion offers an appropriate analysis of the form of existential sentences on which to build an explanatory theory of their syntactic and semantic properties. In Part II, a semantic analysis of there sentences is developed, culminating in the statement of a rule of derived structure interpretation for there structures which yields an incomplete, but intuitively satisfying characterization of their meaning. It is then shown that this characterization provides an explanatory account of the Definiteness Restriction and the Predicate Restriction on there sentences. The system developed is then extended to some of the less central syntactic and semantic problems associated with the analysis of existential sentences, and shown to provide solutions to many of them which avoid the addition of unprincipled restrictions to the syntactic and semantic rules involved.

Thesis Supervisor: Noam A. Chomsky
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to Kathy,

without whom there would be

no **Existential Sentences in English**,

and a very different Gary
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PRELIMINARIES

1. A Definition
At various points in this thesis, there will be a certain amount of punning on the word "existential," in which we follow in very distinguished linguistic and philosophical footsteps. In order to bring a minimal amount of order to the chaos that almost inevitably attends the use of this word in a linguistic investigation, I shall at the outset reserve the term existential sentence (abbreviated ES) to designate all and only those English sentences in which there appears an occurrence of the unaccented, non-deictic, "existential" there. Thus the term will be used as a characterization of a class of syntactic objects, not as a semantic description. Any departures from this terminology, as for instance in the first section of Chapter 6, will be clearly noted. Examples of ES by this definition are the following:

(1) There never was a Dracula.
(2) There has been a lot accomplished.
(3) There were several people talking.
(4) There may have been fifty people in the room.
(5) There were several people sick after the banquet.
(6) There ensued a bloodletting.
(7) There walked into the room a babbling linguist.

It is crucial that ES such as (1) - (7) be clearly distinguished from the superficially similar sentences in the following:
examples, which contain the deictic adverbial there. Untold confusion can result from confusing these types of sentences with one another.

(8) There's your shoe over on the refrigerator where you left it.
(9) There is John, over there,
(10) There's a pretty kettle of fish.

2. Goals and Organization

Perhaps nowhere else do we find so clearly displayed the complexity and subtlety of the syntactic and semantic interactions which determine the nature of human language as we do in existentials. For this reason, the attempt to gain some insight into the nature of the principles determining the form and meaning of these sentences has been a focus of linguistic and philosophical study for as long as these disciplines have existed. Whatever is discovered here about the nature of the relationships obtaining among form and meaning is certain to have implications for far larger questions in the theory of language, and ultimately for the question that lurks behind the whole linguistic enterprise: what is the mind?

More concretely, a transformational grammarian working on English in 1974 has special reason to be drawn to the study of this topic. English existentials have been known for a long time to be a particularly tangled nest of distributional irregularities and semantic mysteries, and in the last few
years, the discussion of the topic has intensified considerably, leading to the appearance of a number of interesting syntactic and semantic proposals for the treatment of these problems. It seemed to me a year or two ago that someone needed to sit down and try to make some sense of the conflicting claims of various analyses of the phenomenon of existential sentences. This, in a limited way and for a restricted set of alternatives, is what I try to do in Part I. In Part II, I add another analysis to the pile, one which seems to me to have a great deal of promise as an approach to existentials, although it is of necessity incomplete. I hope that it will prove to raise an interesting question or two, and to inspire further study of the problems which occasioned its development.
PART I

DO WE HAVE TO HAVE A THERE-INSERTION RULE?
CHAPTER 1

ES AND THE THERE-INSERTION ANALYSIS

This chapter is in two parts. In the first part, a theory-neutral description is given, in so far as that is possible, of the object of investigation: the English existential sentence. A few of the properties which make it a phenomenon of interest to the syntactician are presented. In the second section, the conventional syntactic analysis of such sentences -- the there-insertion analysis -- is introduced, and a series of syntactic problems which arise from the interaction of the data with this theory are presented.

1.1 Some Facts

Before one can begin a systematic study of English ES, one needs at the very least to have some characterization in mind of the phenomenon under investigation. To this end, consider the following schema, which, if certain irrelevancies attendant upon the occurrence of ES as complement sentences are ignored, represents compactly the surface form of ES in English.¹

\[
\begin{align*}
(1) & \quad \text{there } T \ (M) \ (\text{have-en}) \\
& \quad \left\{ \begin{array}{ll}
\text{a) } & \text{be } \text{NP} \\
\text{b) } & \text{LOCATIVE} \\
\text{c) } & \text{V-ing (NP) (PP*)} \\
\text{d) } & \text{V-en (by NP) (PP*)} \\
\text{e) } & \text{AP} \\
\text{f) } & \text{V NP (LOCATIVE)} \\
\text{g) } & \text{VP NP}
\end{array} \right.
\end{align*}
\]
An example of each expansion of this schema is given in (2).

(2)  
a. There is a Santa Claus.
b. There might be a duck in the sink.
c. There used to be a lot going on.
d. There has been a man shot (by a maniac).
e. There were at least fifty people sick.
f. There ensued a riot (on Mass. Ave.).
g. There bored down from the west a +

All expansions of the schema are characterized by the appearance in subject position of a special formative there. This is of course a matter of definition, since the presence of this formative was taken in the preliminaries to be the defining property of ES in English. All theories of ES of which I am aware incorporate the claim that this formative is an instance of NP, a position for which evidence is not hard to find, since it exhibits a lot of NP-like syntactic behavior. For instance, when there occurs in a complement sentence under the proper conditions, it can undergo the NP movement rule of NP Preposing (Raising, Passive), resulting in sentences such as those in (3) by the processes sketched roughly in (4).  

(3)  
a. There were believed to be ducks in the sink.
b. There seem to have been ducks in the sink.

(4)  
a. △ \text{believed } \left[ \begin{array}{c} \text{there to be ducks in the sink} \\ \text{S} \end{array} \right]_S 

b. △ \text{seem } \left[ \begin{array}{c} \text{there to have been ducks in the sink} \\ \text{S} \end{array} \right]_S 

This behavior is exactly parallel to that of other NP under
similar conditions, as for instance in (5).

(5) a. Ducks are believed to be killer whales in disguise.
    b. Several ducks seem to have invaded the sink.

Furthermore, there satisfies the structural description of the well-known rule of Subject-Auxiliary Inversion (SAI), exactly as do NP in general, and whatever rules are involved in the formation of tag questions, in the event that special rules are involved in the derivation of this structure.

(6) a. Is'n't John a duck salesman?
    b. Is'n't there a duck salesman outside?
    c. John doesn't sell ducks, nor does Bill.
    d. There isn't a duck salesman outside, nor is there a goose-buyer.
    e. John is a duck salesman, isn't he?
    f. There is a duck salesman outside, isn't there?

In certain ways, however, there is a very strange NP. For instance, it is restricted to subject position. Thus the facts in (7).

(7) a. *I want there.
    b. *I gave there some consideration.
    c. I \{want forced\} there to be a riot.

Such a restriction is encountered with no other NP in English, with the possible exception of the it in cleft sentences such as (8), if this it is to be regarded as a formative distinct from other instances of it in the language, such as the third
person singular pronoun and the antecedent *it* which occurs with extraposed sentences.

(8) It was John selling ducks at Jordan's.

There are a number of instances of NP which are restricted to object position, typically as parts of the VP idioms which have been discussed extensively in the literature in connection with motivating the passive transformation, such as *keep tabs on*, *keep track of*, *wreak havoc*, etc., but none which are restricted to subject position. Even the *it* associated with extraposed sentences can occur in object position, as in (9).

(9) Bill resented *it* that John sold him a sick duck.

Another rather bizarre restriction on *there* is that it can occur only with *be*, as in cases (a) - (e) of the paradigm in (1), and a class of intransitive verbs whose characteristics are very hard to specify. Although certain regularities are observable about their meanings, the verbs in this class hardly constitute a natural class semantically, for reasons such as those illustrated in (10).

(10) a. There arose a riot.
    b. There began a riot.
    c. *There started a riot.

It is worth noting that the cooccurrence restriction between *there* and its following verb is different in important respects from selectional restrictions of the sort first studied in Chomsky (1965), which seem in general to be sensitive to
fairly perspicuous semantic properties of noun phrases, such as animacy, concreteness, eventhood, etc. To begin with, it seems rather doubtful that *there* has semantic features of this sort associated with it at all; it appears per se to be very nearly empty semantically. Furthermore, even if this is not the case, it is difficult to see what semantic properties it could have in common with *riot* and not, for instance, with *chair*, so that a selectional restriction could make the necessary distinction in cases such as (11).

(11)  
(a) There began a riot.  
(b) A riot began.  
(c) *A chair began.

Furthermore, the difference in grammaticality between (10a) and (10b), where *there* occurs before synonymous verbs, argues that something different from the normal sort of selection found in languages is operating here.

Finally, it should be noted that the presence of *there* in subject position compels the presence of a NP in object position, despite the fact that all the verbs involved in ES are normally intransitive. Thus we have *A riot began*, *There began a riot*, but not *There began*.

Another property of ES is the existence of a rather complicated set of restrictions on the NP which appears to the right of \{be\ \{V\} (1). In many cases, definite NP are
excluded here, thus:

(12)  a. There will be a duck roasted on Arbor Day.
      b. *There will be \{ the John's \} duck roasted on
         Arbor Day.
      c. There's a duck on my desk.
      d. *There's \{ John's the \} duck on my desk.

Such cases have been taken to be paradigmatic in nearly all
previous work on ES, resulting in the claim that only indefinite
NP may appear in ES contexts. I shall refer to this generaliza-
tion as the Definiteness Restriction. The definiteness
restriction is rather more complicated than is sometimes
realized. There is, for example, at least one class of straight-
forward exceptions:

(13) Nobody around here is worth talking to.... Well,
     there's John, the duck salesman.

There are also cases with 'crypto-indefinites,' NP with overtly
definite morpholog:, but whose definiteness in a semantic
sense is somewhat open to question.

(14)  a. There's the same plaster duck in the garden
      that there was ten years ago.
      b. There hasn't been the usual reaction.
      c. There wasn't the slightest protest.

Notice that there is no alternation with the indefinite deter-
miner in any of these cases.

(15)  a. *a same plaster duck
      b. *a usual reaction
      c. *a slightest protest
Finally, there are cases which are the opposite of (14), in that the NP are overtly marked as indefinite, but seem to be more similar semantically to definite NP than to other indefinite ones, in that they appear to name unique entities.

(16) a. There is a Santa Claus.
    b. There'll always be an England.
    c. There is a best theory.

The last fact about ES which will be mentioned in this preliminary survey is the existence of the rather disordered syntactic zoo confined by the brackets to the right of NP in the schema (1). As it stands in the schema, this material is nothing but a rather grossly represented list of structures which generates a great number of interesting questions, among them:

A. Is the material to the right of NP to be given the structure in (i) below, or that in (ii), where X indicates any of the expansions in (1a-f)?

(i) there be \([_{NP} NP X ]_{NP}\)

(ii) there be \([_{NP} NP]_{NP} X\)

That is, is the material to be generated as a noun complement within NP, perhaps reduced from a full relative clause by some rule such as that in Smith (1964), or as a separate constituent or string of constituents attached to VP or S?

B. If the structure in (ii) above is chosen, where does it come from? Is the material represented by X generated
in this position largely "as is" by independently necessary phrase structure rules, is it reduced by deletion rules from some more complex structure, or is it the result of the deformation of the sentence by some movement process such as that incorporated in the classic there-insertion analysis of English ES?

C. What are the principles governing the list of constructions which can appear as X above? Why, for instance, is AP present, but not NP, and why are only some AP possible, e.g. hungry, tall enough to play basketball, but not tall? Is a distribution similar to this to be found in other syntactic contexts, or is it peculiar to ES?

D. Why are there more severe restrictions on the range of structures occurring after V in expansion f) of (1) than there are on that occurring after be in (a) - (e)?

As the investigation of questions about the nature of the syntactic material to the right of \{V \be\} in ES will turn out to be one of the central foci of this study, it would be well to have a term for it at the outset. Let us define the word coda to mean any and all material to the right of be in ES like (2a-e), and to the right of the main verb in cases like (2f). Thus, the coda will include the post-verbal NP together with any of the alternative strings given in the disjunction in (1). As an example, the sentences given in (2) are repeated
below as (17), with the coda underscored in each case.

(17)  
  a. There is a Santa Claus.
  b. There might be a duck in the sink.
  c. There used to be a lot going on.
  d. There has been a man shot (by a maniac).
  e. There were at least fifty people sick.
  f. There ensued a riot (on Mass. Ave.).
  g. Term will not be used for such cases.

It is thus apparent even from this cursory examination that the ES construction in English exhibits a number of interesting properties, even in advance of the assumption of any particular theory about them, which will of course create more. In the following section, we will examine the standard transformational analysis of ES, the so-called there-insertion analysis. We will see that it has interesting things to say about some of these matters, and that its adoption raises a great many questions for which it does not in present form provide answers.

1.2. An Analysis: There-insertion

1.2.1. Synopsis of the Analysis

The classic analysis of ES in English is the so-called there-insertion analysis, abbreviated here as TI. The essentials of this analysis are found as far back as Harris. Thus, in Harris (1957) is found a group of transformations of the form
S $\rightarrow$ Introducer + S, some of which introduce there under the category Introducer and concommitantly effect certain reorderings of the constituents of S. Such a transformation is (18), where ν stands for the class of verbal auxiliaries.

$\ (18) \ N \ \nu \ V \ F \rightarrow \ there \ \nu \ V \ \ N$

a boy came $\rightarrow$ there came a boy

After Harris, however, the history of the analysis is unclear. I have been able to find no formal proposal and motivation of the analysis in the early transformational literature, and attempts to formulate the there-insertion rule with any explicitness are rare, although the rule is mentioned frequently in the literature in connection with other topics and has been a subject of oral discussion for years. I offer the following as a synopsis of the analysis as usually understood.

Under the TI analysis, sentences such as (19) are derived from the structures underlying their paraphrases of the form (20) by a syntactic rule of there-insertion, which can be written as (21).

$\ (19) \ There \ is \ a \ duck \ in \ the \ sink.$

$\ (20) \ A \ duck \ is \ in \ the \ sink.$

$\ (21) \ There$-insertion

SD: 2 NP X be Y SC: 1 there 3 4 2 5

1 2 3 4 5

The effect of this rule will be to move a NP rightward to a position to the immediate right of an occurrence of be, replacing the moved NP with the formative there. The rule is
claimed to be optional, so that (20) can be derived alongside (19), and a condition is usually added to the effect that the NP in the structural description (21) be marked [-definite], in order to capture the definiteness restriction. Furthermore, a condition is added specifying that only the leftmost occurrence of be in the string under analysis can satisfy (21), in order to prevent the derivation in (22).

(22)  
   a. A lot was being accomplished.  
   b. *There was being a lot accomplished.

I shall refer to this as the Leftmost Be Condition. If the rule in (21) (21) is ordered cyclically, sentences such as (3a) and (3b), repeated here for convenience as (23), can be generated straightforwardly.

(23)  
   a. There were believed to be ducks in the sink.  
   b. There seem to have been ducks in the sink.

As noted in section 1.1, such sentences are presumably derived from prior structures similar to (24).

(24)  
   a. 

```
                S
               /\     \
              /   \   /   \ 
             NP  AUX  VP  NP  
                 |     |   |
                be-en believe

                S
               /\     \\  
              /   \   /   \ 
             NP  VP  PP  
                 |   |   |
                ducks be in the sink
```
Rule (21) will apply on the lower S cycle, with the result that there is inserted in subject position, from which it can be moved into subject position of the matrix S by the rule of NP preposing applying on the matrix S cycle.

Similarly, ordering restrictions can account for the application of the rule of Subject-Auxiliary Inversion and the putative rule of Tag Question Formation in sentences such as those in (6), provided that rule (21) is ordered in the cycle prior to these rules. 4

1.2.2 Claims and Advantages
The TI analysis as sketched here is in many ways an attractive proposal. The restriction of there to subject position is accounted for by the rather direct means of inserting it there
transformationally. NP postposing (passive), the only transformation which might reasonably be expected to move it out of subject position once it is inserted there, thus resulting in non-subject position there's in surface structure, must be ordered prior to TI anyway, if ES like There was a man shot are to be derived, so the problem does not arise.

Furthermore, the insertion of there by transformational means predicts its semantic emptiness, since other transformationally inserted formatives have this property as well. Compare, for instance, the of which is inserted in English to break up NP - NP sequences in derived nominalizations and other complement-taking noun phrases, as in (25).

(25) a. the destruction of the city
    b. the nearness of Mary
    c. a book of poems
    d. the unlikelihood of snow

It is extremely difficult to isolate a constant semantic property of the item of in the examples above. It seems rather to be an abstract relational marker between NPs, with the exact semantic value of the relation provided by the properties of the NPs themselves.

In this connection, it is important to understand that the claim that there is a formative devoid of intrinsic semantic content is not equivalent to a claim that its introduction into a sentence is irrelevant to the interpretation of the
sentence. We will see in chapter 6 that there is every reason to believe that there-containing sentences do differ in meaning from their sources. All that is being claimed in calling there semantically empty is that it is impossible to say what there means in the same way that the meaning of, e.g., book can be specified; one could not, for instance, look there up in a dictionary and expect to learn anything.

Another advantage which has been claimed for the there-insertion analysis is that it accounts immediately for the alleged synonymy of sentence pairs like (19), (20), in that it derives them from identical deep structures. While I will claim in Part II that such pairs are not in fact fully synonymous, this argument is not to be dismissed out of hand. Such pairs are very similar in meaning, probably as similar as active-passive pairs such as (26), (27).

(26) Many arrows hit the target.
(27) The target was hit by many arrows.

The there-insertion analysis at least leads one to expect that pairs like (19), (20) could not diverge in meaning as far as, say, (28), (29).

(28) John kicked Mary.
(29) Mary kicked John.

In the absence of a strong theory of what semantic information is to be captured in deep structure and what in derived structure, however, this is scarcely an impressive argument.
Similarly, it is possible under the TI analysis to provide a direct transformational characterization of the intuition that the NP following be in ES is the 'real' or 'logical' subject of the sentence. A statement to this effect appears in nearly every pedagogical or scholarly grammar of English I have ever seen, and one suspects that it is a valid linguistic intuition parallel to intuitions about "object of" and "subject of" in passives.

Some of the special vehemence with which scholars and teachers of English have maintained this claim may be attributable, however, to the existence of certain agreement phenomena in ES which in my opinion do not constitute serious evidence for the TI analysis. As these facts are widely considered to provide an argument for TI, it seems worthwhile to consider them here.

Consider the pair of sentences in (30).

(30)  a. There were several people in the room.
     b. There was a man in the room.

In (30) we see that number agreement applies between the verb and the following NP in ES. This fact has been used as motivation for a TI rule in more than one elementary syntax class. If, the argument runs, we are to have a TI rule, it can be ordered after the agreement rule, so that at the point when the latter rule applies, the noun phrases several people in (30a) and a man in (30b) will be in subject position. The
same English agreement rule which produces the agreement in

(31)  a. Two people are coming to the party.
     b. My sister is coming to the party.

will account for the facts in (30) without any further statement.

It has been noticed, however (for instance, in Kuno (1971)),
that this rather elegant idea runs into counterexamples in the
form of sentences such as (32) and (33).

(32)  a. There seem to have been several people at the
       party.
     b. There seems to have been a drunk at the party.

(33)  a. There were believed to be several difficulties.
     b. There was believed to be a con man in the
        neighborhood.

In (32) and (33), agreement takes place in the verb of the
matrix sentence, even though the noun phrases which are being
agreed with do not appear as the subjects of those verbs at
any time in the derivation. To see this, consider the following
approximate deep structures for (32a) and (33a), respectively.

(34)
Under the standard TI analysis, *there* -insertion, a cyclic rule, applies on the embedded S cycle. The resulting structure, with *there* in subject position of the embedded S, is affected by the rule of NP preposing, which moves *there* into the unfilled subject position of the matrix S. In neither case will the plural NPs quantified by *several* appear as subjects of *seem* or *believe* at any level of structure, yet agreement occurs.

There have been two responses to this problem of which I am aware. Kuno (1971) rather skeptically mentions a cyclic number-copying rule which would copy a number feature from the NP onto *there*. A more radical proposal involves tampering with the *there* -insertion rule itself. As far as I know, this proposal has not appeared in print, but it maintains an active oral life, and was once proposed by the present author in a rather hasty paper which has fortunately remained unpublished.
The proposal is roughly the following. Suppose that (21) is post-cyclic, rather than cyclic as assumed in the usual analysis. Under such a formulation, the operation of there-insertion will never apply in structures like (34), (35) until the topmost cycle, and will then have the effect of moving the NP rightward over an indefinitely large piece of structure ending with an occurrence of be, subject only to metatheoretical constraints on rules. With respect to the facts under discussion, the effect will be as follows. There-insertion will not apply to the embedded sentences in (34) and (35), but only to the matrix. Furthermore, being post-cyclic, it will apply to these structures after the cyclic rule of NP preposing has produced the strings in (36) and (37).

(36) several people seem to have been at the party
(37) several difficulties be believed to be

The result of the subsequent application of there-insertion to these strings, followed by a post-cyclic agreement rule, will be (32a) and (33a).

The problems with an analysis like this, as with all linguistic analyses for that matter, are of two types: descriptive and metatheoretical. The descriptive problem is of course that of guaranteeing that the moved NP winds up in the right place, while the metatheoretical problem is that of assuring oneself that the reformulated (21) does not defy well-motivated constraints on transformations. The descriptive problems alone are, as far as I can see, insurmountable. One can look at
the problem as one of interpreting the variable term \( \lambda \) in (21), since the interpretation of this variable, in conjunction with a system of universal constraints on movement rules, is what will determine where the moved NP lands. It is clear that the leftmost be condition on this variable can no longer be maintained, if (33a) is to be derived from (37); in fact, the imposition of the condition here would lead to the derivation of the ungrammatical (38).

(38) *There were several difficulties believed to be.

How, then, are we to account for the fact that (39b), but not (39a), is the correct result of the application of (21) to (39c)?

(39) a. *There were being many people silly.
    b. There were many people being silly.
    c. Many people were being silly.

Similarly, (40a,b), which are derived under the cyclic analysis by application of TI on different cycles, cannot both be derived on the postcyclic theory under any consistent principle of be selection.

(40) a. There are many people believed to be hungry.
    b. There are believed to be many people hungry.

(41) Many people are believed to be hungry.

The analysis is also metatheoretically undesirable. There insertion is a rule which can apply wholly within embedded sentences, yet it is being claimed to be post-cyclic. I know of no really solid evidence that one cannot put a condition on
Grammars to the effect that all rules which can apply wholly within embedded structures must be cyclic, a condition which would be violated by post-cyclic there-insertion. It would be extremely desirable to have such a condition, since much of the empirical content of the cyclic theory of rule application is lost if there exists a class of rules immune to the restrictions of the cycle which can return to embedded structures after all cyclic operations have been completed and interfere arbitrarily with the results of those operations.

Thus it can be seen that the proposed reformulation of the rule of there-insertion has rather daunting consequences. It would now repay the effort to take a closer look at the phenomena that inspired it in the first place. There seem to be important ways in which the details of the agreement phenomena found in ES differ from those in sentences of normal word order, casting doubt on the wisdom of attempting to generalize the agreement process between the two types of sentences at all. For one thing, agreement in ES is very frequently ignored in casual speech, whereas agreement in SV0 sentences is not. Thus speakers who would never say (43) will very often come up with (42).

(42) There's a number of people here.
(43) *A number of people was walking by.

While this does not mean a great deal in itself, it is suggestive. A more interesting bit of data is the following (noticed also by Morgan (1972)):
(44)  a. There's a school and a hospital in Roxbury.

b. ?"There are a school and a hospital in Roxbury.

c. There \{"is\ are\} two schools and a hospital in Roxbury.

d. ?There \{are\ is\} a school and two hospitals in Roxbury.

e. A man and a woman are here.

f. *A man and a woman is here.

The judgments in (44) are shared by nearly everyone I have approached with the sentences. What these facts seem to show is that the sort of agreement which operates in ES makes a distinction between morphological plurals and everything else, while, as is well known, the normal agreement rule in English treats a group of coordinated NPs as a plural, whether any of the coordinated NPs are morphologically plural or not. This sort of thing casts a great deal of doubt on any attempt to derive the agreement facts by manipulating ES in such a way that they can feed the general English agreement rule. Judgments about (44d) are unclear, and it is uncertain whether it should be classed with (44b) or (44c). If the latter, Kuno's number copying rule may be the proper approach to these phenomena. If the former, it becomes more likely that a special, very "dumb" agreement rule applies after there-insertion, looking only as far as the first NP to the right of the verb. If this is the case, agreement looks less than ever like a syntactic rule of the normal sort, as this particular agreement rule would violate the A over A principle. Whatever
should turn out to be the correct analysis here, it seems fairly clear that agreement is not going to provide much evidence for or against any analysis of the syntax of ES. Even so, interesting questions remain. It would be interesting, for instance, to inquire as to what difference there is between ES and cleft sentences which could provide an explanation for the total inapplicability of any sort of agreement in the latter.

\[(45)\]

a. It was John who skied Mt. Washington on toothpicks.

b. It\[ were \] was John's two sisters who skied Mt. Washington on toothpicks.

It has been suggested to me, I think by Jorge Hankamer, that this might be connected with nothing more interesting than the fact that it is homophous with a singular definite pronoun. One would hope some more interesting principle could be discovered at work here; one hates to think that even agreement rules could be so obtuse.

Returning to the main theme of this section, let us examine what is probably the most interesting consequence of an analysis incorporating something like rule (21): the claims it makes about the set of structures which can be found to the right of the reordered NP.

If one looks again at the formulation of there-insertion in (21), one sees that the rule gives essentially the following
directions: move NP rightward around an occurrence of **be**, or (assuming the leftmost **be** condition), the leftmost occurrence of **be** if there is more than one. If nothing further is said, this should apply without regard to which of the several types of **be** present in English is involved. The NP should be moved around copula, around the passive auxiliary **be**, and around the progressive auxiliary **be**. Translating this into a statement about the set of constructions appearing to the right of NP in (1), every piece of structure which can occur to the right of any of these kinds of **be** in English should appear in the list in (1). For the most part, this prediction is correct. Thus, we find:

(46)  a. There's been a man shot (**be** - NP - passive VP)  
    b. There's a lot going on (**be** - NP - progressive VP)  
    c. There were twenty people sick (**be** - NP - AP)  
    d. There were two people on the roof (**be** - NP - PP)  

Notice that the converse of this relationship is not predicted, i.e. that everything which appears in the list in (1) will also occur to the right of **be** in a sentence unaffected by *there*-insertion. This is the case because NPs themselves are complex entities which can contain complement structures to the right of the head noun. Thus it is possible, a priori, that the material listed to the right of NP in (1) could in some or all cases be in fact part of the NP, rather than a fragment of sentence structure separated from the rest of the sentence by the insertion of the NP. It is of course clear that complement-taking NPs should occur in this position, both on a priori
grounds -- how could one stop a rule like (21), which is defined on NPs, from moving complex ones as well as simple ones? -- and on the empirical grounds that we find undeniable cases of them there, such as (47),

(47) There are many people who do not believe this analysis.

where who do not believe this analysis is clearly a relative clause on many people. Given this, the there-insertion analysis does not predict that there must exist a sentence such as (48) because (49) exists, or, for that matter, that (47) will entail the existence of (50).

(48) *Many people were with rubber suits on.

(49) There were many people with rubber suits on.

(50) *Many people are who do not believe this analysis.

In (49), as in (47), the material to the right of many people can be analyzed as a complement structure within the NP. Such an analysis is supported by the fact that NP of the necessary form can be seen to exist independently of ES structures, as in (51).

(51) Many people with rubber suits on itch.

There is, of course, a tremendous degree of overlap between the array of constructions which can occur as noun complements and that which can occur following be in a sentence. This distributional similarity is the motivation for the well-known proposal that noun complements be derived from full relative clauses by some process which deletes a WH-form and be (Smith
(1964)). It is thus reasonable to ask whether a T1 analysis incorporating the claim that subject NP are reordered more or less freely around be, creating an array of sentence wreckage on the right of the reordered NP, is empirically distinct from a theory wherein everything to the right of be in (1) is regarded as belonging to a superordinate complex NP, especially since the former theory must include instances of the latter kind, such as (47) and (49). This matter will be taken up in detail in later chapters.

1.2.3 Inadequacies of the There-insertion Analysis
As we have seen immediately above, the claim that any constituent or string of constituents occurring to the right of an occurrence of be in a simple sentence will also appear to the right of the NP in an ES or, equivalently, that any be in the language will fulfill the SD of (21), is inherent to the there-insertion analysis. On the whole this claim stands up pretty well, but there are a number of counterexamples.

For instance, there exists in English a phenomenon usually referred to as "semi-modal be." This sort of be is illustrated in (52) and (53).

(52)  John is to leave at noon.
(53)  Bill is going to become a duck salesman.

In such sentences, there-insertion is mysteriously blocked.

(54)  *There are several people to leave at noon.
(55)  *There is noone going to become a duck salesman.
The generality of facts like (54) is somewhat in doubt, due to the existence of sentences like (56), however it is by no means clear that (56) comes from a source containing semi-modal *be*.

(56) There's a concert to be played at noon.

It could alternately be derived from a source such as (57), parallel to (47) above.

(57) [a concert to be played at noon]_{NP} is Notice that the NP a concert to be played at noon occurs in other environments, while several people to leave at noon, for whatever reason, does not seem to exist independently.

(58) Opus 59 #1 will be featured in a concert to be played at noon.

(59) *I got some information from several people to leave at noon.

Semi-modal *be* with *going to*, as in (55), is far clearer. There simply are no ES of the form of (55).

It is interesting to note that there are ES containing semi-modal *be*, but that they all have a second occurrence of *be* to the right of the semi-modal. In such sentences, the NP occurs immediately to the right of the second *be*.

(60) There are to be several people feted at the banquet.

(61) There is going to be a lot of bitching going on.

Under a *there*-insertion analysis, the rule thus appears to
"skip" semi-modal be. If the analysis is to be maintained, some way must be found to prevent the semi-modal from satisfying the be term of the rule. Imaginable alternatives must fail. One could not, for instance, claim that the deep structure (63) of (62) is ill-formed, since (61) must be derived from it.

(62) *There is a lot of bitching going to be going on.  
(63) a lot of bitching is going to be going on

Similarly, one cannot appeal to some derived structure interpretive principle or surface filter. This would merely rule out (62); (61) would still be undervivable due to the leftmost be condition.

Another such counterexample to the claim that any be should satisfy the structural description of there-insertion is the so-called Predicate Restriction. Some ad hoc restriction seems necessary to keep the rule from operating in sentences of the form NP - be - PRED. Thus:

(64) Many people are fools.  
(65) *There are many people fools.  
(66) Many people are tall.  
(67) *There are many people tall.

This is bad enough, but matters are complicated further by the existence of a class of exceptions to the restriction. Thus, alongside (65) and (67) we find:

(68) There were many people sick.  
(69) There are many people tall enough to touch this ceiling.
The instances of PRED which seem to be admissible in this environment are all adjectives and adjective phrases, never nouns or noun phrases (thus the form of case (e) in (1)). Furthermore, the AP which occur seem to name more-or-less temporary states, such as sick, naked, clothed, hungry, rather than more permanent characteristics such as intelligent, tall, crazy. One response to this problem which has appeared in the literature, for instance in Emonds (1970), is to claim that the structures to the right of copula in sentences like (68) and (69) are in fact complex NPs. Such sentences would then not result from there-insertion on NP - be - PRED sentences, and the predicate restriction would be perfectly general; the exception would at least have no exceptions. While this seems quite plausible in cases such as (69), where the requisite complex NP is independently attested -- cf. (70) -- it seems rather far fetched in cases like (68), since NP of the form of many people sick do not otherwise occur.

(70) Many people tall enough to touch this ceiling bash their heads in the stairwell.

The preceding discussion has provided several instances of another and more general problem proceeding from the assumption of a TI rule which can move subject NPs more or less freely around be: there are too many sources. Many or most ES will, like (71), have at least two possible underlying structures, parallel to (72) and (73), which will presumably be reflected on the surface by the difference in constituency
between (74) and (75).

(71) There were several people arrested for public sanity.

(72) Several people were arrested for public sanity.

(73) \([\text{several people arrested for public sanity}]_{NP}\) were

(74) There were \([\text{\text{several people}}}_{NP} \text{arrested for public sanity}]_{VP}\)

(75) There were \([\text{several people arrested for public sanity}]_{NP}\)

Sentences such as (71) are thus being claimed to be structurally ambiguous, but it is difficult or impossible in most such instances to perceive two distinct readings. This is perhaps not quite as bad as it may seem at first glance, however, since the sort of structural differences represented in (76), (77) are of a rather subtle sort which might be expected to produce no differences in truth conditions in many cases, thus making perception of the ambiguity difficult. Cases where the ambiguity can be brought out quite successfully will be discussed in following chapters.

Perhaps the most obvious flaw in the TI analysis is exemplified by (73) above and several other cases already mentioned. Quite simply, there are a great many ES which have no grammatical source under the TI hypothesis, necessitating some ad hoc device to ensure the obligatory application of the rule. The first cases to come to mind are those like (47) where the difficulty arises because an underlying structure must be
postulated which contains a sentence-final be. There are subtler cases, however:

(76) There's powder at Waterville Valley
     *Powder is at Waterville Valley.

(77) *Several difficulties are in this analysis.
     There are several difficulties in this analysis.

(78) *A fire was on Mass. Ave.
     There was a fire on Mass. Ave.

Another problem with the TI analysis concerns the fact that, as mentioned in 1.1, a rather ill-defined class of verbs other than be shows up in ES. The TI analysis as it stands makes no predictions about the characteristics of the verbs in this class, and in fact rule (21) cannot even derive the relevant sentences, since be is mentioned explicitly as a term in the structural description.

The final problem which I shall mention here is a particularly serious one: the leftmost be condition is unstable in a theory of grammar in which the structural conditions for application of a transformation are restricted to Boolean conditions on analyzability. If stated explicitly, as something similar to (79), it would require the use of quantification.

(79) ~ ∃ a proper matching of structural analysis a
     [where a is the SD of rule (21)] with a substring
     s of sentence S such that term 3 contains be
Conditions of this power are not well attested, and their adoption as an element of the theory would permit the statement of absurd rules; it would become possible, for instance, to write a WH attachment rule affecting only the rightmost or leftmost NP within VP.

The *there*-insertion analysis is thus seen to suffer from a number of serious inadequacies. Not surprisingly, several attempts have been made in recent years to replace the analysis with something better. In the following chapters I shall discuss some of them and show that the something better is yet to be found.
FOOTNOTES

CHAPTER 1

1. These are not really surface structures, of course; they contain, for instance, unexpanded categories and items which do not survive in surface structure due to the application of obligatory transformations such as affix movement which are irrelevant to the present purposes. The point of referring to this schema as surface form is merely to emphasize that no claims are being made about how closely the structures in (1) approximate deep structure.

Two additional points should be made about this schema. First, it is not really exhaustive; there are, for instance, ES of the form (i), which are not represented in the schema.

(i) a. There are John's feelings (for us) to consider.
   b. There are John's feelings to be considered.

Sentences like this, whose existence was first pointed out to me by J. R. Ross some years ago, have interesting properties, but I have nothing to say about them in this thesis. Second, the optional presence of sentence adverbials is not considered in (1), since their occurrence is in no way characteristic of ES. The item LOCATIVE which appears in (1), however, is used with a deliberate vagueness:
locatives occur both as sentence adverbials, as in John met Mary in Boston, and as parts of predications, as in John lives in Boston, John is in Boston, referring to them only as locatives in (1) is intended to leave c in for the time being the question of which variety is present in ES.

2. Chomsky's claim that no transformation of subject-to-object raising is involved in the derivation of sentences like (3a) is adopted here without argument, as the question is irrelevant to the point under discussion.

3. One is in Burt (1971).

4. I assume here that root transformations (see Emonds, 1970) such as SAI and Tag Formation are last cyclic, that is, ordered among other cyclic rules but applicable only on the root S cycle. If such rules are in fact post-cyclic, that is, ordered in a block after the last cyclic rule in the grammar, no ordering statement is needed here other than the specification that (21) is cyclic.

5. Actually, there is somewhat more to the matter of restricting there to subject position by transformational insertion than meets the eye. The structural analysis of the rule in (21) is given as a concatenation of category symbols and formatives of the rule to higher-level bracketings or other
statements about grammatical relations. As far as can be determined, there are no well-motivated transformations which cannot be stated in this way, and it is desirable as part of the overall quest for the most restrictive possible theory of grammar that rules which cannot be formulated in this way be metatheoretically prohibited.

Given this theory of transformations, a rule like (21) should apply whenever it encounters a string of categories and formatives matching its structural description, subject only to general constraints specified in the metatheory, and it is by no means obvious that it will not find such a string in a position where the NP which is the first term in the structural analysis is other than in subject position. Such a state of affairs would result in *there being inserted in a position other than subject. A concrete case of this type is provided by sentences such as (i).

(i) I told three people to be in the office when I returned.

Considering a string like (i) in advance of any analysis of its syntactic structure, it would appear to satisfy (21), so that (ii) should be derivable.

(ii) *I told there to be three people in the office when I returned.

Given the above theory of transformational rule application and essentially the system of general conditions on transformations given in Chomsky (1971), no extant theory of the structure of complements of "force-type" verbs such
as tell can prevent the derivation of (ii) by means of rule (21). One conceivable response to this would be merely to delete the leftward variable Z from (21). Another response will be suggested in chapter 6.

6. The structure given for (32a) conforms to the analysis of subject-raising structures in Bresnan (1972). This is irrelevant to the point at issue.

7. This is not quite correct, as Kuno's analysis involves an extra stage involving the introduction of there by pronominalization of a locative constituent onto which the number feature is actually copied. This is immaterial here.
In the previous discussion, we have seen that the there-insertion analysis of ES, as it is usually understood, makes a number of false predictions which necessitate the addition of a number of ad hoc and metatheoretically intolerable features to the analysis, if even a fairly restricted range of data is to be accounted for. In Emonds (1970), there is an attempt to show that some of these difficulties can be overcome by embedding the analysis in a highly articulated system of universal constraints on syntactic rules which Emonds calls the Structure Preserving Hypothesis. This is a priori the most desirable approach to problems of this sort, as it seeks to remove cases from the grammar of English where arbitrary and highly powerful theoretical devices have been thought to be required by appealing to a general principle which will independently have the effect of restricting the range of possible grammars of human language. This is the best of all possible worlds in syntactic explanation.

Unfortunately, Emonds' account suffers from unresolved difficulties of two types. First, there is reason to believe that the application of the structure preserving hypothesis (hereafter SPH) to the T1 analysis of existentials does not adequately account for most of the cases which Emonds says it does. This,
while it leaves the original problems with TI mostly unsolved, does not throw significant doubt on the general principle of the SPH. Worse is the second kind of difficulty; in at least one instance it can be shown that the attempt to embed the TI analysis in the SPH forces the adoption of a claim which is very nearly impossible to maintain. To the extent that this is true, it is evidence either that the TI rule is not to be maintained as part of English grammar or that the SPH is untenable in its present form. In coming chapters of this thesis I will attempt to show that the TI rule must in fact be assumed to exist in English if ES are to be accounted for insightfully as syntactic phenomena. If this is the case, the existence of the second kind of difficulty mentioned above must be taken as evidence against the SPH, at least in the form in which it is given in Emonds (1970).

In the present chapter, I assume familiarity with the essentials of Emonds' theory and evaluate its adequacy as an explanatory account of the conditions on the TI rule.

2.1 On the Cases Supporting the Analysis

There-insertion is a rule moving phrase nodes which can apply freely in embedded sentences; therefore, under Emonds assumptions it must be structure preserving. This seems initially quite plausible; the moved NP generally ends up in a known NP position (PRED or direct object) and is itself replaced by a formative whose syntactic characteristics are NP-like, as
shown by its behavior with respect to later rules, e.g. NP preposing. Given the characterization of TI as a structure preserving rule, Emonds claims to be able to explain three of the syntactic problems which inhere to the standard formulation of TI: the semi-modal restriction, the predicate restriction, and the sourcelessness problem for ES of the form *there was a riot*. Additionally, the SPH explains immediately why it is that none of the verbs which can occur in ES (*occur, arise, develop*, etc.) are transitive, since a transitive VP has a filled object node, and thus provides no empty NP position into which the TI rule could move the deep structure subject. This last strikes me as an instance of genuine explanation, and the account of the sourcelessness problem seems to work more or less correctly. The purported explanations of the semi-modal restriction and the predicate restriction, however, seem to fail as given, as I shall now show.

2.1.1 The Semi-modal Restriction

Emonds remarks that the constructions in which semi-modal *be* appears are restricted in distribution in such a way that it makes sense to regard them as generated in the auxiliary as an alternate expansion of the category MODAL. Thus, we find in sentences like (1) that the semi-modal construction *be to* does not cooccur with modals.

(1) "A frog salesman *will* may *must* could be to visit us tomorrow."
Furthermore, in infinitives and gerundives, where modals are excluded in general, we also find no occurrences of be to.

(2)  a. *To be to die at dawn would be ghastly.
    b. *Being to fly to London tomorrow would be impossibly lovely.
    c. *I would like for John to be to leave tomorrow.

If be to is generated in the AUX as a modal as suggested above, both these distributional gaps are explained. However, if it is the case that the semi-modals are to be generated in the AUX, the SPH immediately explains their inability to fulfill the structural analysis of the TI rule. Recall that the SPH prohibits the application of TI in such a way as to deposit the moved noun phrase in any position other than one in which a NP can be generated by independently necessary phrase structure rules. There are no such positions in the AUX; therefore the TI rule cannot move a NP into a position within the AUX, which is what it would have to do if it chose the semi-modal be to fulfill the be term of its structural analysis.

This argument is quite sound, given Emonds' not implausible assumption that the passive and progressive be's are generated within the verb phrase. Unfortunately, however, the facts seem to be in error. While Emonds' observations about the distribution of be to are correct, the other semi-modal be construction be going to, which is every bit as resistant to penetration by there-insertion as is be to, has quite a different distributional paradigm. Compare (3), (4) with
(1), (2) above.

(3) \[
\begin{align*}
\text{Richard} & \{ \text{will} \} \\
& \{ \text{may} \} \\
& \{ \text{must} \} \\
& \{ \text{could} \} \\
& \{ \text{might} \}
\end{align*}
\]
be going to resign.

(4) a. To be going to die at dawn would be ghastly.
    b. *Being going to fly to London tomorrow would be lovely.
    c. I would like to be going to leave tomorrow.

The ungrammaticality of (4b) is a case of an independent generalization called by Ross "doubling" (see Ross (1972), Wilsark (1972)). Abstracting from this irrelevant matter, we see that be going to does all the things a modal should not, cooccurring with other modals and showing up in contexts where modals are characteristically excluded. Thus 'monde's account leaves an unexplained residue. This does not necessarily mean it is wrong, of course; it could perfectly well be the case that the "semi-modal restriction" is a misnomer for two unrelated phenomena. Nonetheless, it reduces the apparent explanatory power of the proposal.

2.1.2 The Predicate Restriction

The account of the predicate restriction given by the adoption of the structure preserving hypothesis is quite straightforward. Sentences like (5), (6) result from the phrase structure expansion of VP as \text{be} - \text{FRD}.

(5) People are fools
(6) People can be tall.
The PREP node is filled in deep structure (by fools, tall), leaving no unfilled NP position where the moved subject could be inserted. Therefore, no offending sentences of the form (7), (8) can be derived.

(7) *There are people fools.
(8) *There can be people tall.

There are two difficulties with this account. First of all, it was noted in Chapter 1 that certain adjectives appear in sentences like (8) with no ill effects on acceptability.

(9) There were people sick.

This is rather damaging, as (8) and (9) are almost certainly parallel in structure, so that a structural account like Emonds' seems doomed as an explanation of the difference between them. Notice further that the standard version of there-insertion is actually a more promising starting point in the search for a non-structural explanation of these facts, since it overgenerates, deriving (7) and (8) alongside (9), while Emonds' account undergenerates, claiming that (9) is simply not a possible structure of English. Thus, any number of possible semantic mechanisms can be imagined which could rule out (7) and (8) under the standard account, while Emonds' analysis, due to its central claim that (9) is ungrammatical, i.e. not generated as a structure of English, would have to claim that it is interpreted derivatively. This sort of claim seldom leads to interesting discoveries.

Emonds is aware of examples like (9) and suggests tentatively
that they might be derived from ES of the form \textit{there - be - [NP} \textit{NP S]} by means of relative clause reduction. The trouble with this is that it just moves the problem. Whatever considerations could tell us why \textit{sick} but not \textit{tall} can occur in such reduced \textit{NP} would be exactly parallel to the machinery necessary to account for (8), (9) directly from the success or failure of an application of the T1 rule. Furthermore, \textit{NP} such as \textit{aman sick} are not generally attested in \textit{English}. The second difficulty is that it is less than obvious that independent deep structures of the form \textit{NP V NP PREP} do not exist. If they do, the SPM would have to predict that \textit{there}-insertion can take place generally in predicational sentences. Emonds considers possible examples of sentences with deep structures of this form and defends alternate sources for them; unfortunately, there are worse examples than he considers. The examples he talks about concern verbs such as \textit{consider} and \textit{make} in sentences such as \textit{Bill considers John a good lover, Herman makes everyone furious}. In such cases, a derivation involving the deletion of \textit{be} from between the object \textit{NP} and the predicate is not unreasonable. More troubling are examples like \textit{John painted the house red, John kicked the door closed}, where such a derivation seems rather implausible. If such examples as these do have VPs of the form \textit{V NP PREP}, an analysis incorporating a T1 rule makes exactly the same predictions with or without the structure preserving hypothesis; there should be no syntactic predicate restriction. The
predicate restriction phenomena would then comprise a case where the SPH is consistent with the data from ES, but does not contribute toward its explanation.

2.2 The Passive/Progressive Problem

In this section I would like to consider a far more serious problem with the SPH analysis of ES. Its basis is found in ES of the form (10), (11).

(10) There were many people laughing.

(11) There were several alternatives suggested.

If one assumes, as Emonds does, and as I later argue is necessary, that ES such as these are formed by an application of to sentences of the form (12), (13),

(12) Many people were laughing.

(13) Several alternatives were suggested.

there arises a problem in finding a suitable deep structure NP position to claim that the subject NP moves into. Under the conventional assumptions about the nature of the passive and progressive auxiliaries, it is in fact impossible to come up with such a node in any kind of motivated way. Emonds proposes to deal with this difficulty by hypothesizing that the progressive and passive auxiliaries have the structure shown in (14).

(14)

```
\[
\begin{array}{c}
\text{VP} \\
\text{VP} \\
\text{be} \\
\text{laughing?} \\
\text{suggested}
\end{array}
\]
```
He assumes, as well, that the perfect aspect is similar in structure, although such a step is not necessary for the purposes in hand. Given the above structure, the problem is about half solved; one needs still to find independently attested cases of a structure like this not derived by movement rules in which an object NP can occur in the higher verb phrase to the left of the embedded VP. If such things can be found, one is justified in claiming the existence of a deep structure NP position into which the moved subject in ES can be inserted. A reasonable candidate for such an independently attested structure is the complement system found with certain so-called perception verbs, like see, hear, feel as in sentence (15).

(15) John saw Bill kick his dog.

Another structure of this form might possibly be seen in (16), although it is difficult to know what is really going on in such sentences.

(16) Gary was a fool to put off his thesis.

If either of these is a real case of a structure like (14), the solution becomes at least initially plausible, and should be investigated as an analysis of the structure of passives and aspect-containing sentences.

The analysis really incorporates two claims. The first is that there are no lexical units have-en, be-ing, be-en; that is, that the passive and progressive participles are not derived by means of an affix reordering rule from lexically
introduced aspect and voice markers. As far as I can see, this may very well be right, at least for the progressive and passive. The other claim is the crucial one for this analysis: namely that at least the progressive and passive be, and maybe the perfect have, are full verbs embedding VP beneath them. If they are not full verbs, there can be no motivation for a NP position to their immediate right, and a rule which moves NPs into such a position cannot be structure preserving. Unfortunately, this is a difficult claim to maintain. An obvious problem concerns the ordering of the aspect markers with each other and with the passive marker. VP is a recursive node in this system; all other things being equal, one would expect to find free embedding of the aspect and passive markers under each other. While many of the resulting structures could no doubt be ruled out by some sort of semantically plausible selectional statements, the fact remains that of the six possible orderings of the three elements concerned (ignoring self-embeddings for the sake of simplicity), only one is attested on the surface: perf-prog-pass. This is rather striking. Emonds' response to this problem is the following. The passive auxiliary is assumed to be introduced transformationally immediately to the left of the main verb. Therefore it is essentially excluded from the ordering sweepstakes, although it should be noted that identifying the entity "main verb" in this system may well turn out to be non-trivial. This leaves the perfect and progressive to be dealt with, the orderings which have to be blocked being perf-perf,
prog-prog, and prog-perf. The second of these Emonds rightly attributes to the more general restriction of "doubt-in". The first and third are claimed to be instances of a more general, if mysterious, restriction against the appearance of have in VP complements, as for instance in the complements of "obligatory equi" verbs such as try.

(17) *John tried to have kicked his dog.

The trouble is, sentences such as (17) are not in general all that bad.

(18) I will try to have finished the book by the time you return.

Cases of PERF appearing as the second element in a string of auxiliaries, however, are among the worst perversions of English imaginable. Consider (19), (20).

(19) *John has had gone.

(20) *John is having done it.

This leads one to suspect that have-containing VP complements are not ungrammatical at all, but merely nonsensical. The perfect aspect seems to identify a point or period of time prior to a reference point established by the tense constituent of the sentence. Thus it is to be expected that perfect aspect will be semantically odd in the complement of verbs like try, if the latter means something like "exert effort toward accomplishing x," since it is not normally possible to exert effort toward the accomplishment of a prior action or state of affairs. Notice in this connection that even a sentence like (17) can become acceptable if one were to possess a time
machine with a control whose function was to alter one's past actions, but whose manipulation was rather tricky and required a certain amount of effort on the part of the user. (19), (20), on the other hand, are simply non-sentences, which no such manipulation of the universe can make into English. Attempting to account for (17) and (19), (20) in the same terms thus seems to be a serious confusion of distinct domains of explanation.

An initially more promising response to the ordering problem would be the following: Assume with Emonds that the passive auxiliary is introduced transformationally. Assume further that the perfect is inserted as a unitary aspect marker, but that the progressive has the structure defended by Emonds. This prevents all the ungrammatical auxiliary orderings except that exemplified in (20) and is not entirely unreasonable. For one thing, it would lead one to expect that there should exist other verbs besides be which select complement VPs of similar syntactic type. This expectation would be fulfilled if so-called verbs of temporal aspect like keep, continue, start, begin, quit, which have been making nuisances of themselves in people's theories of complement structure at least since Rosenbaum (1967), were generated in such a way. Emonds in fact claims this to be the case. It is worth noting, in this connection, that the perfect have, which on Emonds' analysis is exactly like be, but on this analysis is generated as part of a complex lexical item PERFECT, does not enter into
such a replacement set with other verbs, which is exactly what would be expected. Also, one could point feebly to certain cross-linguistic distributional tendencies. A great many languages seem to mark perfect aspect, but far fewer have anything in the verbal auxiliary system like the English progressive. This, however, is no evidence in the absence of some kind of universal claim about the nature of possible verbal paradigms, which I am unwilling to make.

In any case, this system continues to make wrong predictions. For one thing, generating the progressive be as a complement-taking verb implies that the badness of sentence (20) is parallel in nature not to that of (10), but to that of (18). This seems to me absurd. Equally seriously, the claim that the progressive be is syntactically parallel to the verbs of temporal aspect, which I take to be rather central, is contradicted by their respective behavior under NP preposing. Compare:

(21) John was being assaulted.

(22) *John \{began \{quit \{stopped \} \} \} being assaulted.

The apparent inability of NP-preposing to apply across \( \ast \) does not extend to (21). This would be predicted if the progressive be were not analyzed as a full verb.

2.3 Conclusion

In the preceding discussion, we have seen that the treatment
of ES developed in Emonds (1970) is somewhat less successful than might be hoped. Two of the cases claimed as support for the analysis were seen to be unconvincing, and a reanalysis of the aspect system which is necessitated by the attempt to bring the TI rule under the constraints of the structure preserving hypothesis was shown to lead to undesirable results.
CHAPTER 3
THE PS HYPOTHESIS

3.1 Summary of the Analysis
In his thesis (Jenkins (1972)), Lyle Jenkins offers an elegant account of English ES which seems at first glance to accomplish the difficult and desirable feat of accounting for a range of syntactic phenomena about ES more adequately than does the there-insertion analysis and doing it with less powerful means.

The form of Jenkins' proposal is basically the following. All ES are syntactically of the form (1) and are introduced in deep structure by the same phrase structure rules necessary to produce copular sentences such as (2).

\[
\begin{align*}
(1) & \quad \text{NP} - \text{AUX} - \text{be} - [\text{PRED NP}]_{\text{PRED}} \\
(2) & \quad \text{John is a plumber.}
\end{align*}
\]

ES such as (3) thus have the (deep and surface) structure given in (4).

\[
\begin{align*}
(3) & \quad \text{There is a Santa Claus} \\
(4) & \quad [\text{NP there}] \text{ is } [\text{PRED } [\text{NP a Santa Claus}]]
\end{align*}
\]

More complex examples such as (5) - (8) are identical in structure, differing only in having a complex NP in the predicate position, similar to the copular sentence (9).

\[
\begin{align*}
(5) & \quad \text{There are many people who hate everything they don't understand.}
\end{align*}
\]
There is a man in the drainpipe.

There was a man discovered in the drainpipe.

There was a man skindiving in the drainpipe.

John is a man pursued by phantoms.

The highly restricted distribution of the formative there is stated in this theory as the "deep structure condition" (10) [Jenkins' 14]:

(10) there may occur only in the context \( \_ \_ \text{AUX} \text{be} \ \text{NP} \)

Jenkins offers a range of cases where his analysis is claimed to correctly predict facts which are left unexplained by the there-insertion analysis. The most fundamental of these is also the most obvious: if the PS Hypothesis is correct, the coda is always a NP; therefore it should be the case that anything which can appear to the right of be in ES is independently generable as an English NP. To a large extent this claim appears to be correct, and it allows Jenkins to explain immediately two of the more awkward gaps in what should, according to the there-insertion theory, be the ES paradigm: the Predicate Restriction and the Semi-modal Restriction. The Predicate Restriction, it will be recalled, is the name given to the following fact:

(11) *There are many people \{tall\}.

Under the there-insertion theory, the unacceptability of this sentence is surprising. If the rule applies generally to reorder NP around instances of be, as claimed, it should apply in the predicational structures (12) to produce the
ungrammatical (11).

(12) Many people are \{tall fools\}.

Under Jenkins' theory, in which the coda is always a NP, (11) is out for the simple reason that NPs of the form many people tall, many people fools do not occur in English. Similarly, the restriction that so-called semi-modal be, as in (13), (14), does not satisfy the structural description of there-insertion is reduced to the previously unsolved problem that no NP of the form (15) exists.

(13) Many people are (going) to enjoy John's discomfiture.

(14) *There are many people (going) to enjoy John's discomfiture.

(15) *many people (going) to enjoy John's discomfiture

Another advantage of the PS hypothesis is that it dispenses immediately with the need for postulating ungrammatical sources such as (16), (17) for the grammatical ES in (18), (19) respectively.

(16) *A Santa Claus is.

(17) *Holes are in the wood.

(18) There is a Santa Claus.

(19) There are holes in the wood.

There is a final set of arguments based on passives and progressives which as stated do not make a great deal of sense, due to a preoccupation with side issues raised by the unilluminating formulation of there-insertion which Jenkins has
chosen to attack, namely that given in Burt (1971). There is an argument lurking in the facts, however, and reduced to its basics it is the following. Due to the partial homophony of the passive and progressive morphemes and the copula, it is possible to have multiple occurrences of be in a single simplex sentence. When such is the case in an ES, the noun phrase appears in general immediately to the right of the leftmost occurrence of be. Thus (20) is grammatical and (21) is not.

(20) There is a tree being felled outside.

(21) *There is being a tree felled outside.

Thus it appears that some provision must be written into the there-insertion rule to guarantee that it choose the leftmost be in a sequence of two or more to deposit the NP after. As was remarked in chapter 1, such a condition is unstable in a theory of transformations which requires that conditions on individual rules be limited to Boolean conditions on analyzability, and further it makes exactly the wrong prediction in the cases where a semi-modal be occurs in an ES. Thus:

(22) There is going to be an attempt on John's virginity.

(23) *There is an attempt going to be on John's virginity.

Under Jenkins' theory, where all ES are of the form NP - COP - PRED, an independently necessary device is available to account for these facts. Under this theory all ES such as (21) must be analysed as containing an instance of copula with progressive aspect. It is generally the case in English that the copula can take progressive aspect only when the subject NP is animate.
(24)  *This chair is being wooden.
(25)  John is being a fool again.
Since there, whatever else it is, is not animate, sentences like (21) will always be ungrammatical for the same reason (24) is.

3.2 However...
Thus we see that Jenkins' PS Analysis can explain in rather a natural way an array of facts which are a source of great embarrassment for proponents of a transformational derivation of ES. This section will explore some areas where the analysis makes wrong predictions and/or entails theoretical consequences which are highly undesirable. It will be shown that the analysis in its present form loses at least as much in explanatory power as it gains.

Basically, there are two claims in Jenkins' theory of ES. The first is that ES are not derived by an inversion rule, but are present in deep structure in essentially their surface form. In other words, sentences such as those in (26) and (27) are claimed not to be related to each other transformationally.

(26)  a. There is a man in the drainpipe.
       b. There was a man shot.
(27)  a. A man is in the drainpipe.
       b. A man was shot
This claim entails that there be present in underlying structure,
or equivalently, that the subject node in ES be empty in deep structure and be filled at some later point by a rule inserting *there*. The second claim regards the more interesting question of assigning an appropriate structural description to the (deep and surface) structures in (26). Under Jenkins' theory such sentences are copular structures; all the material to the right of *be* is a predicate nominal, and the *be* which appears in ES is always the copula, never the homophonous passive or progressive *be*.

Obviously, these claims are inter-related, but only to a degree. Any theory in which ES are present in deep structure in roughly their surface form must provide a reasonable account of the coda as a deep structure entity, since it cannot be created by the action of a movement rule in such a theory. A priori, there are several ways of doing this, and the essential characteristic of the PS Analysis is the particular alternative which is chosen: that of regarding the coda as a predicate nominal. As this position defines the PS Analysis as separate from other possible base-derived theories of ES, I shall confine my remarks to this claim. In the next chapter, two alternative base-derived theories of ES will be considered, neither of which incorporates the claim that the coda is always a NP. At that time, I shall have some thoughts on the more general question of the plausibility of regarding *there* and *there*-structures as present in the base.
The discussion below will be cast for the most part as a running comparison between Jenkins' account of the structure of sentences like (26) and the account available under the there-insertion analysis, in which (26b) is derived from a simplex passive sentence, (26a) contains an extra-NP locative constituent, and neither is an instance of the structure NP - COP - PRED. It should be observed, however, that the arguments which will be developed against the PS Analysis in this framework cannot immediately be construed as arguments for the there-insertion analysis, for the reason mentioned above: there might very well be another analysis available under which ES would have the structure necessary to evade the arguments levelled here against the PS Analysis and its claims about constituent structure, but which would not involve their derivation by means of an inversion rule. At the moment this is unimportant, since the only alternative under consideration at this stage is the there-insertion analysis. It will become important in the next chapter, however.

3.2.1 The Arguments from Extraction

One rather obvious class of arguments concerns the extractability of items from the coda. It is generally the case that the extraction of items from within NP structures is blocked by the Complex NP Constraint (see Ross, 1967). Thus:

(28) a. I talked with a man in a suit of armor.
    b. *In a suit of armor, I talked with a man.
The same point can be made by pairs such as those in (29), where the sentence is ambiguous between a reading where the locative is inside the object NP and one where it is outside. Under the former reading, the person Bill approached is being designated as "the man on the pier"; under the latter, the action of Bill's approaching the man took place on the pier. Preposing the locative PP disambiguates the sentence, eliminating the 'inside' reading where "the man" is on the pier, but the action of Bill's approaching him may or may not have taken place there.

(29)  
  a. Bill approached the man on the pier.
  b. On the pier, Bill approached the man.

As has been noted before, the locative PP's in ES prepose with great facility.

(30)  
  a. There is a guppy in the drainpipe.
  b. In the drainpipe, there's a guppy.

Thus, if the Complex NP Constraint or something like it is correct, for which there is a massive amount of evidence, the locative PP in (30) must originate outside the postcopular NP.

Exactly the same argument can be made from WH-movement. As the Complex NP Constraint would predict, (32) has only the "outside" reading appropriate to a derivation from (31), never the reading appropriate to derivation from a structure containing [VP the man on WH-some pier] (assuming the latter is even a well-formed NP).
(31) Bill approached [_{NP the man} {PP on WH-some pier}]
(32) Which pier did Bill approach the man on?

Analogous ES are grammatical:

(33) What dish was there too much pepper in?
(34) Which chair was there a cat sleeping on?

If the normal movement constraints of English are defined in ES, we must thus conclude that the coda in the sentences (35) and (36), from which (33) and (34) are derived by WH-movement, is not a NP.

(35) There was too much pepper in WH-some dish.
(36) There was a cat sleeping in WH-some chair.

While this argument is certainly strong counterevidence to the PS Hypothesis as presented in Jenkins (1972), there is a trivial way of reformulating the proposal so that it can be avoided. One could merely say that the locative constituents in ES are sentential locatives generated outside the predicate NP. This would do no essential violence to the PS Hypothesis, since copular structures with external locatives seem to exist independently, as in (39).

(39) a. John is a real pain in syntax class.
    b. Unemployment was a problem in late imperial Rome.

Note that the locatives in such examples can be preposed without changing meaning.
(40)  a. In syntax class, John is a real pain.
   b. In late imperial Rome, unemployment was a problem.

The same argument can be made more strongly, however. Compare the impossible extraction from the complex NP in (41) with the extraction from the supposedly analogous structure in the coda of (42).

(41)  a. I know many people (who are) interested in this problem.
   b. *a problem which I know many people (who are) interested in.

(42)  a. There are many people interested in this problem.
   b. a problem which there are many people interested in.

If the string many people interested in this problem in (42) were in fact a complex NP such as that in (41), the extraction illustrated in (42b) should be impossible. Interestingly enough, the addition of the parenthesized elements in (41) to (42), which has the effect of making the postcopular string an undeniable complex NP, also makes the extraction impossible.

(43)  a. There are many people who are interested in this problem.
   b. *a problem which there are many people who are interested in.

Thus it seems as if the postcopular string in examples like
(42) is analyzed in a way which is excluded in principle by the PS Analysis, but predicted by there-insertion. Notice that in this case, as opposed to the case of the sentential locatives discussed above, it is absolutely essential to the PS Analysis that the constituent involved in the extraction illustrated by analyzed as part of the predicate NP, since the PS Analysis derives most of its explanatory power (e.g. the explanations offered for the semi-modal and predicate restrictions) exactly from the claim that the VP and AP constituents following the head noun in ES are in fact nominal complements.

3.2.2 Arguments from Non-existent NP

As mentioned above, the fundamental claim of any analysis like Jenkins' must be that there exists an isomorphism between the range of possible codas in ES and the range of structures which occupy NP positions in English. In other words, the strings to the right of be should be independently generable as NPs, ceteris paribus. While this claim looks convincing at first, there are numbers of counterexamples. Before discussing them, I should probably mention that the existence of even a fairly small number of counterexamples to a claim like this is disproportionately damaging, for the simple reason that the claim is a very weak one to start with, thus constricting very highly the range of possible counterexamples. The reason it is so weak is that English has a very rich variety of noun complements which mirror almost exactly the range of VP structures which cooccur with be. This fact has provided
motivation for quite a lot of syntactic analysis, relative clause reduction rules such as WHis deletion (see Smith, 1964) and Chomsky's \( \mathbf{X} \) notation being two rather obvious examples. Given this, the predictions made about the range of structures to be found to the right of be in ES will be very nearly identical under the PS Analysis, which claims that all such structures are extended NPs, and under an analysis such as there-insertion, where everything to the right of the head noun in at least some ES will be a VP isolated from the rest of the sentence by the reordered subject NP. Jenkins is able to show two cases of non-parallelism between VP and noun complement structures where the non-parallelism supports his position. These are his treatment of the semi-modal restriction and the predicate restriction, and for the reasons outlined immediately above, these are the strongest arguments in the paper, if they can be made to work. The following are cases where the non-parallelism works against the PS Analysis.

The first such case is in fact a partial refutation of one of Jenkins' cases, the predicate restriction. Note that, while examples like (44), in accordance with the predicate restriction, are unacceptable, (45) is fine.

(44) a. *There are many people tall.
    b. *There were many comments intelligent.

(45) a. There were many people sick.
    b. At the beach yesterday, there were several people naked.
In other words, the predicate restriction has a class of exceptions. While this in itself is not an argument against the PS Analysis, the following is.

(46)  a. \{*Many people sick
          *Several people naked\} walked in the door.

       b. *I talked to \{many people sick,
           several people naked.\}

Whatever the factors are which cause the predicate restriction to be suspended in ES like (34), they do not carry over to noun complements such as those in (46). Thus any account which attempts to explain the predicate restriction as a reflection of restrictions on the form of nominal complements, as does the PS Analysis, will be unable to explain the acceptability of the sentences in (45).³

Other cases where the PS Analysis necessitates the postulation of NP of a form not otherwise attested in English are provided by ES such as (47).

(47)  a. My god, there's been a man shot.

       b. John wouldn't play because there were people talking.

Compare:

(48)  a. *A man shot just walked in.

       b. *I had a fantastic conversation with a man shot.

       c. *John went around putting gags on people talking.

       d. *People talking were disturbing the concert.

Such examples are illustrative of a quite general, if perverse,
principle about English NP structure: indefinite nouns cannot have VP or AP complements which consist only of a bare verbal participle or adjective. Thus:

(49)  a. Bill talked to the man shot.
   b. Bill talked to a man shot three times in the upright gland.
   c. *Bill talked to a man shot.

The existence of ES like (47) thus necessitates that the PS Analysis assign NP status to strings which otherwise never occur in such a configuration. Notice that under the there-insertion analysis examples like (47) will be derived from their paraphrases in (50), necessitating no assignment of NP status to the suspect strings.¹

(50)  a. My god, a man has just been shot.
   b. John wouldn't play because people were talking.

3.2.3 Other Arguments Concerning Passives and Progressives

Besides the non-attested NP argument given above, there are a number of other arguments which can be extracted from sentences such as (47), which under the there-insertion analysis are derived from passive and progressive sentences.

One such argument concerns the well-known fact that English non-stative verbs may not appear in the simple present tense, except in nomic or habitual readings. Thus, as a description of an ongoing event, (51) is impossible and (52) is all right.
(51)  a. *John talks to Bill outside.
      b. *John is shot outside.

(52)  a. John is talking to Bill outside.
      b. John is being shot outside.

The copula, on the other hand, normally appears in simple present tense, and in fact can take progressive only under special circumstances.

(53)  a. John is (*being) tall.
      b. This house is (*being) a wreck.

Under the PS Analysis, sentences like (54) are instances of the phrase structure expansion NP - COP - PRED, exactly like (55), while under the *there*-insertion analysis they are transformationally derived from sentences like (56).

(54)  There was a man shot outside.

(55)  This house is a wreck.

(56)  A man was shot outside.

Thus, the PS analysis predicts that ES like (54) should have the properties of other copular sentences, in particular that they should occur in simple present tense and not in present progressive, while the *there*-insertion analysis, which relates (54) to a passive sentence, makes the opposite prediction. The facts in cases like this support the *there*-insertion analysis.

(57)  *There is a man shot outside.

(58)  There is a man being shot outside.

(59)  (habitual reading) Every bloody day, there's a man shot outside.
In other words, it looks very much as if the instance of be following there in ES like (54) is not the copula, but rather the passive morpheme be.

A somewhat similar point can be made about ES such as (60).

(60) There is a man talking to Bill.

Stative verbs in English do not under normal circumstances take progressive aspect, as has been remarked countless times. Thus (61) is impossible.

(61) *John is knowing the answer.

Statives can cooccur with the non-progressive -ing which occurs in noun complements, however (see Williams, 1971, among others).

(62) A man knowing the answer won the prize.

The PS Analysis and the there-insertion analysis differ in their claims about sentences like (60) precisely in that the PS Analysis claims that the -ing in sentences like (60) is the noun-complement -ing, while there-insertion claims it is the progressive. Thus there-insertion correctly predicts the ungrammaticality of (63), but the PS Analysis does not.

(63) *There was a man knowing the answer.

Another argument against the PS Analysis can be derived from certain facts about the semantic interpretation of perfect aspect. Besides the durative/iterative reading of the perfect illustrated in (64), non-stative verbs in English allow a punctual interpretation such as is found in (65). This
reading can be reinforced by the use of the particle \textit{just}.

(64)  
\begin{enumerate}
\item a. John has hated his dog for years.
\item b. John has tried to give me his dog many times.
\end{enumerate}

(65)  
\begin{enumerate}
\item a. A bird has (\textit{just}) flown in the window.
\item b. A frog has (\textit{just}) been discovered in the toilet.
\end{enumerate}

Copula, being stative, does not have this second reading of perfect. Thus (66) is non-punctual, and is unacceptable when supplied with \textit{just}.

(66)  
\begin{enumerate}
\item a. This house has (*\textit{just}) been a wreck.
\item b. John has (*\textit{just}) been \{a fool
\item \hspace{1cm} an electrician
\item \hspace{1cm} a man without purpose\}.
\end{enumerate}

This generalization carries over to instances of copula occurring in ES like (67) which have only a NP in the coda.

(67)  
\begin{enumerate}
\item a. There have been many infamous dictators.
\item b. *There have just been many infamous dictators.
\end{enumerate}

ES like (68), however, do have the punctual reading.

(68)  
There's (\textit{just}) been a frog discovered in the toilet.

If (68) is taken to be structurally parallel to (67), as required by the PS Analysis, the instance of \textit{be} which it contains must be the copula, and its ability to receive the punctual interpretation is inexplicable. If, on the other hand, (68) is derived from the passive sentence (65b), as the \textit{there}-insertion analysis would allow, the main verb of the sentence is \textit{discover}, which is a non-stative verb and thus can tolerate the punctual
reading of perfect aspect, exactly as it does in (65b).

There is a complication to this argument which somewhat reduces its force, but I think it survives nonetheless. The problem is that there exists a class of NPs whose presence in an ES allows the punctual interpretation of perfect, in contravention to examples like (67).

(69) There has (just) been \{a concert, a snowstorm\, a riot

Given that such things as (69) occur, one might ask why ES like (67), (68) could not have NP codas after all, the punctual perfect being possible in them for the same reason that it is in (69), whatever that may be.

If we inspect a number of sentences like (69), however, we find that the NP involved have a common characteristic: they name events. Being events, they are located intrinsically in time, and a statement about their existence, such as (69), would be expected to be semantically equivalent to a predication by a verb such as occur. In fact, (69) is fully equivalent to a sentence like (70), where occur has been substituted for the occurrences of be in (69).

(70) There has (just) occurred \{a concert, a snowstorm, a riot

Occur is of course a point action verb, not a stative, and so we would expect it to take the punctual perfect interpretation, exactly like other point action verbs such as those in (65).
Since we have observed that be in contexts like that in (69) is equivalent in meaning to occur, due to the event interpretation of the NP, we should not be surprised that it also takes punctual perfect.

It appears then, that there is a reason why it is exactly event-denoting NP like concert, snowstorm, riot which appear in ES with punctual interpretations of the perfect. If the punctual perfect in ES like (67), (68) is to be accounted for in a similar way, it is then apparently necessary that the NP in such sentences be event-denoting. There are contexts which select for event-denoting NP, however, and while those in (69) show up in such contexts, the putative NP in (67), (68) does not. Compare:

(71)  a. A\[\text{riot}\]\{\text{snowstorm}\}\{\text{concert}\}\{occurs\}\{happens\} daily around here.

    b. The suddenness of the\{\text{riot}\}\{\text{snowstorm}\} was refreshing.

    c. The duration of the\{\text{riot}\}\{\text{concert}\}\{\text{snowstorm}\} was immense.

(72)  a. *A frog discovered in the toilet\{occurs\}\{happens\} daily.

    b. *The suddenness of the frog discovered in the toilet was surprising.

Similarly, the paraphrase relation between (69) and (70) is not reflected between (67), (68), and (73).
(73) *There has just occurred a frog discovered in the toilet.

Thus it appears that this alternative account of the punctual perfect facts is doomed. If this is the case, the argument given above survives.

Sentences like (68) and (iii) in footnote 5, repeated here as (74),

(74) There was a man studying Gothic at the party.

bring up a distinct but related problem. Nominal complements are normally interpreted as modifying phrases attributing some description to their head noun. Observe, for instance, the examples in (75).

(75) a. A man wearing a beret just walked in.

b. John talked with a man studying Gothic at the party.

The underscored strings in (75) are clearly NPs, since they occur in NP positions (subject, object of talk with). Furthermore, they are extraction islands, as one would expect them to be if they are NPs.

(76) a. *The beret that a man wearing walked in was greasy.

b. *The language that John talked with a man studying was Gothic.

In both these cases, the participial phrases wearing a beret and studying Gothic are interpreted as descriptions of the person denoted by a man. Compare these examples with (77), where a string similar to that underscored in (75b) occurs
as the complement of the "perception verb" see, which can take complements of the form NP - VP.

(77) John saw \{a man Bill\} studying Gothic

The non-NP- hood of the underscored material in (77) is shown by (78).

(78) What did John see \{Bill a man\} studying?

In (77), the participial phrase is interpreted not as a description of Bill, a man, but rather as an action engaged in by Bill, a man.

Notice now that the ambiguity previously noted in (74) is of exactly this description/action form. Furthermore, extraction of the object of studying is possible only under the action reading. Thus (79) is only a question about the activity going on at the party, not about the profession or habits of those present.

(79) What were there people studying at the party?

What can the PS Analysis say about this? Not much, since the coda of (74) is claimed to be a NP under all circumstances. The there-insertion analysis, by contrast, accounts immediately for the ambiguity and its correlation with the possibility of extraction, since it will derive (74) from the two sources (80) and (81).

(80) [NP a man studying Gothic] was at the party

(81) a man was studying Gothic at the party

The string in question is an NP in (80) and remains one throughout the derivation. In (81), by contrast, the string does not
exist in deep structure, and will at no point in the derivation be a NP.

A more graphic illustration of the same point made by (74) is found in (82), where the structure forced upon the sentences in question by the PS Analysis leads to an absurdity.

(82) There are peasants constantly being murdered.

If the underscored portion of (82) is claimed to be an instance of NP, the peasants concerned must have the unusual ability to die repeatedly, as in (83), since the string constantly being murdered will be a description.

(83) Peasants constantly being murdered are always falling down.

In fact, no such property is attributed under the normal interpretation of (82), which is more or less synonymous with (84).

(84) Peasants are constantly being murdered.

A similar argument can be made still more strikingly by sentences such as (85) (from Bresnan, 1971):

(85) While you watch, there will be a live pig roasted.

Preposed adverbials such as the while clause in (85) always take the (matrix) sentence as the scope of their modification, never embedded material. Thus (86) means only that John ate the pig while Bill watched, not that the pig was roasted while Bill watched.

(86) While Bill watched, John ate the pig roasted by the natives.
If the interpretation of the scope of the adverbial in (85) is assigned normally, and if the main clause has the structure (87), as required by the PS Analysis,

(87) there will be \([_\text{NP a live pig roasted}]\)

then the sentence should mean that a live pig roasted (whatever that can be) will exist while you watch (but presumably will disappear from the universe when you turn your head). The alternatives to this absurd conclusion are to give up the structure (87), and thus abandon the PS Analysis for cases like this, or to claim that some rule either lifts the adverbial clause out of the complex NP or interprets its scope down into the NP, in either case in violation of putative universal constraints on syntactic and interpretive rules. This seemingly lethal counterexample is made even more devastating by two additional considerations. First, the putative NP in (87) almost has to contain a contradiction if any meaning can be assigned to it at all, and in fact does contain one when it is modified in structure sufficiently to become grammatical.

(88) We photographed a live pig roasted over charcoal. Secondly, in analogous cases where there really is a complex NP to the right of be, the adverbial is interpreted exactly as I have claimed it must be, generating absurdities like (89), which, if the PS Analysis were correct for cases like (85), should be no more nor less absurd than (85).

(89) While John watched, there were pigs that were slaughtered.
To summarize this discussion, we have seen that a wide range of argumentation can be brought against the claims which are made by the PS Analysis about the constituent structure of ES. Furthermore, one of these arguments (the argument from non-attested NPs) partially vitiates Jenkins' argument from the predicate restriction, leaving the account of the semi-modal restriction as the only real evidence for Jenkins' position. Thus it seems we must conclude that the PS Analysis cannot be the correct theory of ES in English.
FOOTNOTES

CHAPTER 3

1. One can scarcely blame him; as mentioned above, devising rigorous formulations of there-insertion has scarcely been a favorite pastime of linguists, and Burt's formulation is in fact the most serious attempt I know of.

2. Actually, some of them aren't, but it seems to have nothing to do with their being ES. For example, I find sentences such as (i), (ii) surprisingly bloodcurdling, but their non-ES counterparts (iii), (iv) are not any better.

   (i) *What was there a cat on?
   (ii) *Who was there a man shot by?
   (iii) *What was a cat on?
   (iv) *Who was a man shot by?

3. It is important not to be confused by the existence of sentences such as (i).

   (i) I found many people sick.

Independent evidence exists which shows that the string many people sick in such examples is not a constituent, NP or otherwise. For example, the passive of such sentences is (ii), not (iii).

   (ii) Many people were found sick.
(iii) *Many people sick were found.

Such sentences will be discussed somewhat in the next chapter.

4. In fairness I should mention that this argument is open to a criticism which can be applied to all arguments of the following form, of which it is an instance: construction A is subject to unexplained regularity R; string S is not subject to R; therefore, S is not an instance of construction A. The criticism is simply that one's ignorance of the nature and eventual explanation of R makes it impossible to conclude with perfect confidence that an adequate account of R, if and when one is forthcoming, will not dispose of the exceptionality of S in some way which will allow S to be analyzed as an A. In the case at hand, we know virtually nothing about R (the restriction of single-word nominal complements from NPs headed by indefinites); it certainly cannot be stated as a restriction on a syntactic rule, if the concept of syntactic rule is to have any meaning, and it is difficult to believe that there is any semantic principle involved in the matter, since the allowed and disallowed structures are often fully synonymous:

(i) A man tossed out the window fell with a splat.

(ii) *A man defenestrated fell with a splat.

(iii) The reporter interviewed a man wounded by a gun.

(iv) *The reporter interviewed a man shot.
The restriction, in other words, is a very weird one, and strictly speaking, we cannot say it is an impossibility that some fact about the syntax, semantics, pragmatics, or phonology of ES can be utilized to explain the inapplicability of the restriction to the coda of ES while maintaining the assumption that the coda is always an instance of NP. It seems to me an extremely remote possibility, however, and I feel few pangs about ignoring it in practice.

5. This is not quite correct. In fact, the *there*-insertion analysis claims that sentences like (60) are at least potentially ambiguous, since such sentences can be derived not only by the application of *there*-insertion on progressive sentences, but also by the application of *there*-insertion to sources of the form (i), which is necessary to derive sentences such as (ii).

   (i) \[ \text{NP} \text{ a man knowing the answer} ] - T - \text{be} \\

   (ii) There are people who believe in leprechauns.

Factors which I do not fully understand make this latter reading less accessible than the progressive reading in sentences such as (60), so that its existence does not unduly complicate matters in the judgments below. The non-progressive reading can, however, be reinforced by appropriate meddling with the examples. Thus (iii) is fully ambiguous between a reading where someone was engaged in the rather odd activity of studying Gothic at the party
and a reading where a person is claimed to have been at the party who is engaged in the study of Gothic as a profession or avocation.

(iii) There was a man studying Gothic at the party. In such cases, (iv) is grammatical under the second reading.

(iv) There is a person knowing the answers in the back row.
CHAPTER 4
THE CLEFT REDUCTION HYPOTHESIS

4.1 Summary of the Analysis

Jenkins (1973) offers an alternative base-derived theory of ES which abandons the claim of the PS Hypothesis that the coda of ES is always in instance of NP, and thus would seem to avoid much of the criticism levelled at the PS Hypothesis in the last chapter. The core of the analysis is a claim that ES are parallel in (deep and surface) structure to cleft sentences and sentences with complement-taking "perception verbs," such as see, hear, feel. Superficially, these three types of sentences show a large degree of parallelism in structure. Compare (1) - (3).

\[
\begin{align*}
(1) & \quad \text{There was a man} \quad \begin{cases} \text{in the room.} \\
\text{shot (by the police).} \\
\text{stabbing pigeons.} \end{cases} \\
(2) & \quad \text{It was John} \quad \begin{cases} \text{in the room.} \\
\text{shot (by the police).} \\
\text{stabbing pigeons.} \end{cases} \\
(3) & \quad \text{John saw Bill} \quad \begin{cases} \text{in the room.} \\
\text{shot (by the police).} \\
\text{stabbing pigeons.} \end{cases}
\end{align*}
\]

According to Jenkins, all three of these sentence types are to be derived from structures roughly of the form (4)\(^1\)

\[
\begin{tikzpicture}
  \node (S) at (0,0) {S};
  \node (NP) at (-1,-1) {NP};
  \node (VP) at (1,-1) {VP};
  \node (V) at (0,-2) {V};
  \node (NP1) at (1,-2) {NP};
  \node (S1) at (0,-3) {S};
  \draw (S) -- (NP);
  \draw (S) -- (VP);
  \draw (VP) -- (V);
  \draw (V) -- (NP1);
  \draw (NP1) -- (S1);
\end{tikzpicture}
\]

\(^1\)
The complement sentence in (4) is claimed to be similar in internal structure to a relative clause, differing only in not occurring on the right branch of a NP. Examples of the application of this structure to the three sentence types under discussion follow in (5) - (7).

(5) clefts

(6) ES

(7) PV
Jenkins assumes a rule of Cleft Reduction, which is essentially identical to the Wh - be deletion rule proposed for relative clause reduction by Smith (1964). This rule will apply to structures like those in (5) - (7), deriving the sentences in (8) - (10).

(8) \{lt\} was John \{kicking Bill.
\{on the roof.

(9) There were several people \{kicking Bill.
\{on the roof.

(10) John saw Bill \{kicking Tom.
\{on the roof.

The motivation for an analysis like this is evident: all four of the peculiarities of ES for which an account was offered under the PS Hypothesis can be explained in a similar way under this theory, but without the overly strong assumption that the coda is always a NP. The cleft reduction rule, just like relative clause reduction, does not apply to semi-modal be or before instances of PRED, as shown by the ungrammaticality of (11), (12).

(11) a. *It was John (going) to kick Bill.
b. *John saw Bill (going) to kick Tom.

(12) a. *It was John tall.
b. *John saw Bill tall.

The sourcelessness problem is solved by the same means as before, that of generating ES in essentially their surface form in deep structure. Finally, the leftmost be restriction is
obviated in the same way that it is under the PS Analysis; progressives are impossible with main verb be.

It seems to me that the above analysis is hopeless as it stands. The reduction rule derivation seems quite plausible for clefts, but it is extremely ad hoc for the perception verb sentences. In the case of clefts, the rule is an expression of the fact that reduced clefts of the form (8) always or almost always have paraphrases with a full WH-sentence, as in (5). Structures with full WH-clauses following object noun phrases of perception verbs, however, are never found in surface structure, and there is absolutely no evidence that a structure as complex as that in (7) should be assumed for them. The only evidence Jenkins gives to show that this structure is to be assumed in preference to, e.g., that given by Rosenbaum (1967) or Emonds (1970) is that the "independently necessary" rule of cleft reduction can be employed in their derivation from a structure like that given in (7), whereas Rosenbaum and Emonds need a special rule of be deletion for such cases. Needless to say, this argument is totally without force; utilizing the cleft reduction rule in the derivation of PV sentences necessitates the postulation of sources like (7), whose ungrammaticality in surface structure in turn necessitates that the rule be obligatory for exactly these cases, just so that they can be derived from the otherwise unmotivated sources (7). Furthermore, the assumption of a rule like cleft reduction as the essential syntactic mechanism in
the derivation of both clefts and PV sentences obscures important
distributional differences between them. Compare, for instance,
the results of the extraction of items from the cleft sentences
in (13) with the results of similar extractions from the
complement of a perception verb in (14).

(13)  a. That's John behind the bookcase.
b. "Where is that John?  
c. It was John talking to Mary.
d. "Who was it John talking to?

(14)  a. Bill saw John behind the bookcase.
b. Where did Bill see John?  
c. Bill saw John talking to Mary.  
d. Who did Bill see John talking to?

These are difficult facts to explain if one assumes an identity
of structure between the sentences in (13) and those in (14).
Similarly, locative adverbials can prepose from a position
inside a PV complement, but not from inside a cleft.

(15)  a. "Behind the bookcase, that's John.  
b. Behind the bookcase, Bill saw John.

Considerations such as the above make it very difficult to
maintain the claim of parallelism of structure between cleft
sentences and sentences with perception verbs. There remains
the possibility, however, that one or the other of these sentence
types taken individually might provide an appropriate deep
structural analogue for ES, thus making it possible to maintain
a non-movement analysis of ES without postulating special deep
structures peculiar to ES. In order to investigate this possibility, I will consider separately the plausibility of clefts and of PV sentences as structural analogues to ES. I will not contest the implied claim that these analogues are themselves to be derived without appeal to a movement rule; in the case of the PV sentences, this is obviously the case, but in that of the clefts it is not altogether clear.

4.2 The Relationship of Clefts to ES

Since their goals are essentially identical, the argumentation for the cleft reduction hypothesis as an analysis of ES will be the same as that given for the PS hypothesis: the predicate restriction and the semi-modal restriction have parallels in cleft structures, and the sourcelessness problem and the leftmost be restriction are structurally explicable because the analysis regards ES as present in deep structure as copular sentences. In view of this, it is natural to ask if the analysis is also vulnerable to the counterarguments brought against the PS Analysis in Chapter 3. It turns out that many of them can be applied against the cleft reduction hypothesis, mutatis mutandis, with equally telling effect.

One such case has already been shown. The extraction facts adduced in Chapter 3 to show that the claim that the coda of ES is in all cases an instance of MP is mistaken also show a difference between the coda and the postcopular material in clefts. Compare (16) with (17).
(16)  a. There's a salt cellar in the cabinet.
    b. Where is there a salt cellar?
    c. There are many people interested in this problem.
    d. a problem that there are many people interested in

(17)  a. It's John on the roof.
    b. *Where is it John?
    c. It's John interested in this problem.
    d. *a problem that it's John interested in

Another argument which can be directly transferred to the evaluation of the cleft reduction hypothesis is that which proceeds from sentence (18).

(18)  While you watch, there will be a live pig roasted.

The corresponding cleft sentence (19) is nonsensical,

(19)  *While you watch, it will be a live pig roasted.

for the obvious reason that the adverbial while you watch is being interpreted as a modification of the main verb be, which is what would be predicted if the ES (18) but not the cleft (19) is derived from a structure in which the main verb is not be, but rather be roasted.

For similar reasons, the punctual interpretation of the perfect aspect is impossible in clefts, although, as shown in the last chapter, it does occur in ES.
(20) There's just been a tree blown down.
(21) *It's just been the apple tree blown down.

Once again, this seems to be a reflection of the fact that clefts but not ES have as their main verb the copula be, which is stative and thus bars the punctual reading.

Still another way in which cleft sentences differ from ES is in their behavior toward adjectival predicates. As noted above, the predicate restriction on ES is sensitive to a distinction between two classes of adjectives, typified by, e.g., sick and tall. The distinction is represented by the difference in grammaticality between (22a) and (22b).

(22) a. There were several people sick.
    b. *There were several people tall.

Cleft sentences, on the other hand, do not seem to allow any adjective or AP predicates at all among the range of structures occurring after the postverbal NP.

(23) a. *It was John sick.
    b. *It was John tall.
    c. *It was John tall enough to play basketball.

We see from the above remarks that cleft sentences and ES seem to evince a number of the same distributional dissimilarities that were encountered above between ES and NP - COP - PRED structures. In my opinion, these problems are severe enough to compel the abandonment of the cleft reduction hypothesis as a theory of the syntax of ES.
There is one additional argument in the paper for the existence of a structural parallel between there-sentences and clefts, and it should probably be dealt with here as well. The argument is the following: in both clefts and ES, sentence stress falls on the NP following be. As is well known, the English nuclear stress rule normally places sentence stress on the rightmost category in the sentence, as for instance in (24).

(24)  

a. John kicked Bill in the seat of the pants.

b. John kicked the man who was spitting on his thesis.

The exceptional nature of the stress placement in ES could, according to Jenkins, be accounted for by whatever principles will be necessary to account for it in clefts, if the two sentence types are regarded as parallel in structure.

In addition to the fact that this argument is of the type characterized above (chapter 3) as "reduction to an unsolved problem" and thus falls under the objection which can be levelled at all arguments of this form, it has two major difficulties: the facts are unclear at best, and even if they were not, they could show nothing whatever about the deep structure of ES. With regard to the first point, consider the following pairs.

(25)  

a. I was John in the room.

b. There was a man in the room.
c. There was a car on the sidewalk.
d. It was a car on the sidewalk.
e. It was John run over by a bread wagon.
f. There was a man run over by a bread wagon.
g. It was John talking on the phone.
h. There was a man talking on the phone.

The stress facts are not nearly so parallel as one might hope. The observation that the postcopular NP takes stress seems to hold up for clefts, but collapses for ES when a wide enough range of data is considered. With regard to the second point, it should be noted that the nuclear stress rule applies at a very superficial level of structure, either at surface structure, or at the end of the syntactic cycle as suggested by Joan Bresnan (Bresnan, 1971). But there-insertion or whatever other mechanism is responsible for the generation of ES under a transformational hypothesis is certainly cyclic, for reasons enumerated in chapter 1. If this is the case, ES will have essentially their surface syntactic form by the time the nuclear stress rule applies to them, so that facts about stress can be expected to tell us nothing about the nature of their deep structures.

As a final point on the argument from nuclear stress, one might well wonder if the exceptional nature of stress placement in clefts is to have a structural explanation at all. The postcopular NP position in clefts is certainly a focus position,
and it seems rather likely that the strong stress on this position can be attributed to the attraction of emphatic stress to focus. One notes, for instance, the phonetic similarity of the cleft cases to instances of emphatic stress like (26), as opposed to the non-emphatic stress in (27), where the stress on books is a result of the nuclear stress rule (see Bresnan (1971)).

(26) I said John kicked Bill in the face, not slapped him.

(27) What books has Mary written?

In (25) and (26), the stress is followed by a rapid fall in pitch and a following uniform low pitch which suppresses secondary stress in the remainder of the sentence. In (27) this is not the case. If the stress properties of cleft sentences are to be explained by an appeal to emphatic stress attraction to focus, it of course means that they could not be used to argue for a structural similarity between clefts and ES at any level of structure, even if the data in (25) fully supported the claimed parallelism. All it could possibly mean is that there is a semantic similarity between the sentence types in that the postcopular NP position is to be characterized semantically by the notion focus (or some larger notion incorporating it).

For the above reasons, I feel that the argument from sentence stress does not show a great deal about the nature of ES.
The Relationship of Perception Verb Sentences to ES

The attempt to relate ES and perception verb sentences structurally would appear to be the most viable of the base-derived analyses of ES. The distributions of structures in the complement of such verbs is almost point for point identical with that in the coda of ES. Observe the pair (28), (29).

(28) There were several people
   \[
   \begin{align*}
   &\text{shot} \\
   &\text{stabbing pigeons} \\
   &\text{sick} \\
   &\text{*tall} \\
   &\text{in the room} \\
   &\text{* (going) to see the movie} \\
   &\text{* stab pigeons}
   \end{align*}
   \]

(29) John saw Bill
   \[
   \begin{align*}
   &\text{shot} \\
   &\text{stabbing pigeons} \\
   &\text{sick} \\
   &\text{*tall} \\
   &\text{in the room} \\
   &\text{* (going) to see the movie} \\
   &\text{stab a pigeon}
   \end{align*}
   \]

The only difference observable in the distributions above is that PV complements, but not ES codas, can consist of a VP with a bare, non-tensed verb form. As Jenkins points out, the force of this one non-parallelism is weakened by the fact that not all PVS can have the bare verb complements. Thus:

(30) John \{spied, spotted\} Bill
   \[
   \begin{align*}
   &\text{shot} \\
   &\text{stabbing pigeons} \\
   &\text{sick} \\
   &\text{*tall} \\
   &\text{in the room} \\
   &\text{* (going) to see the movie} \\
   &\text{* stab a pigeon}
   \end{align*}
   \]

As a further point in favor of this analysis, it should be pointed out that none of the arguments adduced against the PS
and cleft reduction hypotheses have any force here. Extraction is possible out of the complements of PV, just as it is out of the coda of ES:

(31) What did John see Bill stabbing?

Similarly, none of the other arguments based on the NP-hood of the coda can be applied here, since the coda is no longer claimed to be a NP. Finally, the group of arguments based on showing dissimilarities between the be of certain ES and the copula be cannot be expected to apply, since the be which is being hypothesized to occur with PV-type complementation is a type of be which we can know nothing about a priori. It will in fact be surprising if it is at all similar to the copula with respect to the semantic properties which determine the facts about punctual perfects, simple present tense, etc., since it is claimed to form a complementation class with verbs such as see, hear, feel, which differ from copula markedly in semantic properties.

In fact, it is not obvious that an analysis of ES which likens them in structure to PV sentences will be empirically distinct from the TI analysis. One can see why this could be expected to be the case by inspecting the probable structure of perception verb complements.

Rosenbaum (1967) and Emonds (1970) suggest that the complement structures following the object NP of perception verbs are infinitival sentences in deep structure, similar to (32).
Surface structures like (29) will be derived by the application of a rule of auxiliary deletion to the lower sentence. The derivation of a sentence like (33), where a passive verb phrase is found in the complement, will presumably be accomplished by whatever mechanisms are necessary to derive the passive complements of force-type verbs, as in (34).

(33) John saw Bill shot by his hunting guide.

(34) John forced Bill to be examined by a doctor.

For reasons that I will not go into here, I feel that it is at least equally likely that PV sentences have deep structures more like (35).

(35)
Instead of an AUX deletion rule, this analysis will have a be deletion rule. Passive complements will be derived straightforwardly because there would be no way to prevent the application of the passive rules within the matrix VP, given the theory of transformations assumed in this thesis.

Under either of these conceptions of the structure of PV complements, it is obvious that there will be a large degree of structural similarity between PV sentences and the derived structure of ES under a there-insertion analysis. Consider, for instance, an ES like (36).

(36) There were several people stabbing pigeons.

The probable structure of such a sentence after the application of the there-insertion rule would be (37).

(37) \[ S \rightarrow \text{NP} \rightarrow \text{AUX} \rightarrow \text{NP} \rightarrow \text{VP} \]

\[ \text{there were} \rightarrow \text{several people} \rightarrow \text{stabbing pigeons} \]

This is exactly parallel, except for the substitution of AUX for V, to the PV structure in (35), and differs from that in (32) only in the absence of PRO and the nonexistence of a complement S node. If the claims about the form of ES which are made by the TI analysis and the PV analysis are this similar, differing almost solely in that the TI analysis claims that the agreed upon structure arises by movement, while the PV analysis claims it does not, it is going to be very hard to pin the two analyses down to differing predic-
tions; the arguments from derived constituent structure which have been heavily appealed to thus far in arguing against base-derived analyses will, in particular, be unavailable.

There are, however, questions both factual and theoretical which can be brought to bear on the matter.

The first of these has to do with the small hole in the parallelism between PV complements and ES codas which was noted above: that ES codas never exhibit the bare tenseless verb phrases which can be found in the complements of some perception verbs. If this were unsystematic, as Jenkins hints it is, it would be a matter of no importance. In fact, however, this inability of some PVs to take the bare VP complement correlates exactly with an absence of passive complements. Compare (38), (39) with (40), (41).

(38)  a. John saw Bill smile.
      b. John heard Bill call his name.
      c. John felt the rope tighten.

(39)  a. John saw Bill shot (by the police).
      b. John heard his name called.
      c. John felt his arm brushed.

(40)  a. *John spotted Bill cross the street.
      b. *John perceived Bill call his name.
      c. *John found Bill pet his cat.
      d. *John spied Mary seduce his sister.
(41)  a. *John spotted the tree felled.
b. *John perceived his name called.
c. *John found Bill kicked by Fred.
d. *John spied the house broken into.

There are some cases where this generalization appears to be violated by the appearance of a passive complement with a verb that cannot take the bare active. On closer inspection, however, these cases turn out to be not passive verbs, but rather the homophonous passive participial adjectives, which can be distinguished from the passive verbs by their stativity. Compare, for instance, the sentences in (42), where the 'a' example contains a passive verb and the 'b' example a passive participial adjective.

(42)  a. John saw the door closed with a bang (by Bill).
b. John saw the door closed at 10 a.m., and I saw it closed at 4 p.m. -- in fact, I'm quite sure it was closed all day.

The examples in the complement of a verb which does not have the bare active form are always parallel to the second type above.

(43)  John found the house destroyed.

Thus (43) means only that John found the house in a state of ruin, not that he discovered the act of its destruction in progress. Similarly, (44) means only that Bill was found in a welter of blood, not that the act of shooting was witnessed.
ES, by contrast, have passives in the coda, but never a form parallel to the bare active VPs encountered in the complements of those PVs which take passive complements.

(45)  a. There has been a man shot.
       b. There was a house destroyed.
       c. There were many things accomplished.
       d. Suddenly there was a door slammed with a bang.

(46)  a. *There has been a man shoot his dog.
       b. *There was a wrecking crew destroy a house.
       c. *There were people accomplish many things.
       d. *Suddenly there was someone slam a door with a bang.

If ES are indeed structurally parallel to perception verb structures, how is this to be accounted for? The only way I can see would involve claiming that there is no passive transformation, which is very nearly equivalent to a claim that there is no syntax, which in turn is equivalent to a claim that there is nothing very interesting about the formal structure of language. While one suspects there are people who would welcome such a conclusion, it will not be considered here. If on the other hand, ES arise from a movement rule like there-insertion, exactly this distribution of facts is predicted. ES have passive but not bare active codas exactly because the
coda arises from the movement of a NP around be; they have passives, in other words, because they have progressives and because they have adjective phrases and because they have locational phrases: all these strings cooccur with be, therefore they will occur to the right of the moved NP in ES. Perception verb complements, on the other hand, are generated in place at deep structure as either complement sentences or verb phrases. One would therefore expect them to show exactly the distribution of constructions found in verb phrases in general, allowing only for the effects of the AUX/be deletion rule.4 That this appears to be what one in fact finds in the PV complements, but not in ES codas, constitutes rather strong support for an analysis in which these constructions are differentiated as they are by the there-insertion analysis.

Another consideration which makes it unattractive to claim that ES are introduced in underlying structure in a form similar to that of PV sentences is that such an analysis will necessitate the introduction of a particularly ad hoc and powerful selectional mechanism exactly for this case. It is necessary under this analysis to subcategorize be for a perception verb-type complement, but this sort of complement structure is realized with be only when there appears in subject position. As far as I know, such a selectional restriction on complementation is not otherwise necessary in the description of English or any other language, and one must hope that such a case is never discovered, as the power of a selectional restric-
tion of this type is overwhelming. With this sort of mechanism it should be possible, for instance, to restrict that complementation to only those sentences with the verb believe in which the subject NP has a relative clause.

It might be protested that there is nevertheless a degree of semantic plausibility about this restriction of PV-type complementation to instances of be which happen to have there in subject position. The perception verbs see, hear, feel are verbs of perception or witnessing, as the name given to them indicates. Such verbs could be expected to take names of events as objects. Similarly, as shown in chapter 3, names of events can occur after there be, in which case there be receives an interpretation similar to occur. It might thus be suggested that some interpretive principle assigns a reading of eventhood to structures with the syntactic form of PV complements, and the appearance of there be but not, e.g., John be in sentences with such complements is an instance of a generalization about what predicates can take events as objects. The trouble with this is that there are a lot of other verbs which can take event objects, prevent, for instance. Such verbs do not take PV-type complementation. If there is some other semantic property shared by perception verbs and there sentences which could conceivably make the sort of selectional statement necessitated by the attempt to relate the structures seem less ad hoc, I must confess I do not know what it is.
As a final point in this connection, it is interesting to note that of the class of verbs which can occur as main verbs in ES, only be allows the kind of complex verbal coda which is claimed to parallel the PV complements in structure.

(47)  
  a. There occurred a strike.
  b. There ensued a discussion.
  c. There grew corn in the garden.

(48)  
  a. *There occurred a strike declared.
  b. There was a strike declared.
  c. *There ensued a discussion suggested.
  d. There was a discussion suggested.
  e. *There grew corn being harvested.
  f. There was corn being harvested.

The analogy with PVs cannot explain this. A TI analysis, on the other hand, claims that sentences like (48b), (48d), and (48f) are derived from passive sentences by the movement of the subject NP around be. For this reason, only be can occur to the left of NP in such sentences.

Thus we see that there are reasons to believe that this third base-derived theory of ES must also fail.

4.4 The Range of Alternatives for the Structure of the Coda

In this and the previous chapter, we have inspected three
distinct theories of the syntactic structure of ES in which no appeal is made to their derivation by a NP movement rule. By comparing their essential claims and the consequences of those claims with those of the there-insertion analysis, we have seen that all three non-movement analyses raise problems at least as severe as those they resolve. Quite naturally, most of the argumentation has focussed on claims about the structure of the coda, since the existence of this structural feature is from one point of view the most striking syntactic fact about ES. The real result of much of the preceding two chapters, then, is that we have shown that none of the three base-derived theories under consideration is capable of accounting in an insightful way for the structural peculiarities of the coda. It would be appropriate to pause here and ask the following more general question: are there other theories of ES not incorporating a NP movement rule which could possibly overcome the difficulties discovered in the PS Analysis, the analysis from cleft reduction, and the analysis from perception verb complementation? Stated the other way around, by eliminating the above theories from contention in the search for a reasonable theory of English ES, have we eliminated base-derived theories in general?

I suspect we have. Consider for a moment the question: what do we really know about the syntactic structure of the coda? First, we know that it consists of a NP followed by a dis-
juncture of phrase categories: VF, AP, PF. Second, we know that the array of categories to the right of NP is not a nominal complement, because of extraction facts and the other arguments about NP-hood adduced in chapter 3. Thus it appears that the coda must consist of a concatenation of a NP with some phrasal category or sentence to the right of it. Independently we know of only three types of sentences in English which exhibit this sort of structure in the verb phrase: cleft sentences, PV sentences, and sentences with verbs of the force type. We have eliminated the first two of these in the above discussion, leaving only the force sentences. These sentences, however, would fail as a structural analogue for ES in exactly the same way that the PV sentences do: there would be no account of the existence of passive but not active VP codas in ES. The only remaining alternative would be to set up ad hoc a special deep structure complementation type for ES, presumably having the structure \([V_P V \text{NP} V_P]\), and accept the sentential alternative for the deep structure of PV complements, in order to distinguish them structurally from ES.

But now, as before, there will be no explanation of the inability of verb forms which cannot independently be generated in construction with be to occur in the coda of ES.

For these reasons, it seems to me that the acceptance of the argumentation in this chapter and the preceding one essentially eliminates any hypothesis claiming that ES are not reordered. In the next chapter we will consider as an alternative to the
there-insertion analysis a theory in which a movement rule is employed, but which assumes that the proper derivation of ES is from sources different from those given in the there-insertion analysis.
FOOTNOTES

CHAPTER 4

1. This is my interpretation. Jenkins does not spell out the nature of the proposed structures in any detail, and it is possible that he would disagree with one or another aspect of this, particularly the decision to depend the complement S from VP, rather than from the matrix S. I think this is irrelevant. I should also point out that my remarks in this chapter pertain to a circulated pre-publication version of the paper, which is all I have been able to obtain. It is possible that certain of my criticisms do not pertain exactly to the published version. I feel certain, however, that most of what I say would be germane to any theory incorporating the central claim of this one: that ES, clefts, and PV sentences are identical in structure at all levels.

2. Perhaps I am again being unfair. It is difficult to tell from the paper whether Jenkins intends the stress argument to be a direct argument for assigning cleft-like underlying structures to ES, or merely to show that the cleft analogue is preferable to the PS Analysis as an account of the derived constituent structure of ES, relying on the arguments in Jenkins (1972) to establish that ES are essentially identical in deep and surface structure.
Nonetheless, it is important to realize that if the former is intended, it is wrong.

3. (32) incorporates some misrepresentations of Rosenbaum's theory of complementation which are irrelevant to the present purposes.

4. The fact that no remnant of perfect aspect shows up in \( PV \) complements is probably explicable on semantic grounds. \( PV \) sentences express statements about the witnessing of actions. Since the perfect aspect is interpreted as an expression of prior time, it is not difficult to see why the two should not cooccur; it is difficult to witness at time \( t \) a happening at time \( u \) prior to \( t \).
CHAPTER 5
THE IOC-FRONT PROPOSAL

In recent years there have appeared a number of proposals (e.g. Hahn (1966), Fillmore (1968), Lyons (1967), Kuno (1971), Aikballl (1973)) whose common property is an attempt to explain certain characteristics of ES by postulating a syntactic relationship between ES and some non-ES structure crucially containing a locative. The appeal of such an approach is hardly mysterious: ES, as their name suggests, are generally supposed to express propositions concerning existence, and the attempt to equate the notions of existence and location on some level of abstraction has been a topic of interest off and on for several thousand years. If a syntactic dependency could be demonstrated between the occurrence of existential there and the presence of a locative constituent, it would be an interesting indication that there is something real and empirically significant about this reduction of concepts. Furthermore, the standard examples of ES generally contain a locative adverbial, and the homophony of the existential formative there and the locative (deictic) there of sentences such as (1) appears to be a fact crying for an explanation in terms of a hypothesis relating all ES to locative-containing structures.

(1) John's over there.

In this section, I shall discuss the proposal of Kuno (1971), which is typical of locative-based analyses and better thought
out than most. I shall refer to this analysis as the LOC-front proposal.

5.1 Summary of the Proposal

The analysis of English ES found in Kuno (1971) is actually part of the more ambitious undertaking of attempting to motivate a universal claim about the structure of ES in natural language. Consequently, the arguments in the paper are taken not only from English, but from several other languages as well, especially from Japanese. I shall restrict my attention to the group of arguments about English, primarily because this is a thesis about ES in English, but also because my ignorance of the other languages employed in Kuno's paper is sufficiently profound to make me distrust any evaluation which I might make of the arguments. It is important to note that this sort of restriction of attention in no way weakens the arguments below. Proposed universals must constantly be tested against their ability to generate reasonable analyses of phenomena in individual languages. If universals are allowed to stand when they can be shown to have consequences which grossly diminish the adequacy of grammars of languages, any set of universals can be maintained, and the whole enterprise of universal grammar is rendered vacuous.

Kuno's proposal is essentially the following:

ES are syntactically derived from a prior representation of the form LOC - V - NP, where LOC represents a locative PP
or adverbia. Thus all ES, e.g. (2), will have sentences such as (3) in their derivational histories.

(2) There is a pregnant mouse on the desk.

(3) On the desk is a pregnant mouse.

Sentences such as (3) appear in surface structure, so the rule which derives (2) from (3) is optional. The rule which accomplishes this derivation is referred to as Locative Extraposition. Its effect is to move the sentence-initial locative constituent to the end of the sentence, leaving there as a pronominal copy of the locative. Also included in the analysis is the familiar rule of Adverb Preposing, which applies optionally later in the derivation to derive (4) from (2) by preposing the extraposed locative constituent to sentence-initial position.

(4) On the desk, there is a pregnant mouse.

There is a certain amount of equivocation in the article concerning the question of whether structures such as (3) are to be taken as representing deep structure, or merely some necessary earlier stage in the derivation of (2) and (4) which is itself derived from some deeper representation. In this discussion I will assume, as Kuno seems to in practice, that (3) is deep structure, and then consider the consequences of the contrary assumption at the end of the discussion.

5.2 Evaluation of the Arguments

Kuno gives two syntactic arguments for his proposal, and one rather lengthy and complex argument dealing with certain facts about the interpretation of relative scope of quantifiers. The
first syntactic argument is the primary one for any locative-based analysis, namely that the existential formative **there** is phonologically identical to the locative adverbial **there**. Under Kuno's analysis, this is no longer an accident. Existential **there** is introduced as a pronominal copy of a locative constituent, giving a principled reason for the formative being **there** rather than some arbitrary piece of phonological material. Arguments explicitly or implicitly of this form are encountered in the literature with considerable frequency, for instance in Dougherty (1968) as an argument for deriving **each other** from **each** ... **the other**,¹ and in connection with **there** in Lyons (1967), Kimball (1973), Fillmore (1968), etc., but it is important to understand that they are extremely weak a priori. In order for an argument like this to be convincing in itself it would have to be the case that there are no instances of homophony in language, which is absurd. Would one for instance want to derive the underlined items in (5) and (6) from a common source because of their phonological identity?

(5) John is over **there**.

(6) That's **their** cat in the fish cellar.

This is not to deny, of course, that an analysis offering an explanation of an instance of homophony is to be preferred to one which does not, ceteris paribus. The trouble is, cetera are very seldom paria; there are almost always other arguments, other considerations to bring to bear on an analysis, and in such cases homophony arguments should be conspicuous in their modesty.
The argument concerning there is not even particularly strong as homophory arguments go. For one thing, we are asked to accept without proof that there is reason to believe that there is the normal pronominal form of locative constituents; otherwise nothing is gained by claiming that the there of ES has this provenance. This is not strictly true, however, as shown below.

\(7\) I was at Sally's apartment on March 1, and I was there on December 23 as well.

\(8\) I was in this room on April 2, and I was here once before as well.

If it makes sense to talk of pronominal locatives at all, the instances of here and there in \((8)\) and \((7)\) are certainly such animals. We see from these examples that the here/there proximate/distant distinction is present in such cases. How, then, are we to account for the following?

\(9\) There's a sleepy tiger cat in this room.

\(10\) *Here's a sleepy tiger cat in this room.

I can think of no answer. If it is claimed that existential there is a pronominal locative in some sense in which the instances of here and there in \((8)\) and \((7)\) are not, for instance if existential there were a transformationally inserted copy pronoun while the others were base-inserted lexical items, then we are left with the same problem which the analysis purports to solve: why there? Since this will be the only instance of a locative copy pronoun in the language, and since by hypothesis it will be unrelated to locative pronominals such as
those in (7) and (8), there is no explanation of its phonological shape; it might as well be where or somewhere, or for that matter Dougherty's famous verba glark. We are exactly where we started.

J. R. Ross has suggested to me that there does exist a pronominal locative in English in which the proximate/distant distinction is not marked, namely that found in sentences containing topicalized place NPs. According to Ross, (11) is acceptable if uttered within the room in question.

(11) This room, I've never slept there before.
I find (11) nonsensical, in contrast to the perfect (9).

Furthermore, there are other differences between the locative and existential there. Existential there, for instance, never takes stress, while locative there is freely stressible. It could be protested that destressing is a general property of anaphoric items, to which the existential there conforms, but this does not quite reach the issue. Even anaphoric items are capable of receiving emphatic stress, but existential there is simply not. In the following examples, emphatic stress is indicated by underscoring.

(12) Mary claimed that she did it.
(13) Maybe I was here on March 2, but I was there on March 1.
(14) *Bill didn't claim he had found a 30-year-old virgin, only that there was one. (cf. the grammatical
... there was one.)

One can imagine ways of circumventing this argument. The following one is more troublesome.

Recall that the application of the NP movement rules of passive, raising, and subject-auxiliary inversion to existential there was taken above as evidence of its NP-hood. Compare these cases with (15) - (18), where the instance of there involved is the locative there.

(15) There's my coat.
(16) *There seems to be my coat.
(17) *There was thought to be my coat.
(18) *Isn't there my coat?

Apparently, locative there, as in (15) - (18), is not a NP. How does it happen then that the existential there is a NP, if it is to be viewed as a pronominal replacement of a locative adverbial, when we see that instances of there which really are locative do not appear to be NP-like in syntactic behavior?

Taken together, these considerations seem to me to render the homophony argument pointless.

Kuno's second argument proceeds from the distributional regularity exemplified by the following examples.

(19) *Space is in the house.
(20) There is space in the house.
(21) The two books are on the table.

(22) *There are the two books on the table.

In other words, certain indefinite noun phrases do not appear in subject position of sentences with locatives, but do appear in the corresponding ES, as was mentioned in a preceding chapter as a counterexample to the there-insertion analysis. Furthermore, definite NP in general do not occur in ES, but do occur in the corresponding S - V - LOC sentences. This, says Kuno, can be accounted for if existential sentences arise by locative extraposition and non-existential sentences do not. Frankly, I find it very difficult to make any sense out of this argument. The only point which I can extract from examples such as (19) - (22) is that there exist ES which have no grammatical sources under a TI analysis, as well as grammatical sentences of the same NP - be - LOC form as the putative sources for ES to which no grammatical ES correspond. In other words, the there-insertion rule is not general; it must sometimes be blocked, and sometimes be obligatory, despite its supposed optionality. This is correct, but it is no evidence for Kuno's position. Any analysis which does not incorporate a there-insertion rule, but claims rather that (19) has a separate deep structure from (20) and (21) a separate deep structure from (22), would predict this, and any analysis which attempts to derive (20) from (19) and (22) from (21) will have it as a counterexample. Of the many conceivable analyses which do not claim the suspect derivations in (19) - (22), the LOC-front Proposal is in fact less viable than many; the putative source (23)
for (20) is scarcely better than (19), the source against which Kuno is arguing.

(23) *In the house is space.

Similarly:

(24) There's powder at Waterville Valley.
(25) *Powder is at Waterville Valley.
(26) *At Waterville Valley is powder.

Far worse examples of this kind arise when the data base is expanded a bit, as will be shown shortly.

One thing which compounds the difficulty of making sense out of this argument is the imprecision with which the term "existential sentence" is used. At the beginning of the section on English (p. 349), one finds the following:

English has at least two ways of representing existential statements:

(43) a. There are two books on the table.
    b. Two books are on the table.

If the argument from the ungrammaticality of *Space is in the room is to make any sense, however, sentences like (43b) must not be classified as existentials, since the argument depends on existentials not being syntactically related to sentences of the form S - V - LOC. If such a relationship obtains, the old problem of sourcelessness exemplified in (19) and (20) immediately reappears. Furthermore, there is no rule in Kuno's system which could accomplish the derivation of (43b) from the Loc - V - S structures which are taken to be the underlying form for existentials. Thus it seems clear that sentences like
(43b) must be taken to be non-existential and derived parallel to (21). The question which then immediately presents itself is the following: Quite apart from questions of the proper derivation of ES, how is (19) to be blocked? The rules generating (43b) would be expected to generate (19) as well. (19) is nonetheless ill-formed and one must ask why; until an answer is forthcoming, ruling it out as a source for (20) merely moves the problem around. In order for the unacceptability of (19) to provide an argument for the adoption of some theory which does not assume it as a source for (20), it must be the case that the correct means of ruling out (19) is to characterize it as ungrammatical in deep structure. At present, however, we know very little about the exact characteristics of sentences like (19), and other alternatives are available; the principle responsible for the unacceptability of (19) could, for instance, be a fact about surface structure. If so, it says nothing about the adequacy of (19) as a source for (20).

The third motivation offered for the LCG-front analysis is a rather complex argument proceeding from certain facts about the interpretation of relative scope in sentences with two quantified noun phrases. As is usual with arguments of this type, the intuitions involved are extremely subtle and subject to wide disagreement. As little is usually accomplished by quarreling with facts, however, I shall assume the correctness of the intuitions given by Kuno and merely evaluate the argument on its logic.
The argument proceeds from sentences such as the following (my numbering):

(27) Every girl likes some candies.

(28) Many people go to the restroom every hour.

Kuno observes that the relative scope of the quantifiers every and some in (27) is unambiguous. The only interpretation which can be given to the sentence is one in which the universal quantifier every is outside the scope of the existential quantifier some.\(^4\) Such a reading can be paraphrased as (29).

(29) It is a fact about every girl that there are some candies which she likes.

There exists no reading of (27) with the opposite order of interpretation of the quantifiers. If there did, it would mean what (30) does.

(30) It is a fact about some candies that every girl likes them.

From these facts, Kuno concludes that "the order of quantifiers in surface sentences in English corresponds more or less to the order of quantifications in the corresponding expressions of predicate calculus." As Kuno notes, something like this principle is found throughout the voluminous literature on quantifier scope interpretation (e.g. Lakoff (1971), Jackendoff (1969, 1972), Kroch (in preparation), Chomsky (1968)). For the present purposes, we can state this Principle of Linear Interpretation of Quantifiers (hereafter PLIQ) informally as follows: When a sentence contains two quantified constituents, the relative
scope of the quantifiers is determined by their linear order in surface structure, the leftmost receiving wide scope.  

Kuno next notes that sentence (28) does not obey this principle, as it is fully ambiguous between a reading giving many wide scope and one giving every wide scope. Paraphrases of the two readings are given as (31) and (32).

(31) It is a fact about many people that they go to the restroom every hour. (Kidney trouble is terrible.)

(32) The restroom is visited hourly by large numbers of people. (No wonder it's always so dirty.)

To account for this, Kuno proposes that sentences like (28) have two possible deep structures which differ in the structural position of the locative adverbial containing the second quantifier. One of these deep structures, which is represented roughly in (33), has the locative within VP, and the other, represented in (34), has the locative as a sister constituent to the sentence.

(33)
An optional lowering rule can apply to (34), moving the superordinate adverbial down into the lower sentence. (34) thus has the two possible surface structures (35) and (36), and (36) is structurally ambiguous between the deep structures (33) and (34).

(35) Every hour, many people go to the restroom.

(36) Many people go to the restroom every hour.

Since sentence (35), which is the direct untransformed surface structure counterpart of the deep structure (34), is unambiguous with respect to quantifier scope, having only the reading (32), the claim is obvious: ambiguous sentences like (36) \( \subseteq (28) \) will be derived from (34) by means of the lowering rule when the quantifier in the adverbial is given wide scope (reading (32)), but will be derived from the alternate deep structure (33) when it receives narrow scope (reading (31)). Thus the FLIQ can be maintained in the face of an apparent counterexample, since the relative scope of the quantifiers in (36) can be read directly off their left-to-right order in the deep structures (33) and (34).

If we now consider the case of ES, we find the following facts about quantifier scope.
(37) There are many people in every class.

(38) In every class, there are many people.

(37) and (38) are unambiguous, having the reading (39), in which every is given wide scope, but not (40), where many has wide scope.

(39) Every class is full of people.

(40) It's a fact about many people that they attend every class.

Thus, ES must come from deep structures similar to (34). (34) has the locative adverbial in initial position; therefore, ES have a sentence-initial locative in deep structure. Q.E.D.

I find this argument totally inadequate. To begin with, note that the analysis accomplishes its objective of extending the PI IQ to cases involving adverbials by means of a particular claim about the deep structures of sentences containing adverbials; therefore it entails that the PI IQ be a fact about deep structures. This is simply not the case. It has been known at least since Chomsky (1965) that the PI IQ can only be formulated as a principle about a quite superficial level of derived structure, probably surface structure. This accounts for the large amount of interest the facts have generated, since they provide solid motivation for derived structure interpretive rules or their notational variants, global constraints linking semantic "deep structure" and surface structure. Not surprisingly, the attempt to apply the PI IQ in deep structure encounters
counterexamples even within the restricted data base of Kuno's analysis. The problem results from the existence of the rule of adverb preposing, which is assumed to derive (38) from (37). This rule, which moves adverbial constituents to the front of the sentence, should apply to a structure like (33), resulting in (34), or something equivalent for the purposes of the FLIQ. Under a theory incorporating a deep structure FLIQ, there should thus be sentences like (35) which have an interpretation of quantifier scope appropriate to a structure like (33), that is, interpretation (31). It is crucial to the whole argument, however, that (35) does not have such an interpretation, since the entire point is to explain the lack of such an interpretation in ES by claiming that they are structurally parallel to (35). This drives Kuno to the following set of principles for interpretation of quantifier scope (pp. 356-7):

(65) Given that command relationships between two quantifiers are symmetrical,

a. Assign symbol $Q_1$ to the first quantifier, and $Q_2$ to the second quantifier, in the deep structure. $Q_1$ and $Q_2$ indicate the order of quantifier interpretation.

b. If the first quantifier is postposed crossing over the second quantifier, retain the same symbols for the dominant reading. . . .

c. If a quantifier with symbol $Q_2$ is preposed over a quantifier with symbol $Q_1$, switch the symbols. . . .

Provision b. guarantees that a particular ordering between two quantifiers which results from adverb preposing, a leftward movement rule, will be interpreted the same as an instance of the same relative ordering involving no movement rule. (35) will thus have no reading like (31). Provision c. guarantees the
other half of the facts, that existentials and other sentences derived from structures like (34) will have their deep structure order of quantifier interpretation undisturbed, since Kuno's adverb lowering rule postpones one quantifier over another.

Unless it is to be metatheoretically specified, a crossing constraint like (65) is incredibly powerful, even compared to a global rule treatment such as Lakoff's (1971). Lakoff's rule compares structure at two distinct levels of derivation, throwing out the derivation if certain conditions on these levels are not met. Kuno's crossing constraint, on the other hand, must keep track of the operation of every movement rule in the language, inspecting to see if it involves crossing of quantifiers, and if so, in which direction. Obviously such a device requires strong independent motivation, and Kuno attempts to provide it with an argument concerning the application of passive in sentences containing indirect objects. As Kuno remarks in a footnote, the argument depends crucially on the assumption that passive consist of two operations, subject postponing and object postponing, with object postponing ordered first.

At best, this ordering of operations is novel and unmotivated. In any theory of movement rules incorporating structural conditions on "landing sites" of moved items, it is incoherent, since subject position will still be filled by the deep structure subject at the time the object-fronting operation is hypothesized to apply. Beyond this, there is no attempt to show that
the crossing constraint is supported by considerations unrelated to the analysis of existentials. In other words, the entire analysis of scope interpretation in terms of a directional crossing constraint seems to have been adopted solely to make the P!IQ provide an argument for the LCC-front analysis of ES. It is thus important to ask if there is an alternate analysis of scope which could derive the facts about quantifier interpretation in adverbials without the need to resort to such a powerful and ad hoc device as the directional crossing constraint. One can then proceed to ask whether such an alternate analysis of quantifiers provides evidence for the LCC-front hypothesis.

Such an alternative can be found rather easily. Note that Kuno's principle for the interpretation of quantifier scope begins, "given that the command relationships between two quantifiers are symmetrical...". If the constituency proposed by Kuno for the locative in (34) is correct, this condition is not fulfilled: the superordinate locative every hour in (34) commands, but is not commanded by, the quantifier many in many people. In (33), on the other hand, this is not the case; the quantifiers command each other. Given this, all the facts about quantifier scope in adverbials can be accounted for by a condition like (41).

(41) In surface structure,

a. If \( Q_1 \) commands but is not commanded by \( Q_2 \), \( Q_2 \) is interpreted within the scope of \( Q_1 \).
b. Otherwise, if $Q_1$ precedes $Q_2$, $Q_2$ is interpreted within the scope of $Q_1$.

(41) is the generalization about quantifier scope which is found in one translation or another throughout the literature. Thus, even on his own assumptions, Kuno's crossing constraint is not needed.

But now notice something else: if (41) rather than the crossing constraint (65) is the correct generalization, linear order is irrelevant to the interpretation of relative scope in structures like (34), where a superordinate adverbial is involved. The adverbial might as easily follow as precede the sentence in deep structure, and scope facts will provide no way of deciding between the alternatives (34) and (42) for the deep structure of (28) in the reading (32).

(42)

```
  S
 /\  /
S  ADV
   \ /  \
many people go to the bathroom every hour
```

It follows from this, of course, that scope facts will also be unable to argue for the presence of an initial locative adverbial in existentials, since the argument depends on existentials being a special case of structure (34).

In fact, there are some rather good reasons for thinking that (42), rather than (34), is the correct deep structure and thus
that the scope facts provide, i.e. anything, a counterargument to the ICC-front analysis.

First, note that an analysis positing (33) and (42) rather than (33) and (34) as alternate deep structures for (28) allows Kuno's adverb lowering rule to be dispensed with. (35) will be derived from (42) by the same adverb preposing rule that is needed in both analyses to derive (38) from (37). It seems likely that adverb preposing applies only to "outside" adverbials such as that in (42), and not to "inside" ones like that in (33), since certain pairs such as the following exist, as pointed out in Chomsky (1965).

\begin{itemize}
  \item[(43)] a. John lived (resided) in England.
  \item b. "In England, John lived (resided).
\end{itemize}

\begin{itemize}
  \item[(44)] a. John died in England.
  \item b. In England, John died.
\end{itemize}

In (43) the adverbial appears to be inside the VP, since it subcategorizes the verb. In (44), however, there is no subcategorization relation between the adverbial and the verb, leading one to hypothesize that it is somewhere "outside". This correlates with the ability of the adverbial to undergo adverb preposing.\footnote{Thus it seems likely that (35) can be derived from (42) but not from (33). It should be noted, however, that the question of whether or not (35) can be derived from both (42) and (33) is irrelevant to the interpretation of quantifier scope in (35), since under this analysis the interpretation of quantifier scope is done at surface structure. Thus, as long}
as the rule of adverb preposing assigns the derived constituent structure (34) to (35), (35) will unambiguously receive an interpretation in which the quantifier in the adverbial has wide scope, regardless of whether the adverbial was inside or outside in deep structure.

There is more to this matter of dispensing with the adverb lowering rule than the mere elimination of a case of unnecessary rule duplication. As far as can be seen at present, there are no well-motivated syntactic rules which have the property of moving lexical material into a more deeply imbedded sentence, and it seems likely that such rules should be excluded meta-theoretically. Such an exclusion was in fact proposed in Chomsky (1965) as the "Insertion Prohibition" and reformulated in Chomsky (1971). The adverb lowering rule is of course such a rule, and it seems to be no accident that the motivation for it collapses under examination.

Another reason for thinking that the adverb lowering rule is an artifact is that structures containing a fronted adverbial generally occur only in topmost sentences, with the usual qualifications concerning some semi-grammatical instances as complements of verbs of saying or thinking. Thus the pair (45), (46).

(45) *That in England John died astonished Bill.

(46) That John died in England astonished Bill.

If sentences with fronted adverbials are regarded as underlying structures, the usually optional rule of adverb lowering must
somehow be made obligatory in embedded contexts, in order to block sentences like (45). If, on the other hand, fronted adverbials arise transformationally from sentence-final adverbials, the problem is to block the adverb preposing transformation in embedded structures. The inapplicability of certain types of transformations in embedded structures is a very general phenomenon, and has been investigated by Lmonds (1970) and Ross (1973), among others. Thus, the ungrammaticality of sentences like (45) is an instance of some sort of general principle under a theory which derives fronted adverbials by adverb preposing, but an anomaly under an adverb lowering theory.

To summarize this section, we have seen that the argument from quantifier scope shows nothing about the syntax of existential sentences, since it presupposes a particular analysis of adverbials for which there is no apparent motivation, and which is in fact less adequate than a rather obvious alternative. As this and the two arguments refuted earlier constitute the only motivation given by Kuno, we must conclude that the LCC-front hypothesis is not established as the correct analysis of ES in English.

5.3 Counterarguments

Having shown in the preceding section that Kuno's argumentation does not establish the LCC-front hypothesis, I shall now consider several classes of counterarguments which seem to me to establish the contrary: that the LCC-front analysis cannot be part of an
Kuno alludes in his paper to two disadvantages of his analysis when compared to the traditional there-insertion analysis. The first of these is that there are simply a great many ES which have no locative constituents.

(47) There hasn't been much done about this.

(48) There's a lot to be said for fricasseed duck gizzards. Hypothesizing a dummy locative in such sentences is absurd, since there is no feeling of ellipsis about them, let alone of an elliptical locative. If such sentences are to have dummy locatives, all sentences might as well have them. There is nothing much to say about this; it is an excellent argument.

The other problem which Kuno mentions is not nearly so crushing. He notices that other verbs besides be can occur in existential structures.

(49) At the defense there ensued a magnificent blood-letting.

If such sentences are to be derived from a deep structure in which the locative adverbial is in sentence-initial position and the subject follows the verb, the selectional restrictions on verbs which can occur in ES, such as ensue, will have to be stated twice; once for existentials and once for every other case. While this is certainly an unpleasant consequence, it is not at all clear that any other analysis can avoid it in one form or another, as Dick Cehrle has pointed out to me. The
class of verbs which can occur in ES has so far resisted all attempts at general characterization, and until such a characterization is found, an analysis like there-insertion which attempts to avoid the duplication of selectional restrictions by deriving sentences such as (49) from an underlying structure with the NP in subject position will have to list the class of verbs occurring in ES in the structural description of the there-insertion rule, or equivalently, mark them with a rule feature. As far as I can see, there is little reason to choose such an alternative in preference to the duplication of selectional restrictions entailed by a model like Kuno's, especially since the question of the exact form in which selectional information is represented is far from settled. Nonetheless, Kuno mentions the possibility that there may be a deeper level of structure underlying the LOC - V - NP form of existentials, in which such sentences have standard word order, so that the similarity of selectional restrictions between ES and other sentences can be captured. A moment's thought can convince one that this alternative is equivalent to the there-insertion analysis with an extra rule added to derive the intermediate LOC - V - NP structure; thus all the problems which inhere to the there-insertion analysis will be present in some form, and nothing will be gained, other than the account of the phonological shape of existential there, which is unconvincing for the reasons given above.

In addition to the counterarguments noticed by Kuno, there are
a rather large number of distributional dissimilarities between
ES and the structures with fronted locatives which, under the
LOC-front analysis, are claimed to underlie them.

One of these, which was pointed out to me many moons ago by Joan
Bresnan, is that sentences of the form LOC - V - IP do not
tolerate at all well the presence of complex auxiliaries.
Compare (3), given again here for convenience, with (50).

(3) On the desk is a pregnant mouse.

(50) a. *On the desk will probably be a pregnant mouse.
b. *In this room used to be a fireplace.
c. *Over there will be a bloody corpse, if you
don't stop bugging me.

In all these cases, the corresponding ES are perfectly grammatical.

(51) a. There will probably be a pregnant mouse on the
desk.
b. There used to be a fireplace in this room.
c. There'll be a bloody corpse over there, if
you don't stop bugging me.

If this restriction is to be accounted for syntactically, it
is evidence for an analysis in which sentences like (3) are
transformationally derived by a rule mentioning T and be as
constant terms. A theory in which such sentences are present in
deep structure would have to account for the restriction by
means of phrase structure or selectional mechanisms, which is
extremely implausible. Similarly, an analysis in which ES are derived from structures corresponding to (3) and (50) will be able to provide no grammatical sources for sentences like (51), and the rule or rules deriving (51) from (50) will have to be capriciously obligatory in such cases.

It is difficult to know how much importance to assign to these facts, however, since there is a certain extralinguistic context in which sentences like (50) can occur. I will not attempt the rather pointless business of concocting a description of this context here, but it seems to have something to do with the description of unreal worlds. Thus, one can imagine a sentence like (52) occurring in the midst of a set of instructions to the actors in a play.

(52) On the table will be a picture of Mary's other husband.

Similarly, a salesman for Ripoff Realty might inform a prospective house-buyer that

(53) Over here could be a dining area.

Facts like these lead one to believe that the badness of (50) and similar efforts might not be a syntactic phenomenon at all, but rather be a matter for investigation in semantic or pragmatic terms. In this event, all the facts adduced here show is that there is some difference in meaning (in the broadest possible sense of the term) between ES and corresponding sentences of the form of (3). Such a conclusion is not of much interest to a theory of syntax.
A more interesting difficulty for the LOC-front analysis is that sentences with fronted locatives are in general restricted to root sentences. Thus:

(54) "John's belief that in the bathtub was a frog was his undoing.

(55) "I would like for on the wall to be a picture of the Queen.

The corresponding ES are perfect in contexts like these, however.

(56) John's belief that there was a frog in the bathtub was his undoing.

(57) I would like for there to be a picture of the Queen on the wall.

Thus, if ES are to be derived from structures with fronted locatives, the rules of there-replacement and locative extraposition must be obligatory in embedded sentences in order to block things like (54) and (55) while generating (56) and (57). If one accepts Emonds' Structure Preserving Hypothesis, this is direct evidence that structures with fronted locatives are derived by means of a late root transformation and that ES are not so derived, thus ruling out a derivation of the latter which incorporates the former as a prior stage. Even if one does not accept the SPH, however, the obligatoriness of locative extraposition and there-replacement in embedded structures is an unfortunate consequence, since rules do not in general have this property, but rather the opposite one of being blocked in embedded contexts, as noted above.
Further counterexamples to the LOC-front hypothesis can be found when a wider range of ES structures are investigated. One such concerns sentences like (58), whose source (59) is ungrammatical.

(58) There were some people drunk at the party.
(59) *At the party were some people drunk.

It is quite easy to construct examples like this, which show a further instance where the rules deriving ES must be marked obligatory in a totally unprincipled way in order to save the analysis.

Perhaps the most convincing arguments against the LOC-front analysis are provided, however, by ES such as (60).

(60) a. There were several people hit by flying tomatoes at the concert.
    b. There were a lot of idiots swimming in the Charles.

Examples like this were used rather extensively in argumentation against the PS Hypothesis in Chapter 3, where it was shown that at least some sentences of this form cannot plausibly be assigned a structural description in which all the material underscored in (60) is analyzed as a complex NP. Huno remarks, but does not demonstrate, that structural descriptions of exactly this sort are necessary for sentences like (60) under his analysis. I think this is true, and if it is, the analysis is in serious trouble, since all the considerations brought to bear against this position during the discussion of the PS Hypothesis will apply to the LOC-front analysis as well. In the following discussion, I will show that the treatment of sentences like (60) provided
by the *there*-insertion analysis and defended in Chapters 3 and 4 -- namely, that in which (60a) is derived from a simplex passive and (60b) from a simplex progressive -- is unavailable under the LOC-front analysis. This in turn can be taken as a demonstration that the analysis will have to treat such sentences either as containing complex NPs to the right of *there were* as Kuno in fact assumes, or as analogues to cleft sentences or PV sentences, since these three alternatives plus the *there*-insertion alternative pretty well exhaust the imaginable structural possibilities for sentences of this type, as argued above. Since it has already been argued that all three non-movement alternatives miss important generalizations, this can be taken as evidence against the LOC-front analysis.

Consider a sentence like (60a). If such a sentence is to be derived from a passive under the LOC-front analysis, it might conceivably come from a deep structure such as that sketched roughly in (61), which represents the minimal alteration of the conventional representation of the deep structure of passives which can conform to the letter of the LOC-front analysis.

(61)

```
S
  /\   /
 ICC NP VP
  /   /  /  /
 at the concert flying tomatoes were hit several people
```

The application of passive, locative extraposition, and locative
replacement to this structure will produce not the desired (61a), however, but rather the ungrammatical (62),

(62) "There several people were hit by flying tomatoes at the concert."

In order to maintain the deep structure (61), then, some special ad hoc rule will have to apply at this point, moving the subject NP several people rightward around were to produce the correct output (60a). This rule bears an astonishing resemblance to there-insertion, and will inherit all the problems which result from the assumption of such a rule under the old analysis. Thus the IOC-front analysis, rather than replacing the there-insertion analysis, would incorporate it in a more complex system which seems only to reduce its explanatory power by making it even less general.

Consider now the eventuality in which the putatively optional rules of locative replacement and locative extrapolation do not apply in the derivation from (61). The result will be (63).

(63) At the concert, several people were hit by flying tomatoes.

This sentence, with a NP in subject position and a fronted adverbial with comma intonation, is not at all parallel to sentences like (64), which represent the result of the failure of the existential rules to apply in simpler cases.

(64) At the concert were several people.

Rather, it looks much more like (65), which is claimed to derive through the application of the existential formation rules,
followed by adverb preposing.

(65) At the concert, there were several people. This is underscored by the fact that the adverbial in (63) can cooccur with there, exactly as in (65).

(66) At the concert, there were several people hit by flying tomatoes.

In (65) this cooccurrence is not a counterargument to the central claim that there arises by replacement of the locative, since the locative constituent is viewed as having been reordered from the position where there shows up by the rules of locative extraposition and adverb preposing. In (63) and (64), however, the locative has remained in its deep structure position on this analysis, so the ability of there to cooccur with it is quite an embarrassment. This is of course another manifestation of the same problem which was shown immediately above to necessitate the reintroduction of a there-insertion-like movement rule to the analysis. There are three conceivable responses to it: another ad hoc rule, the modification of the attempted deep structure (61), and the admission that there is not replacing the locative constituent after all, but rather the subject NP. The first of these is uninteresting, and the last, though undoubtedly correct, vitiates the whole analysis. Let us therefore explore the second for a moment.

What would be needed, clearly, is a deep structure in which the locative is in subject position, rather than to the left of it as in (61), since the difficulty arises in the need for
there simultaneously to arise from a locative and occupy subject position. Consider, then, structure (67) as a source for (60a).

(67)

Here Bresnan's (1972) suggestion that passive sentences are subjectless in deep structure must be adopted. In order to derive (60a) from this structure, one of two things must be assumed. Either NP Preposing (Passive) must apply normally despite the presence of the locative blocking subject position, followed once again by a disguised application of there-insertion in order to get the NP into its eventual resting place to the right of were, or a new rule must be invented which moves the NP directly from its deep structure position to the position following were. These alternatives are equally ad hoc. Still worse, no matter how the movement of the NP is handled, it will be necessary once more to mark the existential formation rules of locative extraposition and locative replacement obligatory in ad hoc fashion in order to prevent the ungrammatical (68).

(68) *At the concert were several people hit by flying tomatoes.

What we find here, in other words, is that the LOC-front Hypothesis becomes untenable as a general account of the syntax of
ES in English if it is the case that some ES must be claimed to have passive structures as a prior stage of their derivations. Furthermore, it is fairly obvious that this argument will have equal force against any analysis in which existential there is regarded as a syntactic reflex of a locative constituent, since the incoherency which has been revealed in the LOC-front Hypothesis rests squarely on the fact that there occupies subject position while locative adverbials do not, making it impossible in principle for the two to form a replacement set.

5.4 Conclusion
In this chapter we have inspected the LOC-front analysis of English ES proposed in Kuno (1971), which was taken as typical of a number of similar proposals under which the occurrence of the formative there in ES is regarded as evidence that all such sentences are syntactically related to sentences of non-ES form containing locatives. It was shown that Kuno's argumentation fails to establish his thesis that existential there is a syntactic remnant of a locative constituent. Finally, several distributional arguments were adduced which show that the LOC-front analysis is not a tenable hypothesis about the syntactic structure of ES in English.

It should be pointed out that this rather hostile review of the LOC-front Hypothesis, and by extension of locative-based analyses of English ES in general, is not intended as an attack on the general notion of a relationship between the concepts of
existence and location which animates proposals like this. If nothing else, the widespread tendency for languages to utilize things resembling locative particles and constructions in the expression of existential statements argues that there may well be such a relationship at some abstract level of conceptual analysis. All that has been shown here is that for English the attempt to capture this insight, if insight it is, as a fact about the syntax of the language is hopelessly simplistic and renders important syntactic generalizations inexplicable. I would be most surprised if this did not turn out to be the case in a great many languages.

The moral to be drawn from this is a simple one: syntax is not a theory of the universe.
FOOTNOTES

CHAPTER 5

1. In this case the argument is at least reinforced by the demonstrable synonymy of the constructions. This is not true in the other instances cited.

2. In the summary of this section of the paper, Æuno paraphrases the argument as follows: "There are existential sentences which are not paraphrasable in the 'S + V + I' pattern, but not vice versa." I find this extremely puzzling; no argument of this form is made, which is fortunate, since it is transparently false (cf. (21), (22) above) and would not make Æuno's point if it were true. Perhaps what Æuno means to say is that all existentials are paraphrasable as I + V + S structures, but some are not paraphrasable as S + V + I structures, making the former a more reasonable deep structure for existentials than the latter. This would be an argument, but it does not appear explicitly in the paper, and it is false anyway, as will be shown later.

3. This includes, by the way, the version of the LOC-front proposal mentioned toward the end of the article, wherein I - V - S existential structures are ultimately derived from structures with normal S - V - L word order.
4. I make the somewhat glib equation between logical and linguistic quantifiers implied by the preceding sentence advisedly, and purely as a matter of convenience.

5. Following Kuno, I have here represented things as though the PI IQ were an absolute rule. Most people would probably prefer to regard it as a principle governing scope preference, considering sentences like (27) at least potentially ambiguous, due to the presence of parallel examples like (i) which are fully ambiguous.

    (i) Some arrows hit every target.

This is of no consequence here.

6. There is a bit of discussion of facts about passives in derived nominalizations. As far as I can see the only result of this is a claim that sentential passives are derived by a single rule, whereas passives in nominals are due to a pair of rules, subject postposing and object preposing. This comes close to contradicting the passive analysis mentioned above, and even if it doesn't, it seems counter-intuitive enough to provide a reason to disbelieve the analysis.

7. Chomsky conceived of this difference as one of VP-internal vs. VP-external adverbs. The analysis under discussion assumes that the "outside" adverbials are not only VP-
external, but S-external as well. The only consideration choosing between these alternatives is that command can only be utilized in the account of quantifier scope if the outside adverbial is outside the S; if it is inside the S, but outside VP, some different notion of superiority must be used, which will have to be capable of differentiating between a subject NP and an adverbial sister adjoined to VP without appealing to linear order. It is interesting to note, by the way, that it is no accident under a meta-theory which restricts structural analyses of transformations to string conditions, as discussed above, that it is the outer, rather than the inner, adverbial which moves. There is no way to write a string condition which will include an inside adverbial and exclude an outside one.

8. The arguments against the quantifier lowering rules which have been proposed by Carden, Lakoff, and others seem to me to be crushing. See Jackendoff (1971), Iasnik (1972), among others.
PART II

WHAT CAN BE DONE ABOUT IT?
PRELIMINARIES

In Part I we have investigated in some detail a representative sample of the analyses of ES currently to be found in the literature on generative grammar and seen that all of them fail to attain adequacy in rather fundamental ways. In particular, we have seen that the there-insertion analysis in its basic unelaborated form necessitates a number of ad hoc and powerful restrictions on the rule of there-insertion if the generation of large numbers of ungrammatical sentences is to be prevented, while locative-based hypotheses like that of Kuno (1971) and base-derived systems like those in Jenkins (1972) and Jenkins (1973) make demonstrably incorrect predictions about derived constituent structure and fail to account for some of the most striking distributional and semantic regularities which characterize ES. Furthermore, it was shown that the extremely interesting proposal of Emonds (1970) to account for the problems inherent in the there-insertion analysis by means of an appeal to the Structure Preserving Hypothesis fails in several ways.

Part II introduces an analysis which provides novel and empirically interesting accounts of some of the properties of ES which have remained mysterious under present theories. Before proceeding, it is necessary to introduce some assumptions and terminology which provide the underpinning of the
argumentation to follow and to lay out in coherent form the major explicanda for which the analysis attempts to account.

1. **Terminology**

As has been noted in a number of connections in the preceding discussion, sentences characterized by the appearance of non-deictic *there* occur in a variety of structural shapes which differ from each other with respect to certain syntactic and semantic properties. In order to facilitate discussion I shall distinguish the structural classes of ES listed below.

a. **Ontological ES**

   Structural definition:

   \[ [S \text{ there} - \text{ AUX} - \text{ be} - \text{ NP}] \]

   Examples:

   There are no ghosts.
   There is only one even prime.
   There is little sense to his remarks.
   There are many people for whom cleverness is all.

b. **Locational ES**

   Structural definition:

   \[ [S \text{ there} - \text{ AUX} - \text{ be} - \text{ NP} - \text{ LOC}] \]

   Examples:

   There is a fly in the mustard.
   There are a lot of pretentious people in Cambridge.
   There is a robin over there.
c. **Periphrastic ES**

Structural definition:

\[
[S \text{ there - AUX - be - NP - } [VP \left\{ \begin{array}{c} \text{V-ing} - X \\ \text{Y-en} - X \\ \text{PRED AP} \end{array} \right\}] - Y]
\]

Examples:

There has been a lot accomplished today.
There are peasants murdered every day.
There is somebody ogling Mary's left navel.
There is a lot going on.
There were many people sick.
There were numbers of people stoned at the party.

d. **Verbal ES**

i. **Inside Verbal ES**

Structural definition:

\[
[S \text{ there - AUX - V - NP - X}], \text{ where } V \neq \text{be}
\]

Examples:

There arose many trivial objections during the meeting.
There ensued a riot immediately upon the reading of the riot act.

ii. **Outside Verbal ES**

Structural definition:

\[
[S \text{ there - AUX - V - X - NP}], \text{ where } V \neq \text{be}
\]

Examples:

There walked into the room a fierce-looking tomcat.
There stood on the table a lamp.
2. **Assumptions**

Of the many factual and theoretical assumptions underlying the discussion to be presented below, two seem worthy of special comment here.

The first such assumption is that all cases of ES arise as a result of the operation of a rightward NP movement rule, i.e., that the classical *there*-insertion analysis is correct in its fundamental features. That some such rule must be assumed in the derivation of at least the periphrastic cases is to my mind amply though indirectly demonstrated by the argumentation in the preceding chapters, where it is shown that the extant alternatives to such an analysis are forced either to wrong predictions or to the reintroduction of the rule in some disguised form, if periphrastic ES are admitted to the realm of data being considered. It is far less clear that a movement analysis is necessitated for other types of ES, however. The essential argumentation against base-derived theories of ES in the previous chapters rests on data from the periphrastics, and if nothing more is said it remains possible that some minimal theory such as Jenkins' PS Hypothesis can serve well enough for the ontological, locational, and inside verbal cases.¹ One can thus imagine a theory in which the periphrastics are derived by a rightward movement rule similar to the classical *there*-insertion rule, while one or all of the classes ontological, locational, and inside verbal are generated
in deep structure with their NP in object position, as in surface structure, and their subject nodes unfilled. All types of ES would then acquire their characteristic there by some later rule which, in the proper syntactic environment, fills empty subject position with the formative there, without regard to whether the position has been vacated by a reordering rule, as in the periphrastics, or was generated empty in deep structure, as in the other types.

It is quite difficult to come up with solid argumentation regarding the choice between a theory like this and one in which all ES are derived by movement, especially in the case of ontologicals, where so little is going on syntactically that evidence for anything is hard to come by. If one assumed a non-movement theory of this type of ES, the problem of non-attested sources which has been mentioned at several points in this thesis would of course be eliminated, exactly as it is in Jenkins' PS Hypothesis, which gives exactly this analysis of the ontological cases. Similarly, the existence of large numbers of locational ES without proper sources under a movement analysis -- e.g. things such as There is space in the room, whose source would have to be *Space is in the room -- would cease to be a problem if a non-movement analysis were arrived at for the locationals. In both these cases, however, alternative solutions to the sourcelessness problem are available, as will be shown later in this chapter, under the analysis in which all ES are derived by a rightward NP movement rule. As this latter
analysis seems to me to make a somewhat stronger and thus more interesting claim about the nature of ES, I have chosen to assume it and proceed from there. The alternative could very well turn out to be correct, but this is of little relevance to the main thrust of the analysis to be presented below.

A second and more general assumption which will be made here is that there exists a rich system of derived structure interpretive rules in language, some of which are ordered at the end of the syntactic cycle, and some of which apply to surface structures. It will be assumed that no other orderings of derived structure interpretive rules are possible.

3. Explicanda

Let us then assume a NP movement rule such as (1) for ES, which I take to be the minimal formulation of the classical there-insertion rule, ignoring for the moment the existence of verbal ES.

(1) There-insertion

\[
\begin{array}{c}
SD: X NP Y \text{ be } Z \\
1 \ 2 \ 3 \ 4 \ 5 \\
SC: 1 \text{ there } 3 \ 4 \ 2 \ 5
\end{array}
\]

From one viewpoint, the problem of constructing an account of ES can be seen as that of embedding the above rule in a syntactic and semantic theory which is sufficiently rich to explain the properties of ES without loading the rule with the usual plethora of ad hoc conditions. Before we begin constructing such a theory, it would probably be useful to list in one
place the more outstanding properties of ES which the theory, in conjunction with rule (1), should explain. At least the following things seem relevant.

a. The predicate restriction. It will be recalled that "predicate restriction" is my term for whatever factor or factors prevent the there-insertion rule from applying in sentences such as (2) and (3) but permit its application in (4), giving the results in (5) - (7).

(2) Many people are intelligent.
(3) Many people are socialists.
(4) Many people are sick.
(5) *There are many people intelligent.
(6) *There are many people socialists.
(7) There are many people sick.

An adequate analysis of ES should provide some characterization of the difference between adjectives which class like sick and those which class like intelligent. It should furthermore provide some reason why all NP predicates class with intelligent. Finally, it should specify why the difference between these classes of predicates should cause them to behave as they do with respect to the subject movement rule.

b. The leftmost be restriction. It is generally assumed that some condition must be placed on rule (1) to guarantee that the leftmost occurrence of be in the sentence under analysis by the rule is chosen to fulfill term 4 of the
structural description. Otherwise one would expect the ungrammatical

(8) *There was being a house built

to result from the application of the rule to the source sentence (9).

(9) A house was being built.

As was remarked in chapter 1, such a condition would be a particularly unfortunate one for the theory of grammar, since it cannot be stated as a Boolean condition on analyzability; if spelled out explicitly it would require the use of quantification. As transformational conditions of this power are not well attested, it would be desirable if an analysis of ES could be constructed in which the leftmost be condition could be avoided.

c. Semi-modals. The inability of the so-called semi-modal be which occurs in the expressions underlined in (10) and (11) to serve as the be fulfilling term 4 of (1) should be explained.

(10) a. John is to speak at the banquet.
    b. *There is a man to speak at the banquet

(11) a. John is going to leave at noon.
    b. *There is a man going to leave at noon.

d. Verb selection. Some account should be provided of the factors governing the selection of the class of verbs which can substitute for be in the fourth term of (1) in
e. **Sourcelessness.** Some way must be found of preventing the ungrammatical sources of ontologicals from reaching the surface. In other words, the effect of an obligatoriness condition on rule (1) must be obtained in cases like the following.

(12) a. *A mosquito that can give you jungle rot is.*

b. There is a mosquito that can give you jungle rot.

Similarly, the sourcelessness of locational ES like (13) is in need of explanation.

(13) There are holes in the wood.

f. **The definiteness restriction.** As hinted in chapter 1, the definiteness restriction is really quite a complicated bag of tricks. One would like answers to at least the following questions about it: What is the nature of the notion of definiteness which most adequately characterizes the data? Is it morphological, syntactic, or semantic? What generalizations are available about the classes of apparent exceptions referred to briefly in Chapter 1? Can they be explained? Finally, why on earth should exactly this restriction be placed on the NP in ES, out of all the possible statements about NPs that one can imagine? Is it a brute syntactic fact to be characterized by nothing more interesting than a restriction on the *there*-insertion rule, or is there something more
meaningful to be said about it?

With these problems in mind, let us try to construct a theory of ES which will provide explanations for some of them.
1. The outside verbals are another case which seems to require movement, since the surface structure position of the NP is one in which noun phrases are not generated by well-motivated phrase structure rules. There are reasons to believe, however, that the movement rule involved in the generation of outside verbal ES is distinct from that which derives the periphrastics. This will be discussed at a later point. For the moment I shall ignore the existence of the outside verbal cases.
CHAPTER 6

ONTLOGICAL, LOCATIONAL, AND PERIPHRASTIC ES

In this chapter I attempt to develop a theory which accounts in an insightful way for a number of semantic and syntactic peculiarities of those classes of ES which crucially involve the occurrence of the verb be. The verbal class, which poses problems of quite a different sort and about which I have far less to say, will be dealt with in chapter 7. Accordingly, throughout this chapter the term ES will be taken to comprise only the ontologicals, locationals, and periphrastics.

6.1 What Do Existential Sentences Mean?

6.1.1 The Nature of the Question

The term "existential sentence" is used in linguistic investigations with a certain vagueness both in import and extension. In practice, most people seem to use it in much the sense which I defined in the introduction to this thesis, where the term is taken to signify all and only those sentences of English in which there is an occurrence of unstressed, non-deictic there. This, obviously, is a syntactic definition. It is clear, however, that the term is intended at root to have a semantic significance. Sometimes this is made explicit, as in Kuno (1971), where we find (p. 333):

The term "existential sentence will be used to refer to sentences such as:
(1) a. There are two books on the table.
b. Two books are on the table.
which state the existence of certain indefinite
objects in some place.

Similarly, Jenkins (1972) mentions in a footnote a suggestion
of Chomsky to the effect that ES and cleft sentences are
similar in both syntactic and logical form, the latter sentences
being introduced by a focus operator it and the former by the
existential operator there. The item there is thus viewed as
having a uniform interpretation as a marker of existential
quantification, an analogue of the operator ∃ in the predicate
calculus. A similar understanding that "existential sentences"
are a semantic class is expressed or implied in most of the
work I know on the subject -- cf. Lyons (1967), Clark (1970),
Kimbball (1973), etc. -- and indeed it is difficult to conceive
that a description like "existential" should ever have been
coined for ES in the absence of some notion that such sentences
consistently express propositions concerning existence.

Despite the pervasiveness of this conception of a relationship
between non-deictic there and the expression of existence, I
know of no attempt in the linguistic literature to show that
it does in fact provide a useful characterization of the meaning
of ES. In my opinion, this is work which badly needs doing,
since some rather difficult questions are buried in the
assumption of this relationship.
6.1.1.1 The Extension Problem

To begin with, there is an appearance of disagreement among linguists as to just what class of sentences the semantic notion "existential" is supposed to characterize. I shall refer to this as the "extension problem". What I take to be the majority view is exemplified by Kimball (1973), who says that the there-insertion rule derives existential sentences from "corresponding sentences where no existential there is present," and that the rule "states an obvious generalization obtaining between existential sentences and corresponding nonexistential sentences of the same meaning." (p. 262).¹

In other words, a sentence like (1) is existential, but its source (2) is not.

(1) There is a man in the room.
(2) A man is in the room.

Kuno (1971), on the other hand, gives a definition of existential sentences which includes both (1) and (2): cf. the quotation given on the first page of this chapter. This second view is entailed if one accepts the truth of a very literal reading of the so-called Katz-Postal Hypothesis (Katz and Postal, 1964), which claims that all aspects of meaning are determined in deep structure. The entailment is obvious: Existentiality is a semantic notion, that is, a term for some aspect of the meaning of sentences; therefore fully synonymous sentences must be equivalent with respect to existentiality. ES are existential. On the there-insertion analysis, ES like (1) are derived from sources shared by
sentences of the form of (2). (1) and (2) must therefore be fully synonymous, by the Katz-Postal Hypothesis. Therefore, both (1) and (2) must be equivalent with respect to the characterization "existential." Therefore, (1) and (2) are both existential.

As noted in Chapter 5, it appears from a careful reading of the argumentation in Kuno's article that this definition of existential sentence is not being adhered to in practice. I think there is a very good reason for this, as I shall now attempt to show.

In the case of examples like (1) and (2), it is not easy to see that very much is at issue in this question of the proper extension of the semantic characterization "existential." Who can say, really, whether sentences like (2) are to be regarded as expressing existential propositions or not? In particular, how is a predications of location, as in (2), distinct from a statement that the entity in question "exists" in a place? One might think that the attempt to distinguish the concepts becomes incoherent in such cases. There are other types of there-sentence, however, and I think that any linguist interested in this topic would agree that if "existential" is to be an interesting and useful concept in the attempt to learn something about ES, it must at least suitably characterize all types of sentence in which "existential there" is found, whether or not it also characterizes other types of
sentence related to ES by syntactic rules. If this is granted, we are forced to deal with examples such as (3) and (4).

(3) A man was struck by an automobile.

(4) There was a man struck by an automobile.

Sentence (4), an existential, is claimed to derive from the structure underlying (3). Is (4) then also to be regarded as existential? Presumably so, if both (1) and (2) are. Yet it is very hard to see that (3) is an existential statement in anything like the sense that a more standard example such as (5) is.

(5) There are laws against sanity in this state.

If the characterization "existential" is expanded far enough to include (3), it apparently means little more than "sentence containing an indefinite NP." If this is the case, sentences like (6) - (8) are also existential, despite the fact that they are neither ES nor appropriate sources for ES, and we are forced to conclude that the semantic notion "existential" is related to non-deictic there hardly more closely than the notion "sentence" is.

(6) A man just fell down the stairs.

(7) Several people died.

(8) Someone seems to have smoked up all the dope.

Thus we see that the attempt to identify "existential" as a semantic characterization of the set of sentences comprising ES and their sources leads directly to the conclusion that it is in fact a characterization of nothing. Apparently then, we must embrace the view of Kimball that only ES are existential,
not their sources under the TI analysis, if the term is not to become meaningless.

In the above discussion, we have been considering the question of whether the characterization "existential" should be reserved for ES or expanded to include a wider class of sentences, in particular, those which are claimed to be related to ES through the application of the there-insertion rule. There is a second half to the extension problem, as the alert reader will no doubt be protesting by this point: one must ask if even the whole class of ES can be said to be characterized by the semantic notion existential. If it can, fine; we can proceed with this characterization of a common semantic property of ES in hand and see if we can use it to provide any fresh insight into the many peculiarities of ES structures. If not, then "existential sentence" in the sense in which it is usually used in linguistics is a misnomer; it should be excised from the terminology, and some more revealing description invented.

There can certainly be little objection to the use of the term existential to describe the meaning of ontological ES, such as those in (9) - (11).

(9) There is a Santa Claus.
(10) There are many reasons for believing this.
(11) There are no good introductions to linguistics.

Such sentences, as their name implies, express statements
about ontology; they tell us something about the ingredients list of the world, and thus concern existence if anything does. Locational ES, on the other hand, can be said to make statements about the existence of some entity, but it is not entirely clear whether one is saying anything in doing so; it appears equally possible at first glance to describe them as propositions about location, as pointed out above.

Periphrastic ES are a worse problem. As an example, consider once more the pair of sentences (3), (4). It was pointed out above that the source sentence (3) can hardly be thought of as expressing an existential statement without voiding the term of all perceptible meaning. What was not pointed out, however, is that it is difficult not to believe the same thing about the ES (4). This sentence appears to be a naked description of an event, like (3). If it expresses an existential statement, what is being claimed to exist? The only possibility would seem to be a man. But is there any coherent sense in which a man is being claimed to exist in this sentence but not in (3)? The answer is not obvious.

In short, it is far from clear that it is revealing or even possible to distinguish ES as a class by claiming that they are to be characterized semantically as existential expressions.

6.1.1.2 The Intension Problem

In the preceding section we have raised the problem of the
extensional relation between the syntactic class of ES and
the semantic class of sentences expressing existential state-
ments, i.e. the question of whether the expression of exist-
tential statements is a characteristic property of ES. A
serious consideration of this problem is hampered by the
existence of a second closely related one: the term "existen-
tial statement," whose applicability to ES we want to investi-
gate, is overly vague. What, after all, does it mean for
a proposition to be an existential statement; how do we know
one when we meet it? Part of the unclarity proceeds from the
existence of two major, rather disparate senses of the term
"exist." One of these senses is that which attaches to the
lexical item exist in sentences like (13), (14).

(13) The Beethoven Opus 205 does not exist.

(14) Did Dracula really exist?

Russell (1905a) characterizes this meaning as follows:

...the meaning which can be predicated of an
individual: the meaning in which we inquire
whether God exists, in which we affirm that
Socrates existed, and deny that Hamlet existed.

The other sense is that found in logic. For our purposes, we
can follow Russell in interpreting the logical exist as a
property of classes, a class being said to exist if and only
if it has at least one member. This sense of exist, unlike
the first sense, is never a property of individuals.

It seems fairly clear that both these senses -- call them
exist I and exist C respectively -- have been assumed in one or another investigation of ES. The many attempts to relate the "exist" of ES to a notion of location clearly presuppose the appropriateness of exist I. Location is a predication on individuals, and it would be hard to make any sense out of an attempt to relate it to the notion of existence, if the latter were meant in the sense exist C. The quotation from Huno's article given at the beginning of this chapter typifies this orientation, showing quite clearly the assumption of exist I as the relevant sense of exist for the study of ES.

On the other hand, the remark in Jenkins (1972) to the effect that there is to be regarded as an existential operator is equally clearly a statement that the correct interpretation of "exist" for these purposes is exist C.

6.1.1.3 Summary of the Problem
To summarize our position at this point, we have seen that in order to investigate the semantics of ES in a serious way we must come to terms, one way or the other, with the contention that such sentences are characterized semantically as expressions of statements about existence. To do this, we must answer two questions: what is meant by "statement about existence" and whether or not it is true that all and only ES are properly characterized as expressing such statements. Obviously, these questions are closely interrelated, and to some degree need to be solved simultaneously. Nonetheless,
one must start somewhere. My method will be to assume some basic, pretheoretical notion of "exist" which characterizes at least ontological ES and does not characterize sentences like (3), (6), (7), and (8), and proceed to investigate the extension problem. Afterward I shall consider the nature of the sense of "exist" which emerges from that investigation.

6.1.2 "Exist" as a Characteristic Reading of ES

The task of this section is to construct a demonstration that an existence reading is characteristic of ES. In order to attempt to do this, let us first consider the three sentences below, which will serve as concrete examples of the three types of ES (ontological, locational, and periphrastic) to which we are for the present restricting our attention.

(15) There are no six-legged cats.
(16) There was a man in the garden.
(17) There was a ship sunk.

I shall, as hinted above, take it as a given that ontological ES like (15) express existential statements. The problem, then, is sentences like (16) and (17); how do we go about demonstrating that these sentences are existential in some sense in which similar sentences like (18), (19) are not?

(18) A man was in the garden.
(19) A ship was sunk.

The demonstration, it seems to me, is best given by an argument from the interaction of nonfactive embeddings and NP-
preposing. Consider the following examples, where sentences similar to (19), (19) are embedded beneath the verb believe.

(20)  a. John believed three men to have been in the garden.

b. John believed several ships to have been sunk in the storm.

There-insertion can apply in the embedded sentences in (20), giving:

(21)  a. John believed there to have been three men in the garden.

b. John believed there to have been several ships sunk in the storm.

As has been mentioned in previous discussions, the rule of NP-preposing can apply to the structures reflected in (21), moving there into subject position of the matrix clause, producing (22). (The agent John has been eliminated in order to obtain felicitous examples.)

(22)  a. There were believed to have been three men in the garden.

b. There were believed to have been several ships sunk in the storm.

Notice, however, that another derivation is possible from the structures underlying sentences (22). Let us represent the underlying structures of these sentences roughly as (23).
(23)

\[
\begin{array}{c}
S \\
NP \\
\quad \text{PRO} \\
\quad \text{V} \\
\quad \text{be believed} \\
\quad \text{three men to have been in the garden} \\
\quad \text{several ships to have been sunk in the storm}
\end{array}
\]

There-insertion is an optional rule; we can choose not to apply it in the embedded sentence in (23). This will result in the sentences (24) through the obligatory application of NP-preposing.

(24) a. Three men were believed to have been in the garden.
b. Several ships were believed to have been sunk in the storm.

From (24) the application of there-insertion can derive (25).

(25) a. There were three men believed to have been in the garden.
b. There were several ships believed to have been sunk in the storm.

These facts are well known and provide the basis for one of the classic arguments for the syntactic cycle.\(^2\)

We see, then, that the deep structure schematized in (23) can result in the variety of surface structures given as (22), (24), and (25), due to the optionality and cyclicity of
the *there*-insertion rule. It is equally obvious, however, that these sentences are not all fully synonymous. The sentences in (22) and (24) are parallel to each other and to (20)-(21) in an important respect: in conformity to a general principle about the interpretation of sentences containing non-factive complement-taking verbs (see Kiparsky and Kiparsky (1968), Karttunen (1971)), the truth of the sentences is independent of the truth of the complement sentences embedded within them. Thus for (20)-(22) and (24) to be true, it is not necessary that \{a man have been \} in the garden or that \{a ship have been \} sunk in the storm. It is necessary only that John have believed such a thing, or in the cases (22) and (24), that such a thing have been believed by someone. This is of course exactly what one would expect if this aspect of the readings of the above sentences is determined in deep structure, since all of them are parallel in form at that point, with the embedded sentence under the scope of *believe*.

Sentences (25) differ in their truth conditions from those just discussed, however. In order for these sentences to be true, it is necessary that there have existed three men or several ships, as well as that the embedded proposition he believed about them. It is not necessary, however, that those men or ships were in fact in the garden or lost, respectively.

How are we to account for this? Suppose that we claim that ES as a class share the feature of semantic representation
which I have referred to a number of times above as existentiality; that is, that they all make a claim about the existence of the entity denoted by the reordered subject NP. We note immediately that such a generalization, if real, must be accounted for at surface structure or at the end of the cycle, since it is not the case at any earlier point in derivations that ES form a class of syntactically similar structures to which a rule assigning this interpretation could apply in a uniform way. Continuing with this supposition, let us propose a rule of semantic interpretation which will assign the existential reading to sentences containing there. A first approximation to such a rule can be given as (26).

\[(26) \quad \text{there} \; \text{AUX} \; \text{be} \; \text{NP} \; X \quad \text{is interpreted:} \]
\[\text{EXIST (NP) such that P (NP), where P is a predicate and P is the reading of X.}\]

Let us further suppose that this rule applies at the end of the cycle.

A rule of interpretation like (26), when applied to the sentences under consideration here, accounts immediately for the difference in truth conditions between (25) and the other examples. To see this, let us consider the cases. Example (24), obviously, is irrelevant, as it does not involve applications of there-insertion or the resultant interpretive rule (26), and maintains truth conditions consistent with its deep structure form, which is what would be expected under conventional assumptions. Examples (22) and (25), then, are the ones to
be accounted for. In (22), the application of the interpretive rule (26) will occur at the end of the lower cycle, following an application of there-insertion and will add to the semantic representation of the embedded sentence the assertion EXIST (NP), where NP is "several ships" or "three men". This is shown schematically in (27).

\[
(27) \quad \triangle \quad \text{were believed} \left[ \text{there to have been several ships sunk} \right] \rightarrow \begin{array}{c}
\text{three men in the} \\
garden
\end{array} \\
\begin{array}{c}
\text{EXIST} \\
\left\{ \text{several ships} \right\} \\
\left\{ \text{three men} \right\}
\end{array}
\]

Thus the creation of the EXIST (NP) reading takes place within the embedded sentence in the complement of believe. On the next cycle, the item there is moved into subject position in the higher clause. The interpretive rule (26), though cyclic, cannot reapply in the higher clause, since its structural description is not met. As a result, the only existential assertion present in (22) will be that created in the lower sentence. As this sentence is within the scope of believe, its truth is irrelevant to the truth of the whole sentence. Therefore, the truth of the existential assertion will be irrelevant as well. Sentence (25), on the other hand, arises from the application of there-insertion and rule (26) on the matrix cycle, following the insertion by the rule of NP preposing of the underlying subject of the embedded S into the empty subject position of the top S. This is represented in (28), (29).
Here the existential assertion is outside the scope of believe; its truth value is thus no longer independent of the truth of the sentence as a whole. The sentence now asserts EXIST several ships with the characteristics mentioned, and if such entities do not exist, it is false.

In short, what this derivation accomplishes is the following; it was observed that sentences (22) and (25) differ in that the latter, but not the former, represents a commitment to the existence of the entities denoted by the NP three men/ several ships, despite the fact that the sentences are derived from identical deep structures. It was then shown that this observation is explicable on the assumption that the there sentences in (22) and (25) make assertions of existence, exactly as do less complex instances like (15). Since the exist interpretation cannot be assigned to there-structures in deep structure due to their non-uniformity in shape at that point, it must be done either cyclically or at surface structure. If the cyclic alternative is chosen, the difference between (22) and (25) with respect to truth conditions can be accounted for as the result of the application of the interpretive rule assigning the exist reading either inside or outside the complement of believe.
6.1.3 The Meaning of "Exist"

So we see that there is merit to the idea that sentences characterized by the appearance of "existential" there are consistently interpreted as existence statements in some sense in which other sentences are not. Put another way, we see that it makes some sense to say that there means something, and that a rule similar to (26) must therefore be a part of the grammar of English. Before we go on to inspect some consequences of this finding, it would be constructive to devote some attention to the question of what sense of "exist" and "existential statement" is appropriate in this connection. The enterprise can be looked at as the attempt to define the operator EXIST which appears in (26).

At an earlier point in this discussion, two distinct and rather well-defined usages of the term "exist" were mentioned. One of these, it will be recalled, is found in expressions like (30), and is a property of individuals meaning something like "to have reality."

(30) The Northwest Passage never existed.

The other is a property of classes and can be paraphrased as "is instantiated, has at least one member." One might ask whether observing this distinction can lead us to an insight about the nature of the sense of "exist" which is appropriate to the characterization of the meaning of ES. I think it can. Consider the following sentence.
(31) Many unicorns exist.

If we abstract from irrelevant questions of plausibility, sentence (31) is ambiguous between the readings (32) and (33).

(32) It is a fact about many unicorns that they exist.
(Many others, however, for instance unicorn_496 and unicorn_489, are only characters in nursery stories.)

(33) The universe has a lot of unicorns in it.
Reading (32) seems quite clearly to be a predication of the property of existence on a certain number (many) of individual unicorns; it picks out of the set of unicorns in the universe some number of them and claims that they are individually real. This is, then, an instance of exist I, parallel to sentence (30). The second reading of (31), as paraphrased in (33), means by contrast only that the number of unicorns in the universe is large, or, stated otherwise, that the class of entities called unicorns has many members. This is an instance of exist C.

Consider now the corresponding ES (34).

(34) There are many unicorns.

This sentence is unambiguous, meaning only (33). Apparently, then, the lexical item exist is ambiguous between the readings exist I and exist C, but the operator EXIST introduced by rule (26) means only the latter.

Other examples which support the contention that there, as
opposed to exist, is interpreted only as exist C are fairly
easy to find. Consider for example the contrast among the
following three sentences.

(35) There will always be an England.
(36) An England will always exist.
(37) England will always exist.

Sentence (37) means only that that particular spot of land
some miles off the French coast, the place where English is
spoken and which is ruled by the British Crown, is not about
to disappear. This is the reading exist I. (35) and (36),
on the other hand, mean only that it will always be a property
of the world that it will contain some entity with the prop-
eties essential for it to be called "England," a place where,
e.g., people drink tea and snobbery is considered a fine art.
This is clearly the exist C reading; it states that the class
of "Englands" will always be attested.

This example also shows a dependency between determiner struc-
ture and the two senses of exist. There will be a rather
detailed discussion of this matter in section 6.2.

If we accept exist C as the sense which is relevant to the
description of the existential there, we can define the term
EXIST in rule (26) as follows:

(38) EXIST is a predicate on classes such that
EXIST C is true if the class C has at least
one member.
Because EXIST is said to be a predicate, EXIST C is a proposition and has truth value. Thus sentences like (39) are assertions and are either true or false.

(39) There are five-legged spiders.

Utilizing the above definition of the notion EXIST which was employed in rule (26), let us refine (26) to the following statement:

(40) The E Rule (preliminary)  

there AUX (have-en) be NP X is interpreted;  
the class C denoted by NP has at least one member c such that P(c) is true, where P is a predicate and P is the reading of X.

If we apply this rule to a selection of examples of ontological, locational, and periphrastic ES, we find that it gives intuitively satisfying characterizations of their meanings.

To take an ontological case first, consider example (41).

(41) There are people who respect honesty.

Applied to this sentence, the E rule (40) will derive the reading (42).

(42) The class of people who respect honesty has at least one member.

Since the variable X is null in (41), the rule will generate no predication on a member of the class "people who respect honesty." It is important to note that the rule will not
be able to generate reading (43), by taking "people" to be the class and "respect honesty" to be a predication on at least one member of that class.

(43) The class of people has at least one member p such that p respects honesty.

This is the case because (40) is written in such a way that it "sees" only NP when looking for a class description. If relative clause-containing NP like people who respect honesty are to be analyzed structurally as $[NP[NP][S]]$, the inner, head, NP cannot be taken by the rule to name the relevant class because of the A over A principle (Chomsky, 1965). If the head of a relative clause is regarded as an instance of some category other than NP, say $\overline{N}$, it will not be selected by the rule because it does not meet the structural specification NP. Thus, in either case only the NP people who respect honesty can be taken to denote the class. What this allows us to do is distinguish between characterizing and non-characterizing predication in sentences like the following one, which we first met in Chapter 3.

(44) There were people studying Gothic at the party. As noted earlier, this sentence is ambiguous between a sense where studying Gothic is taken as a characterization of the people and one where it is claimed they were engaging in the activity of studying Gothic at the party. In Chapter 3, it was assumed that this ambiguity is structural, the former reading proceeding from a structure in which the VP studying Gothic is inside the NP headed by people, and the latter from
one in which it is outside the NP, having been isolated there by the application of there-insertion. The statement of rule (40) treats the difference in interpretation resulting from this structural difference as a distinction between predication which contributes to the definition of a class and that which does not. Another example where this distinction can be seen clearly is the following.

(45) In Duffy's Bar, there was a man shot by the police. This sentence has a reading which is similar to that of (46).

(46) In Duffy's Bar, there sat a man shot by the police. It has another reading, however, which is similar to that of (47).

(47) In Duffy's Bar, a man was shot by the police. It has been claimed previously in this study that ambiguities of this sort are structural, the reading similar to (46) attaching to a structural description of (45) in which a man shot by the police is a NP, while the reading similar to (47) is taken from the periphrastic structural alternative for (45), in which the passive VP in the coda is outside the NP. Rule (40) incorporates a way of saying that the structures and interpretations correlate in such a way: in the periphrastic reading, shot by the police is not incorporated in the characterization of the class; on the other, locational, reading, it is.

If we apply (40) to a periphrastic ES such as (48), we obtain (49).
(48) There were people studying Gothic haunting the mead factory.

(49) The class of people studying Gothic has at least one member g such that g was haunting the mead factory.

Finally, the application of (40) to the locational (50) yields (51).

(50) There were collicky cows on the cobblestones.

(51) The class of collicky cows had at least one member c such that c was on the cobblestones.

6.1.4 Summary of 6.1

In the preceding section, we set out to answer the question "What do ES mean?" in two ways: whether the various structural types of ES do in fact share a unique feature of semantic interpretation which can revealingly be called "existential," and what, with a tolerable degree of exactness, this feature actually is. We have seen that the assumption that such a shared feature of meaning exists has allowed us to account for some facts about truth conditions in sentences involving the occurrence of ES as complements, and have come to some conclusions about the proper characterization of the notion "exist" which is relevant to the interpretation of ES, culminating in the preliminary formulation of a rule of interpretation for ES.
In the next section of this chapter, the essential correctness of this semantic treatment of ES will be assumed, and the system will be exploited in an attempt to construct explanations of some of the more obvious of the many syntactic and semantic peculiarities of ES.

Before concluding this section, however, I should probably say something about the plausibility of regarding the exist reading of ES structures as a fact about derived structure, or otherwise stated, as a fact about there rather than about be. The usual assumption is of course exactly the opposite, that there is a sense of be meaning exist in deep structure, and that there is a syntactic wart, a surface structure epi-phenomenon which does nothing one way or the other about the exist meaning which survives from the deep structure of ES. It is clear, however, that if ES are to be claimed to be characterized as a class by their possession of this exist reading, it must be regarded as a fact about a more superficial level of structure, since ES can be constructed around practically every be in the language -- the be of locational sentences like John is in the room, the passive be, the progressive be, and the copula in sentences such as John is sick, none of which can be coherently claimed to mean exist in the absence of there. If one wanted to claim that all these various types of ES got their exist reading in deep structure, one would presumably have to claim that passive, progressive, copular, and locational sentences all are ambiguous
with respect to the statement of existential propositions, with the existential reading surviving only in the cases where there-insertion has chosen to apply, a conclusion which I think it is safe to take as the last statement in a reductio.

Interestingly enough, there are some very few cases of the appearance in surface structure of instances of be which seem to mean exist despite the absence of there. Consider for instance such examples as the following.

(52) Carthage is no more.
(53) To be or not to be?
(54) All that is, was, and ever shall be....
(55) That can't be.
(56) Don't be that way!

Several things can be said about the above cases. First, they are very nearly exhaustive; I know of no other instances of be meaning exist without an accompanying there. Second, all of them except the last two are very strange, archaic sounding English -- two are in fact quotations from 17th century sources. Thus the cases are marginal at best. More importantly, however, none of them really mean exist in the class predication sense found in ES. (52) means that the particular physical, geographical, and/or social entity called Carthage no longer exists, analogous to (37) above: England will always exist. Likewise, (53) is a deliberation by a would-be suicide -- certainly a predication on an individual. (54)
is very hard to intuit about, but I think it is also the exist
I sense, meaning something like "all objects which do, did,
or will have real existence." Finally, (55) does not mean
exist in any sense, but rather "be true," as was pointed out
to me by R.W. Fiengo. Thus, if one claimed to have found a
second even prime number and received (55) as a reply to the
news, that would be taken to refer not to the putative number,
but rather to the proposition that one had been found.
Similarly, (56) clearly means "behave."

Thus, it seems that there is no counterevidence to the claim
that be by itself never means exist C.

6.2 Solutions to Things
In this section I shall concern myself with the task of finding
reasonable accounts of some of the classical puzzles connected
with the analysis of existential sentences. The concepts
introduced in the last section will play a crucial role in
this endeavor, and will in the process be refined and developed.

6.2.1 Approach
At this point we have motivated two pieces of theoretical
machinery in our investigation of the nature of there, the
there-insertion rule, given in maximally uncomplicated form
as (1) in Chapter 5 and repeated here as (57), and the E rule
for the interpretation of there which was given in preliminary
form as (40) in the first section of this chapter, and is
repeated here as (58).

(57) **There**-insertion

SD: \[ X \text{ NP } Y \text{ be } ? \]

SC: \[ 1 \text{ there } 3 \text{ 4 } 2 \ 5 \]

(58) **E** rule

\text{there AUX (have-en) be NP X} is interpreted:
the class C denoted by NP has at least one member
such that P(c) is true, where P is a predicate
and P is the reading of X.

From one viewpoint, the task ahead of us in this section is
to embed the above rules in a theory sufficiently rich that
the most interesting peculiarities of existential sentences
can be accounted for without ad hoc complications in the rules.

In the following discussion, I consider one by one the explicanda
listed in Chapter 5 and attempt to show that independently
necessary statements of the grammar of English or of universal
grammar can be shown to interact with the rules given above
in such a way that much of the large residue of unexplained
characteristics of ES can be accounted for without need to
complicate and degeneralize the statements of the rules. To
the extent that this can be done, we are justified in claiming
that the facts in question are, in an honest sense of the
word, explained.

Before proceeding with this task, a couple of observations
about the form of the rules (57) and (58) would be in order,
however.
First, it is to be noted that there is no special reason for believing that (57) is in fact to be stated in the way I have given it -- as a single rule which both moves the NP rightward and inserts there. It is at least as likely that it should be thought of as a pair of rules, one accomplishing the movement, and the other applying at some later point to insert there in subject position under uniform conditions. The latter rule could be stated as simply as (59).

(59) SD: X t AUX Y SC: 2 \rightarrow \text{there} 1 2 3 4

If this rule is cyclic, as it would have to be under what I have argued elsewhere in this thesis to be the optimal theory of rule application, it will insert there in exactly the right places. This is the case because there are only two rules of English besides there-insertion which move noun phrases out of subject position, thus creating the occurrence of t (trace) which is necessary for rule (59) to apply. One of these rules is NP preposing, but it cannot apply to subject NP until the next higher cycle is reached. Thus, at the time when (59) applies, the rule will not have had a chance to apply and create trace in subject position. The other rule besides there-insertion which could move subject NP away and provide environment for (59) is NP postposing, the "first half of passive." This case is slightly more problematical. If nothing more is said, we would expect to derive (60) from the application of (59) to the output of NP postposing.

(60) *There was read a story by the teacher.
Some work by Robert Fiengo (in Fiengo, 1974) suggests a plausible solution to this difficulty. Fiengo claims that passive sentences are interpreted at surface structure as predications of a property on their derived subject. If this is the case, (60) will be uninterpretable, since the interpretation rule for passives will try to predicate the property "read a story by the teacher" (probably meaningless as a property anyway) of there, which is non-referential.

Given this, we can rewrite (57) as the pair of rules (61), (62).

(61) NP Downgrading

\[
\begin{array}{cccccc}
\text{SD: } & X & \text{ NF } & Y & \text{ be } & 2 \\
\text{SC: } & 1 & 2 & 3 & 4 & 5 \\
\end{array}
\]

(62) Trace Removal

\[
\begin{array}{cccccc}
\text{SD: } & X & t & \text{ AUX } & Y & \\
\text{SC: } & 2 & \rightarrow & \text{there} \\
\end{array}
\]

I have not given any direct evidence for this revision, but we will see in Chapter 7 that a two-rule formulation such as that given as (61), (62) is necessitated if it is desired to preserve the unitary introduction of there in the face of some data from verbal ES. In any case, such a formulation is preferable metatheoretically. Given a trace theory of movement, I know of no cases where a transformational rule must be assumed to simultaneously move a constituent and perform some other operation, such as trace removal. If there are no such cases, we should certainly make the option metatheoretically unavailable, thus effecting a reduction in the number of
possible grammars of a language.

The other point which I would like to bring up here concerns the interpretation rule (58). Among the several ways in which this rule remains incomplete as stated, no mention has been made of the role of aspect and the auxiliary (T and/or modal) in the interpretation of ES. It is natural to ask at what point in derivations relative to the application of the E rule these items are to be interpreted. It seems to me that their interpretation must follow the E rule, for the simple reason that this analysis implies that the be of at least some ES (e.g. the ontologicals) is meaningless in deep structure and remains so until interpreted by the application of the E rule. If it is correct to think of tense and aspect as adding temporal specification to the meaning of the verb, there will be nothing for them to temporally specify at any level prior to that at which the E rule applies. Similarly, if we regard epistemic modals as some sort of modal operators on sentences, the modal in a sentence like (63) cannot be interpreted until a quite superficial level of structure, since the sentence will have no reading prior to the application of the E rule.

(63) There may not be any more dope.

With these matters disposed of, let us begin our attempt to explain some things about ES.
6.2.2 The Definiteness Restriction

The usual treatment of the definiteness restriction in studies on ES has been the extremely undesirable and unilluminating one of writing \( \textit{\footnotesize{\text{rating}}} \) into the recoding \( \textit{\footnotesize{\text{ rule}}} \) the specification \(-\text{def}\). This is unsatisfactory for a number of reasons. First of all, to the extent that the notion is clear at all, definiteness does not accurately divide the cases, as will be shown shortly. Second, such an approach to the problem results in the postulation of a NP movement rule which refers to the determiner structure of the NP, in clear violation of the characterization of possible syntactic rules assumed in this thesis. Finally, the approach is simply uninteresting. It tells us nothing about the nature of the definiteness restriction. There is no hint given as to why it should be exactly this restriction which is placed on the NP in ES, rather than any one of the infinite number of imaginable alternative restrictions which could be stated if this one can.

In the following section I offer an approach to the definiteness restriction which seems to offer a great deal of insight into the phenomenon. Unexplained aspects remain, but this is scarcely surprising considering the complexity of the realm of problems which the definiteness restriction is shown to impinge upon.

The first step toward learning something about the definiteness
restriction would seem to be trying to find out exactly what it excludes and what it doesn't. The standard position seems to be that the NPs excluded have one or another variety of syntactically definite determiner. This designation is usually taken to include the, possessivized NP determiners, and demonstratives such as this, that, these, those. In addition, definite pronouns and proper names are usually included. It is true, in fact, that all of the above are impermissible in ES. Thus:

\[(64) \quad \begin{cases} \text{the dog} \\ \text{John's dog} \\ \text{that dog} \\ \text{John} \\ \text{him/he} \end{cases} \text{ in the room.} \]

This is not all that is excluded, however; universally quantified NP such as those in (65) are also disallowed.

\[(65) \quad \begin{cases} \text{all dogs} \\ \text{both dogs} \\ \text{every dog} \\ \text{each dog} \end{cases} \text{ in the room.} \]

Similarly, as noticed by Horn (1972), the quantifier word any can be found in ES only in one of its two senses; it occurs only as the polarity item of some, not as a universal.

\[(66) \quad \begin{align*} a. & \quad \text{There isn't anything here.} \\ b. & \quad *\text{There is anything John would do for you.} \\ c. & \quad \text{Is there anything John would do for you?} \end{align*} \]

Furthermore, one can note the difference between (67) and (68) with respect to the interpretation of the NP typhoons.
(67) Typhoons arise in this part of the Pacific.

(68) There arise typhoons in this part of the Pacific.

Sentence (67) is ambiguous between a reading where it is being claimed to be a property of all typhoons that they arise in the part of the Pacific under discussion and one where the sentence is a statement about something that takes place in that part of the Pacific now and then, namely that some typhoons arise. In the first reading, of course, the NP is interpreted universally, whereas in the second it is not. (68), on the other hand, is not ambiguous in this way. It means only something similar to the second reading of (67), where the NP typhoons is not interpreted universally. It thus appears that the ES context selects against the universal reading of NP like that in (67), (68).

These two observations -- that definite NP and universally quantified NP are both excluded from postverbal position in ES -- can be unified if we accept a suggestion of Chomsky\(^7\) that the definite determiner the be regarded as a species of universal quantification. Chomsky's suggestion is essentially that the well-known characterization of finite descriptions as naming a unique entity, which is inadequate for linguistic semantics due to its inability to characterize plural definite descriptions accurately, be replaced for purposes like the present ones with the notion that the definite determiner the signifies universal quantification over the class (or class intersection) denoted by a NP. Under such a scheme, natural
means exist for deriving the familiar characteristics of definite descriptions -- the existential presupposition and the supposition of uniqueness in singulars -- from an interaction of the presence of universal quantification with statements of the cardinality of the class involved and certain general conditions on the use of referring expressions.

If this conception of the nature of the definite determiner the can be extended to the other types of definite determiner noted above, we can rephrase the term definiteness restriction to "universal restriction," and in so doing we will have at least found a more adequate characterization of what sorts of items the definiteness restriction is really excluding from ES. The plausibility of such an extension of the analysis seems clear, although a number of problems would be encountered in a serious attempt at working it out. I will not make such an attempt here, since I really do not wish to get entangled in the problem, but I will give a case or two to show how I think it could be approached.

In the case of possessive NP determiners like John's in (69), the analysis would correctly claim that the entire class of cats belonging to John is being referred to, exactly as is the entire class of "coats on the bed" in (70).

(69) John's coats were eaten by moths.

(70) The coats on the bed were tossed out the window.

Similarly, John's coat in (71) is normally taken to be unique,
that is a universally quantified unit class under these assumptions.

(71) John's coat was tossed out the window. 8

Proper names also seem to be amenable to such an analysis. Their uniqueness, which is being taken here as universal quantification over a unit class, is well-known and demonstrable by examples such as (72),

(72) John just walked in.

which is normally taken as referring to a unique individual (the only John) and is not equivalent to something like (73), which would be a paraphrase of existential quantification over the class of Johns.

(73) Someone called John just walked in.

Examples such as (7h), where the proper name is being used as the name of a non-unit class and the class is existentially quantified are irrelevant, since such usages occur in ES contexts as well.

(74) Some Skraggs just blew up Dogpatch.

(75) There are some Skraggs over to the tavern.

Demonstrations of this sort could be multiplied indefinitely, but I think that little purpose would be served in doing so.

Let us assume, then, that so-called definite NP can in general be analyzed as instances of a kind of universal quantification. Have we now arrived at a correct characterization of the class
of NPs restricted from ES? No. Consider an example like (76).

(76) *There were most people in the room.

The NP most people in (76) is not universally quantified in any obvious way, yet it is restricted from ES. Apparently, some larger notion than universality is necessary in this connection. Other examples which show the insufficiency of universality as a characterization of the excluded NP are the following:

(77) Some unicorns entered.

(78) Many people were at the party.

Both these examples show an ambiguity in the interpretation of their subject NP. Thus (77) can mean either that an indefinite number of unicorns entered or that some of the unicorns walked in, but others, presumably, remained outside. Similarly, (78) can mean either that the party had rather a lot of people at it or that it is true of many people, as opposed, one suspects, to others, that they were at the party. The related ES have only the first of these senses of the NP, cf. (70), (80).

(79) There entered some unicorns.

(80) There were many people at the party.

Clearly, only the first sense is represented. Thus (80) does not mean "There were many people, but not others, at the party." Neither does (79) mean "There entered some, but not other, unicorns." It is important, by the way, to guard here against the intrusion of a third reading which is easily confused with the {some}, but not others" reading. This
third reading contrasts quantities, meaning something like "some, but not many," "many, but not all." This reading occurs perfectly well in ES like (79), (80), as for instance in (81), (82).

(81) There entered some unicorns, but not enough, thank god, to ruin the carpet.
(82) There were many people at the party; I couldn't say there were only a few.

So we see in these facts another instance where an ES seems to be discriminating against a particular interpretation of a NP. Once again, it is very hard to see how universality has anything to do with the characterization of the barred interpretation.

So what do we do? We are in need of some broader term than universality, apparently, to serve as a characterization of the class of NP prohibited in ES. I suspect that that term is quantification. Consider once again the ambiguity in sentence (78).

(78) Many people were at the party.

Let us, imitating Postal, call the two readings of many people in this sentence the "many" reading and the "mny" reading, the former being the reading where it is asserted of many people, as opposed, presumably, to others, that they were at the party. The second, mny, reading is that in which we are told that the number of people at the party was large. Already
from the paraphrases of the readings as just given, one can begin to get a feeling of the correct characterization of this meaning difference. The "many" reading behaves very much like quantification in the familiar sense of the term. It tells us what proportion of the class of, in this case, people the proposition is valid for. At the party then is predicated of any subset of people which meets the criterion of proportional size laid down by the quantifier. In the "many" reading, on the other hand, the "quantifier word" many seems to be doing nothing but expressing the cardinality of the set of people at the party; it is different from expressions like thirteen, a, five hundred and two only in being less specific, and different from the notion plural only in being more specific. The same observations apply to sentence (79), where the determiner in question is some.

(79) Some unicorns entered.

In the "some" reading of (79), the set of unicorns is being quantified over; we are told that for a subset of unicorns such that it meets the quantificational specification "some," the members of that subset entered. In the "sm" reading, on the other hand, we are told only that an indefinite number of unicorns entered. Similarly, the examples given above of ambiguous interpretation of plural NP with Ø determiner can be characterized as instances of this same sort, with the trivial difference that in this case the quantificational reading of the NP is universal.

(67) Typhoons arise in this part of the Pacific,
Thus, (67) means either that it is true for all typhoons that they arise in the part of the Pacific under discussion (quantificational reading parallel to "some," "many" reading) or that that part of the Pacific is characterized by the fact that (an indefinite number of) typhoons arise in it.

If we now inspect a broader portion of the determiner system of English, we find that determiners group into three types with respect to the distinction between quantification and cardinality brought out above. The first group includes few, some, many and their synonyms and the plural indefinite Ø. This group is ambiguous (except for stress) with respect to the quantification/cardinality distinction, as we have seen immediately above. By saying that a particular determiner is ambiguous with respect to the quantification/cardinality distinction, I do not mean that both readings are available in all instances of the use of the determiner in question. As Chomsky (1974) points out, the interpretation of quantification is highly complex, depending on facts about structural position, semantic context, and probably even knowledge about facts of the world, as well as the identity of the particular determiner used. What is meant is only that the two senses (quantification and expression of cardinality) are in principle available with a certain determiner and can in fact be brought out by construction of a suitable syntactic and semantic environment. Thus some is said to be ambiguous in this way even though it can receive only the quantificational reading in a sentence like
Some people are tall. The second group, typified by the overt universal quantifier words (the, each, all, every, both, etc.), most, and numerical expressions of the form three of the, ten of the, has only a quantificational reading. Finally, there is a group which only has the cardinality reading. This group is represented by the singular indefinite article a and perhaps numerical expressions such as three, ten, fifty-two.

When representatives of these groups are inserted into the NP position in ES, we find that the members of the first, ambiguous, group produce acceptable sentences, but only if they are understood in the non-quantificational reading. Members of the second group, those with no cardinality reading, produce deviant sentences when inserted in ES NP position. Finally, members of group 3 produce acceptable ES. Examples of each instance are the following:

(83) Group 1 (ambiguous)
   a. Some people were toasted.
   b. There were some people toasted.
   c. Typhoons arise here.
   d. There arise typhoons here.

(83a) and (83c) are ambiguous between a quantificational and a cardinality reading. The quantificational reading for (83c) is a universal, while that of (83a) is non-universal, but this is a fact about the individual determiners and without interest for us at the moment. (83b) and (83d) are both good sentences, as would be predicted by the ambiguity of (83a) and (83c),
but they have only the cardinality reading, as we have noted above.

(84) Group 2 (unambiguously quantificational)

a. The men were toasted.

b. *There were the men toasted.

c. Everyone was in the room.

d. *There was everyone in the room.

In these examples, the non-ES (84a) and (84c) are unambiguous with respect to the interpretation of the NP. They only have the quantificational reading. Thus there is no sense of (84c) in which it is taken to mean that the number of people in the room was 'all'; in fact, such a reading seems nonsensical.

The sentence can mean only that, of the set of people under discussion, all of them can be described as having been in the room. This is a clear case of a reading corresponding to universal quantification over a set. 11 Accordingly, the ES b. and d. are out.

(85) Group 3 (unambiguously cardinal)

a. A man was shot in the bar.

b. There was a man shot in the bar.

The intuitions here are fiendishly subtle, but I think it is possible to maintain that (85a) means only that the number of men shot was one (the cardinality reading), and not "it can be said of some one man, as opposed to others, that he was shot in the bar." This can be seen somewhat better by replacing a man with somebody, which for these purposes seems to be identical in meaning with a man, except that it has the
quantificational/cardinal ambiguity, which can be brought out, as usual, by stress. When we do this, we find that (85a) is equivalent not to (86a), but to (86b).

(86) a. Somebody was shot in the bar, but fortunately the others managed to get away.
    b. Somebody was shot in the bar; what a mess for the barkeep.

To recapitulate, we have seen that ES do not tolerate the presence of NP which are interpreted as quantified sets. In particular, we have seen that the definiteness restriction on ES can and must be incorporated in a larger "universal restriction," and that this in turn is to be incorporated in a restriction against a still larger class of entities, namely all NP interpreted as quantified sets. If this is indeed the case, what can possibly explain it?

The answer is really quite straightforward, although it will take a bit of backtracking to give it. Consider once again the E rule as given in (58), repeated here for convenience.

(58) E rule
    there AUX (have-en) be NP X is interpreted:
the class C denoted by NP has at least one member c such that P(c) is true, where P is a predicate and P is the reading of X.

One of the inadequacies of this rule as given above and in section 6.1 is that it says nothing about the possibility
that the NP may contain an expression of cardinality. Thus (58), if applied to a sentence like (87),

(87) There were two people in the room.

would derive the absurd interpretation (88).

(88) The class of two people had at least one member p such that p was in the room.

Similarly, even in a case like (89), for which rule (58) was invented, the interpretation given is slightly wrong in exactly the same way.

(89) There were people in the room.

Because the rule takes no account of cardinality, it does not tell us that (89) means that more than one person was there. In response to this difficulty, let us refine (58) to (90).

(90) E rule

\text{there AUX (have-en) be Q NP X} \quad \text{is interpreted:}

the class C denoted by NP has at least one member c such that P(c) is true, where P is a predicate and P is the reading of X and the set of such members c is of cardinality Q.

Rule (90), when applied to (87), (91) below and similar examples, provides the intuitively correct characterization of their meaning.\textsuperscript{12}

(87) There were two people in the room.

(87') (reading of (87) by (90))

The class people has at least one member p such that p was in the room, and the cardinality of the set of such members p is two.
(c1) There are \( \{\text{many}\} \) reasons for being so obtuse.

(c1') The class of reasons for being so obtuse has at least one member \( r \), and the cardinality of the set of such members \( r \) is \( \{\text{many}\} \).

If we take (90) or something similar to it to be the correct characterization of the meaning of ES, we can see immediately that it will prevent the interpretation of ES containing NP with quantificational determiners, since it specifies that the determiner (represented as Q in (90)) must be interpreted as an expression of cardinality. As a concrete example, the application of (90) to an ES like (92) will produce (93).

(92) There were \( \{\text{the all}\} \) people who hate Chopin on the boat from Poland.

(93) The class of people who hate Chopin had at least one member c-h such that c-h was on the boat from Poland, and the cardinality of the set of such members c-h is universal.

This is meaningless, since universal is not a description of cardinality. Similarly, (94) must be interpreted with the "sm" reading of some, not the "some (as opposed to others)" reading, since "some (as opposed to others)" would express a quantification over the set of people, not an expression of cardinality.

(94) There were some people fired.

This, then, is the definiteness restriction. There are several
ways to look at what is being captured by the addition of the cardinality codicil to rule (90). From one viewpoint, what is being said is that it makes no sense to assert of a class that it has some of its, many of its, all of its members. To look at it in a slightly different way, we can forget for the moment the interpretation of EXIST as a class predicate, which was given above mostly as an expository device to emphasize the verb-like nature of there be (e.g., it can have time reference, constitutes an assertion when combined with a NP, etc.), and look at it simply as an expression of the existential operator \( \exists \). A sentence such as (95) will then be taken to be analogous to the expression (96), which is ill-formed.

(95) There is the man in the room.
(96) \( \exists (\forall(x)) \) (\( x \) is a man) (\( x \) is in the room)

This view of the nature of the definiteness restriction (hereafter quantification restriction) has a number of consequences, one of which I would like to sketch here. Several others will come up in the next section.

Recall from Chapter 1 that there is a group of cases where definite NP can appear in ES. An example of such a case is the second sentence in (97).

(97) Is there anything worth seeing around here? Well, there's the Necco factory.

As would be expected, the relaxation of the restriction is
not confined to the special case of definites, but extends
to universals and quantified \( \text{NP} \) in general.

(98) Well, there are all those potholes on Main Street.

(99) Well, there are many of my favorite eyesores.

The most striking thing about the meaning of sentences like
(97) - (99) is the feeling they have of naming parts of a
list. The NP all those potholes on Main Street, the Hecco
factory, many of my favorite eyesores seem to be introduced
as items in a larger list of entities, even if one does not go
on to name the rest of them. The theory developed here provides
an interesting way to look at cases like this.

One could imagine that in such cases some principle allows the
class predicate \( \text{EXIST} \) to take not the set denoted by the
(quantified) NP as its argument, but rather a hypothetical
set which is projected from the NP by taking the set actually
denoted by NP as a member. This larger set would be the "list"
which seems to be lurking in the background of the inter-
pretation of sentences such as (97) - (99). One would then
expect the quantificational structure of the \( \text{NP} \) to be irrele-
vant for the quantification restriction, since the \( \text{NP} \), quanti-
fied or not, will merely denote a member of the set which is
being predicated by \( \text{EXIST} \).

Obviously, this is nothing more than a suggestion at present,
but one wonders what might result from a careful attempt to
make something of it. In particular, one wonders if this
approach would eventually lead to an explanation of another fact about these "list reading" ES: the correlation between structural type (ontological, periphrastic, locational, verbal) of the ES and the possibility of constructing the list reading. Hankamer (1973) claims that the list reading is available only in the ontologicals. Basically, I think this is correct, although there are some doubtful cases among the locationals, particularly if the locational adverbial is preposed. Under the theory presented here, this can be represented as a generalization to the effect that the projection of a set from a member which is the characteristic semantic process involved in the list cases can only be done when the members of the set actually denoted by the NP, and taken to be a member of the superset, are not themselves involved in a predicational relation. It seems as though an explanation may lurk here somewhere, but its nature is unclear to me in detail.

6.2.3 The Predicate Restriction

It will be recalled from preceding discussions that the predicate restriction on ES discriminates among instances of PRÉD; some PRÉDs are tolerated in ES, others are not. A sample is given in (100).

<table>
<thead>
<tr>
<th>PRÉDs permitted in ES</th>
<th>PRÉDs not permitted in ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>sick</td>
<td>all NP PRÉDs</td>
</tr>
<tr>
<td>hungry</td>
<td>shapes</td>
</tr>
<tr>
<td>tired</td>
<td>colors</td>
</tr>
<tr>
<td>alert</td>
<td>intelligent</td>
</tr>
<tr>
<td>clothed</td>
<td>boring</td>
</tr>
<tr>
<td>naked</td>
<td>crazy</td>
</tr>
<tr>
<td></td>
<td>etc.</td>
</tr>
<tr>
<td></td>
<td>beautiful</td>
</tr>
</tbody>
</table>
It is quite clear from even this small a sample that the adjectives in the list which permits NP downgrading are descriptions of states, while those in the no-go list are properties. Accordingly, I shall refer to the former as state-descriptive (SD) predicates and to the latter as property (P) predicates. The appearance of no NP predicates at all in the lefthand list is at first a bit of a surprise, but there is a reason for it. While there is an open class of NPs in English which can be said to denote properties -- e.g. shithead, fool, gas, delight, etc. -- there are precious few which it is even tempting to call state-denoting. Two which do seem to be of this sort are drunk and nude. Consider:

(101) A drunk ambled down the street.
(102) A nude wandered out of the party and got frostbite.

In my speech, at least, (101) can be about someone who has been out celebrating the completion of his thesis, but is not a habitual drunkard, i.e. drunk in this sentence can denote a state. Similarly, (102) clearly is about someone in the state of nakedness. Like every other NP, however, both of these are unacceptable in PRED position of ES.

(103) *There are too many people drunks.
(104) *There were a number of people nudes at the party.

Notice, however, that the state interpretation of these NPs turns up missing in predicate position.

(105) John was a drunk at Bill's last party.
(106) Mary is often a nude among friends.

Neither of these sentences makes any sense, the reason being that
John was a drunk means only that he was an alcoholic, and as far as I can see, Mary is a nude is absolutely meaningless, since nudity is not a property, and the NP a nude cannot have a state interpretation in predicate position. Thus we see that there is some principle which prevents the description of states by means of predication with a NP, and no a NP's appear on the left in the list (100) because no a NP can be state-descriptive in predicate position.

It would be of great value at this point to be able to point out some independent criteria for telling the difference between state-descriptive and property predicates. The best I can do is suggest some tendencies and rules of thumb, plus an imprecise definition or two. Properties are those facts about entities which are assumed to be, even if they are not in fact, permanent, unalterable, and in some sense possessed by the entity, while states are conditions which are, at least in principle, transitory, not possessed by the entity of which they are predicated, i.e., the removal of which causes no change in the essential qualities of the entity. Accordingly, properties tend to be things like shape, color, size, texture, etc., while states tend to be notions like health, alertness, position, etc. The problem of telling a state from a property in individual instances is complicated by the fact that the judgments are dependent on facts of the world and one's conception of them. Thus, while sick is normally to be thought of as a state predicate, there are cases in which sickness can be so
endemic with an individual that it effectively becomes a property of him; in such cases, the adjective acts like a property predicate with respect to appearance in ES. Thus the sentence *There is a man sick is not a statement to the effect that someone has had cancer for twenty years. Similarly, while a sentence like *There are many books heavy is normally unacceptable, it would be quite conceivable as a report of the state of one's bookshelf in a world where books had the property of changing weight at frequent intervals in response to fluctuations in sunspot activity. Matters like this make the problem of giving criteria for state and property predication extremely resistant. Fortunately, the concepts are clear enough that there is little confusion in concrete instances.

Given that the distinction between state and property predication is the relevant variable governing the ability of an adjective to appear in PRED position in an ES, how is this to be explained? Some facts which will be helpful are given in (107), (108).

(107)  a. A man was sick
b. *A man was tall.
c. Sm people are sick.
d. *Sm people are tall.
e. Some people are sick
f. Some people are tall.
g. People are sick.
h. People are tall.
(180) a. There was a man sick.
b. *There was a man tall.
c. There were sm people sick.
d. *There are sm people tall.
e. *There were some people sick.
f. *There were some people tall.
g. There are people sick.
h. *There are people tall.

(107a)-(107d) have unambiguous cardinality words in the determiners of their subject NP. (107e), (107f) have an unambiguous quantifier. (107g), (107h) have a NP with the null plural determiner, which, as mentioned in 6.2.2, is ambiguous between a cardinality sense essentially synonymous with sm and a quantifier sense which happens to be universal. In (107), NP bearing each of these determiners are predicated by a pair of adjectives, one a property adjective, and the other a state descriptive. As the examples (107a-d) show, unambiguous cardinality word determiners can only be successfully predicated by the state descriptive adjective. An attempt at predicing a property adjective of the non-quantified NP a man, sm people in (107b) and (107d) fails. In (107e,f), both kinds of adjective are predicated of a NP with the quantifier some. Both sentences are acceptable. Finally, in (107g, h) we find a subject NP with the ambiguous null plural determiner. In the case where this NP is predicated by the property adjective tall, the NP receives a (universal) quantification reading, meaning roughly "All people are tall." The case (g), by contrast, is
ambiguous, meaning both "Sm people are sick" and "All people are sick," the former being a cardinality reading, the latter a quantificational one. One way to state the principle which proceeds from these data is the following:

(109) Properties are only predicated of quantified NP.
States may be predicated of quantified NP, but
may also be predicated of NP without quantification.

If we now shift our attention to the ES corresponding to (107), which are given as (108), we notice the expected distribution of determiner types: the cardinal sm and a and the cardinal interpretation of Ø are found to turn up in acceptable ES. The quantificational some and the quantificational interpretation of Ø are excluded, as predicted by the quantification restriction. Notice, however, that the conjunction of these two requirements on the interpretation of the NP is exactly equivalent to the predicate restriction: unquantified NP cannot be predicated by properties and quantified NP cannot appear in ES; therefore no NP predicated by a property adjective can appear in ES. Thus the predicate restriction is unnecessary as an independent statement about the behavior of ES. It can be made to follow from two independently necessary considerations: the quantification restriction on ES and the statement that properties can only be predicated of quantified NP.

One possible drawback to this account of the predicate restriction is that it may be insufficiently general. It implies that the very similar distribution of adjectives in contexts like
the following must be a result of factors different from those determining the distribution in ES, since quantification seems to be irrelevant here.\textsuperscript{15}

(110) With so many people \{drunk\}\{*fat\} nothing much could be done.

(111) Noon found me \{drunk\}\{*fat\}.

(112) John saw Bill \{drunk\}\{*fat\}.

(113) John crawled in the door \{drunk\}\{*fat\}.

For the most part, I do not find this unduly bothersome. Only in the case (112) are the distributions really point-for-point identical. In other contexts, the distributions differ fairly significantly from that in ES. Compare (114) - (116).

(114) With so many people \{converts\}\{crazy\}\{mutated\}, things get worse and worse.

(115) Noon found me \{insane\}\{a convert\}.

(116) Bill walked in the door \{a new man\}\{tall and straight\}.

None of the items appearing in the contexts in (114) - (116) can be found in ES.

6.2.4 Additional Matters Concerning the Quantification Restriction and the Predicate Restriction

There are several points proceeding from the discussion in the last two sections which it seems sensible to pause and consider at this point.

First, it may be noted that there is a common property of the
interpretation of sentences claimed above to involve non-quantified NP. Some such sentences are collected in (117).

(117)  

a. Typhoons arise in this part of the Pacific. 

("sm" reading) 

b. There arise typhoons in this part of the Pacific. 

c. There were many people in the room. 

d. There was a man shot in the bar. 

e. A man was shot in the bar. 

f. Sm people were at the party. 

g. People were sick. ("sm" reading) 

h. There were people sick. 

In (117), we see a range of ES and non-ES, all of which have non-quantified NP. In the discussion in 6.2.2, a locution like (118) was often resorted to to bring out the nonquantificational reading in cases like (117a), for instance. 

(118) It is a fact about this part of the Pacific that typhoons arise in it. 

This paraphrase points up the fact that (117a), in the reading where typhoons is interpreted non-quantificationally, cannot be taken to be a statement about its subject. As far as I can see, this is perfectly general; if a NP is to be taken as the thing its sentence is "about," it must be quantified. Consider for instance sentence (117g), which is ambiguous. If the "sm" reading of the NP people is chosen, the sentence is a naked, rather non-committal description of an event, similar to (117e), for instance. If, on the other hand, for whatever combination
of contextual and extralinguistic reasons, a quantificational reading is given to the NP, so that the sentence comes to mean something like "In general, in those days, people were sick.", there is a possibility of regarding the sentence as being a statement about the class of people. This distinction has been talked about for years under a variety of names: "topic," "categorical judgment" (Kuroda, 1971), perhaps "syntactic orientation" in the sense of Dixon (1970), Hale (1968), Kimball (1973). Perhaps the most frequently noted fact about this phenomenon is that the NP of existential sentences can never be interpreted as topic. If the account given above is correct, there is a reason for this: the ES context, due to its quantificational import, bars the occurrence of quantified NP, and non-quantified NP cannot be topic. Notice that this is not merely a terminological revision, since the distinction among determiner interpretations which I have called quantificational/cardinal will be necessary to any theory which attempts to provide a characterization of possible topic NP, quite independently of any facts about ES. This is shown by (117a, e, f, and g), for instance, where non-quantified NP cannot be topic, despite the fact that the sentences are not ES.16

Another matter which it may be interesting to consider at this point is an observation about the tangled and much-debated topic of the interpretation of relative scope of quantifiers.
Consider a sentence like (119), which is widely considered to be ambiguous between a reading where the quantifier some takes
wide scope, and one where it is interpreted within the scope of every.

(119) Some arrows hit every target.

In the first reading, the sentence means that it is the case for some subset of arrows that they each hit every target. In the second reading, it is claimed that every target was hit by an indefinite number of arrows. The first reading, under the theory developed here, is a clear case of a quantificational interpretation of some, while the second is equally clearly the cardinality reading of this determiner, as can be shown by the fact that the second reading is much easier to get if some is distressed and reduced, while the first is more easily available with full, stressed some. Notice further that the first (some) reading, but not the second (sm) reading, can be paraphrased by (120).

(120) It is a property of some (but not all) arrows that they hit every target.

It was claimed above that properties can only be predicated of quantified NP. Considerations like this lead one to suspect that there will turn out to be significant interactions between relative scope phenomena and the phenomena about predication type and determiner interpretation noted in this study, leading perhaps to an eventual reduction of concepts. Some indications that research along these lines could be profitable are found in Ioup (to appear). Ioup notices that the range of possibilities and preferences in order of quantifier interpretation
are in part dependent on the identity of the quantifiers involved. Accordingly, she sets up a hierarchy of English quantifier words arranged according to their inherent tendency to take wide scope. At the top of the wide scope hierarchy appear the universal quantifier words and most, followed by many, some, etc., arranged more or less in order of decreasing cardinality. In reviewing her data, I find huge differences in my judgments between the cases involving universals and most and those involving many, some, etc. The universals and most seem to have a very strong tendency to take wide scope, while the others usually take wide and narrow scope with roughly equal ease. Surely it cannot be an accident that it is exactly most and the universals which are unambiguously quantificational in the system I have been talking about.

6.2.5 The Syntax of Locational ES
As has been remarked in this and many other studies of ES, certain ES like (121) have no attested sources on an analysis which derives them syntactically from sentences of the form of (122).

(121)  There were some people in the swimming hole.
(122)  Some people were in the swimming hole.

Relevant examples are found in (123), (124).

(123)  a.  There were holes in the wood.
       b.  There are many ridiculous laws in this state.
       c.  There is space in the room.
       d.  There is snow on the roof.
(124)  a. *Holes were in the wood.
     b. *Many ridiculous laws are in this state.
     c. *Space is in the room.
     d. *Snow is on the roof.

This problem is extremely complex and resistant of solution, partially, I think, because the judgments in (124) are determined by several interacting factors, including the interpretation of determiner structure and facts about the meanings of particular lexical items. Thus, for instance, (124d) can be markedly improved by altering the determiner, but (124b) cannot. 17

(125)  a. {The \{Sm \} snow is on the roof.
     b. *The {Most
        {All the
        {Sm
        {∅

Accordingly, I do not have an explanatory account of these cases; the theory of ES developed here, however, is at least capable of guaranteeing that the bad sentences in (124) do not receive an interpretation. 18

Let us assume that sentences of the form NP - [\textit{be} - LOC]_{VP} are uniformly interpreted as predications of location on their subject NP. Let us further assume that, whatever the exact causation of particular cases of uninterpretability like those in (124), the notion of locational predication is relevant in some way. In other words, let us assume that sentences like (124) are out because they attempt to predicate location of
some NP of which location cannot be predicated, ignoring the question of what it is about the NP that makes them incapable of being so predicated.

Given this assumption, it might seem that we have a way of ruling out (124) and permitting (123) without saying anything further at all. The sentences in (123), by reason of the application of the E rule, are existence statements, rather than predicate structures of location. Therefore we would expect them to escape whatever principles prevent such predication on NP such as those in (123), (124). All that would be necessary would be to specify that sentences such as (124) are interpreted in derived structure, as is (123).

There is an added complication, however. Notice that the E rule will interpret a sentence such as (123a) in the following way: "The class of holes had at least one member h such that h was in the wood and the cardinality of the set of such members h is equal to or greater than 2." The locational predication is still present in the interpretation and would be expected to violate whatever constraints rule out the same predication in (124a).

There are two responses to this, neither of them unreasonable in my opinion. First, one could note the existence of sentences like (126).

(126) Some holes in the wood were filled in with putty.
In (126), there is an occurrence of a location predication on holes, but the sentence is all right, presumably because the predication occurs in a relative clause. One might, then, propose that whatever principle prevents this sort of predication on an NP like holes is valid only for the main assertion in a sentence. Given this, and given that EXIST is the main assertion of (123), everything falls out correctly. There are problems with this, however, since it is clear from examples like (127) that some sharper notion than "main assertion" will be necessary.

(127) *John believed that holes were in the wood.

Another approach springs from the following observation. Whatever is or is not said about locational ES, it is clear that they can derive from either of two sources, neither of which can reasonably be ruled out of the grammar. One is the source assumed in the standard discussions of there-insertion, namely structures like that in (122), which can be represented as (128).

(128)

```
  S
 /\ \
NP VP
 / \ / \\  LOC
  be  \
```

The other is that shown in (129).

(129)

```
  S  (S?)
 /\     \
NP VP  LOC
  be
```
The VP structure in (129) is necessary independently for ontological ES, and sentence adverbials like the LOC in this structure occur virtually unrestrictedly in English, so it would be ad hoc to assume that one could not show up in an ES. In fact, they almost certainly do. Observe (130).

(130) There will be a riot by sundown.

Adverbials like by sundown, unlike locatives, cannot normally occur in VP headed by be.

(131) a. John was in the room.
    b. *(The riot) was by sundown.

Furthermore, when they occur with other verbs, they do not subcategorize the verb and can be freely preposed.\(^{19}\)

(132) John will kick Fred by sundown.

(133) By sundown, John will kick Fred.

Apparently, then, by sundown and similar adverbials occur only VP externally. If this is the case, it is clear that (129) exists as a deep structure of English.

Given the existence of the two deep structures (128) and (129), there is no way to prevent the most general statement of the NP downgrading rule from applying to both of them. One would thus expect all locational ES to be structurally ambiguous. If this is the case, we can trivially write into the E rule a specification that external sentence adverbials like that in (129) be ignored in the search for a string X to take as a predicate on members of the class denoted by the NP term. If such adverbials are in fact generated extrasententially, as indicated
by the dotted subtree in (129), this will be accomplished automatically by the conventions of the cycle. If they are generated inside the sentence, the same effect can be obtained by writing some additional structure into the rule.

In any case, such a step is necessary independently, as one would scarcely want to say that by sundown in (130) is a predicate on riot.

With this much granted, we can propose the following solution to the source problem for locationals: (128) and (129) are both well-formed deep structures of English. Some sentences (e.g. (124)) originating as (128) are ruled out either in deep or in derived structure by at present poorly understood principles governing the predication of location. Other sentences originating as (128) and meeting the conditions placed on them by those principles survive and reach the surface either as sentences like (122), or, if transformed by NP downgrading and trace removal, as ES like (121). ES like (123), whose derivation from (128) is blocked by the conditions on predication of location, can nonetheless arise from (129). At no time in their derivation will these sentences have had a structural configuration such that the locational expression can be taken as a predication of the NP; therefore the sentences survive as (123). They survive only as ES, however, due to the obligatoryness of NP downgrading in structures like (129). Finally, the sentences which meet the conditions on predication of
location, and thus can survive a derivation from (128), can also arise from (129). These sentences are then structurally ambiguous. Such a sentence is (121).

The necessity under this theory of claiming that sentences like (121) are ambiguous is not very damaging. In general, we would expect that a statement to the effect that "there are some people, and those some people are in the swimming hole" would be semantically indistinct from one to the effect that "it is the case in the swimming hole that there are some people," and these are roughly the two readings predicted by the assignment of a double structure to (121). Only in cases where some special circumstances would make one or another of these readings impossible would we expect to see any effect of the difference between them. This is hypothesized to be the case in (124).

Before leaving the topic of locationals, it would be interesting to look at the behavior of the locative adverbials in such ES with respect to the transformation of adverb preposing. Chomsky (1965) noted that adverbials which subcategorize the verb do not undergo adverb preposing, and took these properties as criteria for VP-internal, as opposed to VP-external, adverbs. As has been noted previously in this study, all locational ES allow their adverbials to prepose. All this tells us, of course, is that all locational ES have a potential source of the form of (129), which is no great surprise.
Sentences like (134), however, are of more interest.

(134)  a. A dirty old man resides in this house.
       b. *A dirty old man resides.
       c. *In this house, a dirty old man resides.

The verb reside, as seen in (134), is subcategorized by locative adverbials; also, the locatives in sentences with reside do not prepose. One would thus assume that locatives appearing with reside are VP-internal. Reside, however, is also a verb which can appear in ES. When we try the tests on ES with reside, we find:

(135)  a. There resides in this house a dirty old man.
       b. *There resides a dirty old man.
       c. In this house, there resides a dirty old man.

(135c) is puzzling. Why should this clearly VP-internal adverbial prepose? The answer, I think, is found in the existence of the E rule.

Erteschik (1973) proposes the existence of a class of rules similar to the E rule, whose effect is to reanalyze a given string of formatives as a semantic unit, assigning to it an interpretation as an "operator." She further proposes that when such rules apply to a string which crosses a major constituent boundary, they have the effect of deleting that constituent bracketing for the purposes of later rules, permitting otherwise ungrammatical extractions, etc. Note that the E rule applies across the leftward bracket of VP. If it has the effect of deleting that bracket, as Erteschik proposes, it becomes less
surprising that the VP-internal adverbial in (135c) can be moved by the adverb preposing rule. Adverb preposing, a root transformation, will not apply until after the cyclic E rule has deleted the verb phrase bracketing, and the adverbial will no longer be inside a verb phrase for these purposes.

6.2.6 The Problem of Ungrammatical Sources for Ontologicals
An account of ES containing a rule of interpretation like (90) is able to provide a means of blocking the ungrammatical source sentences of ontological ES, provided one makes a particular assumption. That assumption is that the copula is meaningless in deep structure and is interpreted at surface structure as a marker of predication; in order for such an interpretation to be accomplished, copula must be located in surface structure in a position between constituents (or their traces) which can take part in a predicational relation: for our purposes, NPs on the left and NP, AP, PP (at least) on the right. In the event that the copula is not in such a position in surface structure, it cannot be interpreted and the sentence is starred by a convention against the appearance of uninterpreted elements in surface structure. Essentially this claim is defended in Fiengo (1974), and it is quite consistent with the present study; as was mentioned in an earlier footnote, a system like mine, wherein the be of ES is interpreted in derived structure, leads rather naturally to the observation that there is little evidence that be is ever meaningful in deep structure. If we accept a system like this, it is obvious that the sentences which
need to be blocked, like (136),

(136) *Ghosts are.
do not stand a chance of survival, since there is no constituent of the appropriate form to the right of be in surface structure to feed the rules necessary to interpret be, and no trace can be there, since no movement from the position has taken place. The ES version of (136), given in (137),

(137) There are ghosts.
will undergo the E Rule, which provides an interpretation for the entire string there T be, leaving no uninterpreted formative s behind to start the sentence.

6.2.7 The Leftmost Be Condition
A system like the one which has been developed in this chapter gives one the choice of writing the leftmost be restriction into the syntactic rule of NP downgrading, or incorporating it in the E rule. In either alternative, the appropriate stratagem is to spell out the possible syntactic material which can intervene between subject position and the first occurrence of be, rather than utilizing a variable. Thus, if we chose to complicate the syntactic rule, we would wind up with the formulation in (138)

(138) SD: X NP AUX (have-en) be Y SC: 1 t 3 4 5 2 6

This assures that the NP will be reordered over the leftmost be, and makes use of no quantificational condition to do it. Under this alternative, the E rule could apply to the structure
(139) there X be NP Y

If we choose the other alternative of complicating the interpretive rule and leaving the transformation maximally unconstrained, we arrive at the rules as they were given in the body of the text, that is, rule (61) and rule (90). Under this alternative, the interpretive rule does the work of preventing sentences like *There was being a man shot. Such a sentence does not meet the structural description of the E rule; therefore the rule cannot apply, there will not receive an interpretation, and the sentence will be thrown out by the uninterpreted element convention.

I have chosen the alternative wherein the syntactic rule is left unconstrained and the semantic rule is complicated for two reasons. The first is simply that this way of doing things avoids a possible complication in the account of the difference in interpretation between sentences such as (140) and (141).

(140) There were ships believed to have been lost.

(141) There were believed to have been ships lost.

Recall that the explanation given for the difference in truth conditions in cases like this depended on the cyclic application of the E rule; in (141), the rule applies on the inner cycle, creating an existence assertion in the scope of believe, while in (140), due to the application of the rule on the outer cycle, the assertion is outside the scope of believe. If the E rule were written with a variable, it is not entirely clear that it could not reapply on the outer cycle in (141), creating
exactly the interpretation that the cyclic interpretation was introduced to avoid. However, it is conceivable, perhaps even likely, that some sort of condition is needed in the theory which specifies that an element does not get interpreted twice; if this is the case, these cases do not help us decide between the alternatives under discussion here.

A more interesting reason for doing things the way I have is the following methodological one: there seem to be good reasons for adopting a principle of minimal factorization in syntax. Such a principle would disallow the statement of transformations whose structural analyses mention strings of elements which are not directly affected by the operation of the rule, requiring the use of a variable in such cases. Such a principle would prevent the statement of large numbers of nonattested rules which are nonetheless possible transformations under a theory not incorporating it. For instance, a rule moving a NP across VP just in case the VP contains an indirect object, a possible rule under a theory not incorporating the minimal factorization principle, but one which probably exists in no natural language, would be unstatable in a theory incorporating such a principle.

A rule like (138) would violate minimal factorization, and it is desirable not to include such a thing in the syntax if a plausible alternative is available. The alternative pursued here, that of incorporating the statement necessary to accomplish the left-most be restriction into the interpretive rule for ES, strikes
me as indeed rather plausible. The E rule is a reanalysis rule; that is, it selects a string of elements given by prior syntactic processes and groups them together as a semantic unit. Granted that virtually nothing is known at present about such rules, it would nonetheless be surprising if they were to turn out to deal in discontinuities separated by arbitrarily large pieces of structure, as do syntactic rules. If they in fact do not do so, one would want to exclude variables from their statement. Given this, the formulation (90) represents exactly the correct approach.

Before leaving this topic, I should mention that either of the two alternatives just mentioned as an account of the leftmost be restriction provides a way of preventing the derivation of impossible sentences such as (142), (143), which were mentioned as a problem for the movement analysis of ES at an earlier point in this thesis.

(142) *I forced there to be several people in the room.
(143) *I asked there to be sm witnesses on hand.

If the complements of verbs like force and ask are sentences with the element PRO in subject position, the E rule (or NP downgrading on the alternate formulation) will not be able to apply in such sentences, due to the presence of the intervening PRO subject between there and to be.

6.2.8 The Semi-modal Restriction

In the course of evaluating various accounts of the semi-modal restriction in the first part of this study, we discovered that
the constructions be to and be going behave exceptionally in at least two other ways besides their opacity to NP downgrading: they do not occur in perception verb complements, and they do not undergo WH-be deletion. Furthermore, if the processes which derive reduced cleft sentences are distinct from those involved in the reduction of relatives, they are also exceptional with respect to them. Finally, we can see by examples like (144) that they also refuse to undergo the rule of gapping.

(144)  
a. *John was \{about \{certain\} to leave and Bill (going) to arrive.

b. John was certain to leave and Bill likely to arrive.

Clearly, what is needed as an account of these phenomena is some way to characterize the semi-modal constructions as syntactic outlaws, rather than a series of separate restrictions on individual rules toward which they behave exceptionally. These constructions are certainly idiomatic in meaning, and one might well propose that an idiom reanalysis rule like that which optionally re-analyzes take advantage of as a verb applies to the semi-modal constructions, insulating them from being affected by a variety of rules of grammar, including the insertion of major category items. If this approach is adopted, the only remaining difficulty which these constructions provide is that be going must somehow be prevented from blocking the application of the E rule in instances like (145), where its presence in a position between there and be NP would be expected to cause the string to fail to meet the structural description of the rule.
(145) There is going to be a riot.

The simplest response to this would be to regard *be going* as a subject raising verb. Under this analysis, the cyclic E rule would apply on the lower cycle in (146), before the application of NP preposing (raising) derives the structure (145).

(146)

```
S
  NP
  V
  S
```

*is going*  *there to be a riot*

6.3 Conclusion to Chapter 6

We have been through rather a lot of material in this chapter. In 6.1, a semantic analysis of ES was presented. In 6.2, this analysis was used in conjunction with an extremely simple movement rule to generate revealing accounts of the definiteness restriction, the predicate restriction, the problem of sourcelessness in ontological and locational ES, and several of the less central distributional peculiarities of ES. The system which results fits well into a linguistic theory incorporating quite severe restrictions on the notion of possible syntactic rule, due to its use of independently necessary generalizations about meaning to remove the large number of unprincipled restrictions and special statements which are usually assumed to be necessary in a movement analysis of ES.
1. If taken literally, this can only mean that "existential" is not a semantic notion after all, since existential and non-existential sentences are taken to have the same meaning. It is clear from Kimball's article that this is not what is intended, however, since it is devoted to a particular semantic analysis of there-sentences as expressions of location/existence in which rather implausible deep structures and derivations are set up for there-sentences exactly to distinguish them semantically from their putative sources on the there-insertion analysis. Thus I take this locution to be shorthand for "of the same meaning, except for the matter of existentiality."

2. Grinder, in his 1972 paper on the syntactic cycle, claims that such a derivation is unjustified for examples like (25), opting on the basis of some very unclear judgments from extraction for the alternative under which such examples occur only as ontological ES, with a complex NP coda. Grinder does not say, however, how such sentences are to be prevented from arising from (23) through the derivation just sketched. Under a cyclic metatheory incorporating an NP-preposing rule and there-insertion it is in fact impossible to block such a derivation without
the introduction of incredible complications, and I do not see offhand how it would be any easier under the non-cyclic metatheory proposed by Grinder, not that this is relevant in any case, since a cyclic metatheory has been assumed throughout this thesis and will continue to be. For this reason I conclude that the derivation represented by (23) - (25) exists.

3. Alternatively, one could propose that the EXIST interpretation rule apply at surface structure, given a theory of syntax in which movement rules leave null elements ("traces") in the deep structure positions of moved noun phrases. Under this theory, the EXIST interpretation rule would be defined on there or its trace. The theoretical implications of the choice of one or the other of these alternatives are of course highly significant, but I do not see that the choice has any important empirical consequences for the matters under consideration. For detailed exposition of a theory of the type mentioned here, see Fiengo (1974).

4. The statement given here presupposes an analysis of the auxiliary first given by Klima (in lectures at M.I.T. in 1966) and later by Emonds (1970) and Jackendoff (1972), in which the perfect and progressive aspect markers are introduced outside the AUX. I am not particularly concerned with its correctness here; one must state rules
some way, and this is as perspicuous as any other.

5. In fact, with the possible exception of the marginal examples (49) - (53) above, I see no reason to believe that any sort of be receives an interpretation in deep structure. An observation like this seems to be the source of the many proposals in the literature that be be transformationally derived.

6. This is rather circular. Non-appearance in ES is generally taken as the primary criterion of definiteness.

7. In Chomsky (1974), is found a succinct and insightful treatment of a number of topics connected with the material in this section. Also, Vergnaud (1974) is relevant.

8. A problem arises here in the person of examples like (i), brought to my attention by Paul Kiparsky.

   (i) John's arm was around Mary's neck.

One does not have to conclude from (i) that John has only one arm. I do not know exactly what is going on here, but whatever it is, it is not a problem directly related to the attempt to extend the universal quantification analysis to definite determiners other than the. Compare, for instance, (ii), where the chair more than likely has two arms.

   (ii) The hookah is on the arm of the chair.
Also, of course, it is exactly as much of a problem for the traditional analysis in terms of uniqueness as it is for the universal analysis.

9. These cases tend to be disambiguated by appropriate stress. Thus, destressing some or many brings out the first reading, while the placement of stress on the quantifier reinforces the second. This, plus the vowel reduction attendant upon destressing some, is what underlies Postal's (1966) notation sm for the first sense of some. Another device which helps in the disambiguation is to replace some, many with some of the, many of the. This brings out the second reading.

10. It is not clear at this point that the ambiguity is really to be represented as inherent to the NP, rather than stemming from some sort of differences in theme or syntactic orientation or whatever. These matters are inter-related in complex and interesting ways, to which we return shortly.

11. There is, of course, an obvious reason why universal quantifier words like the, all, every cannot function as expressions of simple cardinality, as words like some can. The reason is that there can be no translation metric to all from a number or range of numbers of entities that will be valid independently of the cardinality
of the set quantified by all. There can, however, be such a metric for quantifiers like some. Thus both (i) and (ii) would seem to be true if there are in fact, say, five hundred bow-legged cats or five-legged spiders, despite the fact that there are known to be vastly more spiders in the world than cats.

(i) Some cats are bow-legged.

(ii) Some spiders have five legs.

The truth of (iii), (iv) however, by virtue of the meaning of all, requires different translations of all into a real number.

(iii) All cats are bow-legged.

(iv) All spiders have five legs.

For (iii) to be true, \( n \) cats = the number of cats in the world, say \( m \) million, must be bow-legged. For (iv) to be true, \( o \) spiders = the number of spiders in the world, say \( p \) billion, must have five legs. Thus it is to be expected that some can have a second sense which is not a quantification over the set of cats, spiders, but rather a predication of simple cardinality, as in (v).

(v) Some [read sm] cats just walked in.

which states not that it is true about a certain subset of cats that they just walked in, but rather that it is a fact that a small number of cats just walked in. Similar considerations apply to most as apply to all, since most has a definition as a fraction of the cardinality of the set (roughly, greater than 50%). Many, which, like some,
has a reading as a cardinality word, is a less clear case, but I think the above considerations apply here as well.

12. I am aware that this formulation runs into problems with the negative determiner no, but I do not particularly care. There are obvious ways around the problem, and it does not seem worth pursuing here.

13. I regard the acceptability of all extended APs, like tall enough to play basketball, smart enough to solve the problem, too insipid to be believed, in ES as irrelevant to the matter at issue here. I would claim that all such cases are to be regarded as instances of the structure there be [NP NP AP]. That is, they are all ontological ES. Notice that NPs of the necessary form are independently attested: a man smart enough to solve the problem, a movie too insipid to be believed.

14. Some of this description I may have from R.W. Fienko, although I can't recall exactly.

15. I am indebted to Haj Ross and Paul Kiparsky for many of these facts.

16. It is extremely tempting to suggest here that all that is really meant by notions like topic/comment is predication. The reader will have noticed that the characterization
given in this chapter of the nature of the interpretation of the determiner system results in the existence of large numbers of NP which are claimed to contain no quantification at all. If the semantic interpretation of sentences is regarded as being similar in the relevant respects to a first order logic, this is nonsensical. While I cannot say that this bothers me very much, it is worth noting that a response to the problem would be to say that not all propositions in natural language are properly to be regarded as involving predication. The term predication, and the implied analogy with logical expressions, could be reserved for statements of attribution, statements "about" some entity. If this were done, it would result in a situation wherein the NP I have characterized as non-quantified would show up exactly in situations where nothing is being predicated of them, i.e. where they are not "topic."

17. For an interesting investigation of some matters connected with this problem, see Kimball (1973).

18. I assume throughout this discussion that such sentences are to be ruled out semantically, rather than being characterized as syntactically ill-formed. This seems clear from the nature of the facts which seem to be relevant, e.g., the interpreted quantificational structure of the NP.
19. These criteria, which were given in Chomsky (1965) for VP-internal versus VP-external adverbials, cannot be applied directly to occurrences of adverbials in ES; subcategorization is scarcely a well-defined notion for be, and proposing is irrelevant for reasons which will be given shortly.
CHAPTER 7
VERBAL ES

The group of ES designated in the preliminaries to Part II as "verbal" present syntactic and semantic problems of rather a different nature than those which we have encountered with the types of ES formed on be. I have a great deal less to say about these problems than I did about those seen previously in this thesis; as a result, this chapter is more accurately described as an addendum whose purpose is to present two matters which I think will be central to the fuller analysis of these cases which one hopes will be forthcoming. The two matters which I wish to mention are, first, that the two subtypes of verbal ES which were distinguished at the beginning of Part II must not be confused if the investigation of these cases is to get anywhere, and, second, that there seem to be principles determining the selection of possible verbs in the inside verbals which relate in some way to the semantic considerations investigated in connection with the quantification and predicate restrictions on the be cases, although the exact nature of the relationship is unclear to me. Each of these topics gets a section.

7.1 Difference between Inside and Outside Verbal ES
In the preliminaries to Part II, verbal ES like (1) were terminologically distinguished from cases like (2),
(1) There began a rainstorm.

(2) There walked into the bedroom a unicorn.

the distinction being one of the position of the moved NP in surface structure. In the inside verbals (hereafter IV), the NP is found in a position immediately following the main verb, while in the outside cases (OV), it shows up to the right of the entire verb phrase. This distinction was not made capriciously; the IV and OV types show rather fundamental syntactic and semantic differences, some of which will be pointed out in this section.

7.1.1 Inside verbals

The inside verbals behave in every respect like ES, and it seems likely that the analysis developed above for their be-containing brothers can be extended to them with only minor modifications, although some problems of detail remain. As the modifications required in the formulation of the existential sentence rules (61) and (90) in order to extend them to these cases would for the most part be changes in the direction of increased generality, this is all for the better.

As an example, consider what would happen if we were to replace the designation be in rule (61) and rule (90) with some category symbol, call it VBL, which would be taken to include V and all instances of be, including the passive and progressive auxiliary. Given that such a category definition could be
motivated on independent grounds\textsuperscript{1} and that the list of verbs which may appear in IV ES is given by the interaction of some aspect of their meaning with the semantic principles operating in ES, such a system would derive the IV cases correctly for the most part.\textsuperscript{2} Furthermore, it would make two correct predictions. First, the distribution shown in (3) would be predicted, since the structural description of the E rule is not met by the structure in (3b).

(3)  
\begin{itemize}
  \item a. There developed several objections.
  \item b. *There were developing several objections.
  \item c. Several objections were developing.
\end{itemize}

Second, the fact that the quantification restriction on NP in ES extends to NP in IV ES would be predicted, since the E rule would apply to these cases as well.

(4)  
\begin{itemize}
  \item a. *There arose that huge riot.
  \item b. *There developed John's objections.
\end{itemize}

It seems, in other words, that there would be no difficulties of principle in the extension of the analysis developed in the previous chapter to the IV cases of ES. The details would require some careful thought, however, and it is possible that some considerations would be turned up in the process which would cast doubt on the wisdom of the attempt to generalize the treatment in Chapter 6 to these cases.

7.1.2 Outside Verbals

The outside verbals are a different problem altogether, and can be
called with some justice the outlaws of the ES world. For one thing, they have no quantification restriction.

(5)  

a. Thereupon, there ambled into the room a frog.

b. At the meeting, there were introduced into the record many objections.

c. Suddenly there flew through the window that shoe on the table.

d. There stood next to Mary's bed the ugliest lamp I have ever seen.

The examples with quantified NP in (5) are unlike the exception cases noted in section 6.2.2, in that they give no feeling of list construction.

In a way, the absence of the quantification restriction in examples like (5) is fortunate, as it is predicted by the extention of the theory of Chapter 6 suggested immediately above. The syntactic material intervening between the verb and the postverbal NP in OV ES would be expected to block the application of the E rule, since it is formulated without a variable between V and the following NP. If the E rule does not apply, there will clearly be no quantification restriction.

On the other hand, example (5) brings up the question of what interpretation is, after all, to be assigned to the instances of there in OV ES. If they are not interpreted in some way,
the convention prohibiting the presence of uninterpreted items in surface structure would be expected to throw out all OV ES. Furthermore, if the E rule does not apply to sentences like (5), some of the means of throwing out unacceptable ES by appeal to failure of the E rule which were suggested in the last chapter could not be employed for these cases. Sometimes this makes correct predictions, as in (6); sometimes false ones, as in (7).

(6) There were being developed in the laboratory many vile devices.

(7) *John forced there to walk into the fireplace a dog.

Besides their immunity to the quantification restriction, OV ES show differences from IV ES in the matter of verb selection. The latter accept only a quite small class of intransitive verbs expressing various concepts having to do with being or coming into being, e.g. arise, emerge, develop, ensue, begin, exist, occur. The OV cases, on the other hand, show a bewildering variety of verbs. The list is immense and may in fact comprise a majority of the intransitive verbs in English. Furthermore, the judgments are very uncertain in particular cases. About the only principles I have been able to extract about the membership of this class are that they are intransitives and can occur with locative expressions.

With this much known, it becomes rather unlikely that the IV and OV cases of ES are insightfully to be accounted for as a
unitary syntactic phenomenon. It seems, in other words, that an additional rule is needed for the outside cases. The contrary approach would be to claim that the NP in OV ES are reordered from subject position by the same rule involved in the derivation of the IV cases, then moved from postverbal position to a position following the whole verb phrase by a rule such as complex NP shift (Ross, 1967). The difficulty with this is that in all cases with a verb which does not appear in inside verbal ES but does appear in outside verbal ES, the second reordering rule would have to be obligatory, whereas in cases where the NP can show up in either position, the rule would have to be optional. Both cases exist.

(8) a. There developed many objections at the meeting.
   b. There developed at the meeting many terrible objections.

(9) a. There stood beside the table a lamp.
   b. *There stood a lamp beside the table.
   c. *There walked a unicorn into the room.

Thus it seems more likely that cases like (8) arise through the rule for IV ES, plus an optional application of complex NP shift, while the NP in cases like (9) are reordered directly from subject position by a separate, optional rule. Credence is lent to this contention by the fact that in general the NP cases like (8b) are fairly "heavy", while those in sentences like (9a) can be as internally uncomplicated as a lamp.

If this is correct, and if it is desired to introduce there
unitarily in all cases of ES, despite the very different nature of the OV cases, it is evidence for the formulation of the ES syntactic rules given in Chapter 6, wherein the movement of the NP and the introduction of *there* are regarded as separate rules.

7.2 On the Nature of the Verbs in IV ES
From the considerations given in the preceding section, I submit that it makes good sense to regard the IV cases of ES as a potentially explicable linguistic phenomenon. About the OV cases I am far less sure; perhaps there are interesting things to be said about them, but it seems to me from their rather anarchical character and the unclarity of the judgments one can make about them that they describe a field of data which will remain outside the interest of a theory concerned with the systems of syntactic and semantic principles which determine the nature of language as a formal entity. In any case, I have nothing to say about them. Accordingly, I restrict my attention in this section to the IV cases.

The most interesting question one can ask about the IV existentials, it seems to me, is what the principles are which determine the array of verbs which can appear in them. In this section I offer some thoughts about this matter.

It was noted above that the verbs which one finds in IV ES tend for the most part to be expressions of being or coming into being. One might ask, as does Kimball (1973), to whom
this observation is due, why it should be that these two notions are represented, but not, for instance, "cease to be." One way to approach this question is to look carefully at the meaning of a particular selection of verbs which occur in ES. Consider, for example, the three verbs grow, develop, and follow. All these verbs appear in ES. Furthermore, they are all at least two ways ambiguous. Thus, develop can mean both "arise" and "mutate in form", as illustrated in (10).

(10) a. All the problems he had warned us about developed.
    b. Human beings develop comparatively slowly.

Similarly, grow can mean both "increase in size or maturity" and "live rootedly."

(11) a. Corn grows very slowly in Massachusetts.
    b. A plum tree grows in my backyard.

Finally, follow can mean both "occur after" and "move in the same direction as, but behind."

(12) a. A rainstorm followed.
    b. The taxicab followed slowly.

When these verbs are put into ES frames, only one reading survives.

(13) There developed several objections.
(14) There grew some corn in our garden last year.
(15) a. There followed a rainstorm.
    b. There followed a taxicab (*slowly).

Sentence (13) means only that several objections arose, not that they changed form; (14) means that corn was present and alive
in the garden, not that it increased in size or maturity, except to the extent that the former entails the latter. In (15a), the meaning is clearly that of "occur after," and (15b), I think, only means that the appearance of a taxicab followed some other event in time, not that a taxicab proceeded down the street behind some other moving object, as shown by the impossibility of slowly, whose appearance for some reason reinforces the motion reading.

Why should this be? For the beginnings of an answer, compare the sentences in (16), (17), and (18).

(16)  
   a. \{The \{Some\} objections developed.  
       b. Sm objections developed.

(17)  
   a. \{The \{Some\} corn grew.  
       b. Sm corn grew.

(18)  
   a. \{The \{Some\} taxicabs followed.  
       b. Sm taxicabs followed.

All the above sentences are unambiguous. The "a" sentences, which contain quantified subject NP, mean only "change in form," "increase in size or maturity," and "proceed in back of." The "b" sentences, containing cardinality word determiners, mean only "arise," "exist rootedly," and "occur after," exactly as is the case in the corresponding ES. This suggests rather strongly that the disambiguation observed in the ES corresponding to (1b) - (18) is due to the inability of quantified NP to appear in ES.
If these facts are correct, the implication is that any verb which cannot occur with an unquantified subject will also not be able to appear in IV ES. If we apply this prediction to a range of verbs, it is apparently confirmed. *Arise, emerge, ensue, exist, begin, and occur,* for example, are correctly predicted to occur with unquantified subjects, since they are ES verbs. *Increase and continue,* which are impossible in ES, also require quantification in their subject NP. What one would like to ask now is if these considerations can also predict Kimball's observation that verbs of "ceasing to be" cannot appear in ES. In order for this to be the case, it would have to be true that such verbs cannot take unquantified subjects. This, unfortunately, does not seem to be the case. Thus, sentences like (19) are acceptable, yet the verbs involved do not occur in ES.

(19) a. Sm people died in that fire.
    b. A book vanished from this desk yesterday.
    c. Just as I walked in, a man left through the back door.

(20) a. *There died sm people in that fire.
    b. *There vanished a book from this desk yesterday.
    c. *There left several people.

It is important to note, however, that these are not disconfirming examples for the principle about ES verbs under investigation here. The form of this principle is an implication from appearance in ES to ability to take unquantified subjects: if the former, then the latter. The fact that there exist
verbs which can take unquantified subjects but cannot occur in ES merely means that the principle is not the only factor restricting the class of verbs in ES; it is correct, but incomplete.

Obviously, there is something interesting going on underneath this. One must ask what it is about the meaning of certain verbs which determines whether they can or cannot appear with unquantified "arguments." The notion of topic or "statement about" mentioned briefly above is certainly relevant in some way, but the nature of the principles involved here are at present beyond my ken.

7.3 Conclusion
In this brief and inconclusive chapter two things have been accomplished. It has been shown that ES formed on verbs other than be may be profitably divided into two subgroups, one of which behaves very much like other ES, and the other of which is different in essential ways from them. Also, a principle was suggested which partially accounts for the range of verbs which can appear in IV ES in terms of restrictions on the determiner structure of their subjects.
FOOTNOTES
CHAPTER 7

1. Notice that it will have to exclude the perfect auxiliary *have* and the members of MODAL if sentences like *there have people been here, *there may a rainstorm happen* are to be prevented. I think there may in fact be reasons for dividing up the auxiliaries of English this way, but I will not go into them here. It is interesting to note, by the way, that there is some evidence that the rule did not always make this distinction among verbals. In the King James version of Exodus 33:20, we find:

   Thou canst not see my face: for there shall no man see me, and live.

2. One way in which it would not, and for which I have absolutely no account, is shown in the following array:

   (i) There was a rainstorm.
   (ii) There began a rainstorm.
   (iii) There was a rock rolling down the hill.
   (iv) *There began a rock rolling down the hill.

3. Some people I have approached with these sentences do not think that would be a bad idea at all.

4. Not all verbs of this semantic class can appear in IV ES, unfortunately, as I mentioned in Chapter 1. Start, for instance, is inexplicably impossible.
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BIOGRAPHICAL NOTE

The author was born July 6, 1946, in Garden City, Michigan. Until the age of eighteen he lived in Pensacola, Florida, at which point he went to Indiana University to study the cello, but dropped out after a year, falling into the linguistics department. In addition to his work there and at M.I.T., he has studied at the University of Florida and the Universität Hamburg. He has an immoderate affection for chamber music, good beer, and the month of October.