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Some aspects of gerundials and infinitivals in English

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CHAPTER IV

GERUNDIALS AND INFINITIVALS

IN

DEEP STRUCTURE

IV. Gerundials and Infinitivals

in

Deep Structure

4.1. Introductory:

We have argued in the preceding two chapters that gerundials and infinitivals originate as embedded sentences and that these sentences are generated under the domination of the category NP. However, before stipulating a phrase structure rule to this effect, it will be rewarding to investigate the relationship holding between the various surface structure forms that a gerundial or an infinitival may assume, in particular the relationship holding between headed and headless gerundials and the one holding between headed and headless infinitivals. In this respect it is worth noting that headed gerundials and headed infinitivals behave typically like an NP, and that in almost all of their occurrences, they exhibit the characteristics of an NP, in particular with regard to their behaviour under transformations that are characteristically associated with noun phrases. In fact headed gerundials and headed infinitivals are susceptible to the various transformations enumerated in the preceding chapter.¹

However, it is not clear at all whether headed and

headless complements are the same kind of linguistic element, and whether there is any advantage in attempting to treat them as sub-types of essentially the same kind of syntactic structure. In fact, apart from some occasional and scanty notes, the relationship between headed and headless gerundials and infinitivals has not been investigated yet. It is our aim in this chapter to investigate the nature of this relationship, if any at all. To this end we will examine the relationship holding between the antecedent head-noun and the accompanying complement, and we will also investigate the syntactic similarities and differences that headless and headed complements exhibit. We will also discuss in some depth the pronoun it that often appears in the surface structure of sentences incorporating a noun phrase complement, in particular that-clauses and infinitivals. We will then discuss the notion complementizer and see how this can fit in a theory of noun phrase complementation. In dwelling in some detail upon the various differences between the two types of complement - i.e. headed versus headless - it is hoped to provide a partial answer to the issues raised in this paragraph.

4.2. Headed gerundials:

A headed gerundial consists of the sequence: head-noun + adjoining morpheme + gerundive complement. The morpheme that characteristically adjoins a gerundive complement to its antecedent head-noun is of:² viz.

- (1) a. The fact of John's having won the race
- b. The idea of interviewing the new students

(1) c. This business of doing research

There are, however, other morphemes that can adjoin a gerundive complement to its antecedent head-noun: viz.

(2) a. The danger in his having done this

b. The idea behind her asking for a meeting

c. The problem with John's getting a grant

A fairly reasonable range of lexical head-nouns appear in surface structure before noun phrase complements in different grammatical functions. The following is an illustrative list of lexical head-nouns that could be overtly followed by a gerundial construction:

- (3) account, act, action, advantage, agony, benefit,
business, chance, charm, circumstance, consequence,
custom, curse, danger, difficulty, disadvantage,
dream, effect, elegance, essence, evidence, fact,
fear, feat, feasibility, feeling, foolishness,
frustration, habit, hope, idea, importance, impossibility,
impression, inappropriateness, inelegance,
irrelevance, job, joke, knowledge, likelihood, means,
method, necessity, news, opportunity, plausibility,
pleasure, possibility, principle, privilege, problem,
process, recollection, relevance, report, responsibility,
result, sense, sign, statement, strain, task,
thought, threat, tidings, tragedy, unlikelihood,
value, validity, etc.

The first thing we notice about these nouns is that they

are abstract, in other words each noun carries the feature specification [- concrete]. Secondly, some of these nouns, in fact the majority, have corresponding verbal or adjectival counterparts, others do not.³ Before we proceed to examine the syntactic relationship that holds between a lexical head-noun and its accompanying complement, let us consider what kind of semantic relationship holds between the two.

4.2.1. Complement-head relation:

Consider first the following examples where the subject of the gerundive complement is expressed (we will be mainly concerned in this subsection with gerundive complements preceded by the morpheme of):

- (4) a. The fact of your having passed the exam is immaterial
b. The idea of his coming to Bangor infuriated Mary
c. The problem of his getting a grant is enormous
d. I ignored the fact of her being my sister

If we reflect for a moment on the examples in (4), it will not be difficult for us to discover the relationship holding between the antecedent head-noun and its accompanying complement. Lexical head-nouns of the type exemplified in (4) seem to determine and specify the sense of the accompanying complement. Thus the complement your having passed the exam in (4 a.) is recognised as a fact; his coming to Bangor in (4 b.) is recognised as an idea; his getting a grant in (4 c.) is recognised as a problem; etc. On the other hand, as the terminology suggests, a complement complements the sense and the

meaning of its antecedent head-noun. More precisely, a complement paraphrases and explicates its antecedent head-noun. Thus the head-noun the fact in (4 a.) is paraphrased by: your having passed the exam; and the head-noun the problem in (4 c.) is paraphrased by: his getting a grant, etc.

Consider now the following examples where the subject of the gerundive complement is suppressed:

- (5) a. The idea of spending his life in prison terrified him
- b. The strain of looking after five children is getting her down
- c. The task of cleaning the place out was enormous

If we wished to characterize in notional terms the internal relations of the noun phrases in which these gerundials are embedded, we might say that the gerundive complement specifies or makes explicit the head-noun with which it is connected. Alternatively, however, we could say that the head-noun determines the sense of the accompanying gerundive complement: we could say that in (5 a.): spending his life in prison is defined as an idea,⁴ that in (5 b.): looking after five children is defined as a strain,⁵ that in (5 c.): cleaning the place out is defined as a task, and so on. The complement-head relation embodied in these nominals in (4) and (5) might be compared to that in, say, the city of Bangor; looked at in one way, it seems that the complement noun Bangor serves to specify the head-noun city; but looked at in another way, it seems that the head-noun city establishes the sense of the complement noun Bangor (i.e. it tells us that

Bangor is a city).

This type of relationship between an antecedent lexical head-noun and its gerundive complement does not seem, however, to be characteristic of all the nouns enumerated in (3) above. In fact there are contexts where we find totally different relationships. Consider, for instance, the following examples:

- (6) a. The advantage of your having passed the exam lies in the fact that you will be able to get a grant
- b. The news of his having resigned was released yesterday
- c. The consequences of her having disobeyed the orders are negligible
- d. We were not aware of the relevance of your reporting the accident

Unlike the gerundive complement in (4 a.), the gerundive complement in (6 a.), which is morphologically identical with that in (4 a.), does not seem to paraphrase or expand its antecedent head-noun. On the other hand, unlike the head-noun fact in (4 a.), the head-noun advantage in (6 a.) does not seem to specify the sense of its accompanying complement. Notice that whereas (4 a.) can be paraphrased by:

(7) The fact is that you have passed the exam and this (i.e. that you have passed the exam) is immaterial sentence (6 a.) cannot be paraphrased by:

(8) *The advantage is that you have passed the exam and this (i.e. that you have passed the exam) lies in the fact that you will be able to get a grant

(6 a.) could be plausibly paraphrased by:

- (9) Your having passed the exam has an advantage and this advantage lies in the fact that you will be able to get a grant

Notice in passing that both fact and advantage are count nouns. But whereas (10) is acceptable, (11) is not: viz.

- (10) One advantage of your having passed the exam is that you can go home soon

- (11) *One fact of you having passed the exam is immaterial

Consider now the relationship holding between the antecedent head-noun the consequences and its gerundive complement in (6 c.) - i.e. her having disobeyed the orders. This relationship seems to be similar to that holding between the antecedent head-noun the advantage and its complement in (6 a.), but certainly it is different from that holding between the head-noun the fact and its gerundive complement in (4 a.). In fact (6 c.) could be paraphrased by:

- (12) Her having disobeyed the orders has consequences and these consequences are negligible

Thus it becomes obvious that the morpheme of that links a gerundive complement to its antecedent lexical head-noun can be employed in different senses. In one of these senses, the morpheme of might be equivalent to the putative verb be. For instance, in the phrase: the city of Bangor, the morpheme of could be substituted by is: cf. the city is Bangor. On a par with this we can argue that nominals like:

- (13) a. The fact of his having resigned

and:

(14) a. The problem of finding lecturers
can be paraphrased by (13 b.) and (14 b.) respectively; viz.

(13) b. The fact is his having resigned

(14) b. The problem is finding lecturers

In other contexts the morpheme of could be substituted by have. A phrase like: the window of the room might be paraphrased by: the window which the room has, and similarly, a nominal like:

(15) a. The consequences of her having disobeyed the
orders: cf. (6 c.)

is paraphraseable by:

(15) b. Her having disobeyed the orders has consequences

In this respect it seems that we can distinguish four or five types of lexical head-nouns that can be followed by a gerundive complement, the linking morpheme being of.

(i) Those head-nouns that serve to specify or identify the sense of the accompanying complement where the complement is an expansion or a paraphrase of the head-noun, and where the complement-head relationship could be characterized as:

(16) a. X is Y

or conversely as:

(16) b. Y is X

where X stands in for the head-noun and Y for the gerundive complement: cf.

(17) a. The fact of his having resigned

- (17) b. The fact is [he resigned]
c. [he resigned] is a fact

In this respect this group of lexical head-nouns could be classified into two sub-groups. The first sub-group comprises those nouns that are unlikely to be used in the plural when followed by a gerundive complement. Amongst these nouns are the following: act, action, business, fact, idea, theory, etc. Notice that while we may attest the (a) sentences in the following examples, we are unlikely to attest the (b) ones:

- (18) a. The action of crossing the river tired them out
b. *The actions of crossing the river tired them out
(19) a. The fact of his being a linguist should not count
b. *The facts of his being a linguist should not count

The second sub-group comprises some nouns which when followed by a gerundive complement can be either singular or plural. Amongst these nouns are: advantage, difficulty, disadvantage, privilege, etc. The relationship between these nouns when used in the singular and the accompanying complement is similar to the relationship holding between the nouns in the first sub-group and the accompanying complement, namely that of (16 a.) and conversely (16 b.): viz.

- (20) a. The privilege of being a professor
b. The privilege is being a professor
c. Being a professor is a privilege

If, on the other hand, the head-noun the privilege is in the plural, then the complement-head relation is altered. Consider, for instance, the following example:

(21) a. The privileges of being a professor

which could be paraphrased by (21 b.) rather than by (21 c.):
cf:

(21) b. Being a professor has privileges

c.*Being a professor is privileges

(ii) The second group of head-nouns that can be followed by a gerundive complement are nouns that have a corresponding adjectival counterpart. The relationship between the head-noun and the accompanying complement seems to be best viewed indirectly in terms of the adjectival-corresponding to the head-noun - and the complement rather than directly in terms of the head-noun and the complement. Amongst these head-nouns are: appropriateness, complexity, convenience, danger, disagreeability, disgracefulness, elegance, foolishness, frustration, importance, impossibility, inconvenience, inelegance, insignificance, irrelevance, nastiness, necessity, peculiarity, possibility, probability, relevance, wisdom, etc. Consider the following nominals:

(22) a. The importance of taking the exam

(23) a. The relevance of his meeting the students

The nominal in (22 a.) could be paraphrased by:

(22) b. Taking the exam has an importance

or more plausibly by:

(22) c. Taking the exam is important

but not by:

(22) d.*Taking the exam is importance

or by:

(22) c.*The importance is taking the exam

The same type of paraphrase applies to the nominal in (23 a.), for this nominal could be paraphrased by (23 b.) or (23 c.) but not by (23 d.) or (23 e.): viz.

- (23) b. His meeting the students has relevance
- c. His meeting the students is relevant
- d.*His meeting the students is relevance
- e.*The relevance is his meeting the students

Thus the complement-head relation could be accounted for in terms of the formula:

(24) Y is X-Adj

where Y stands in for the complement and X-Adj stands in for the adjective corresponding to the head-noun. Notice also that the nominal in (22 a.) could be paraphrased by (22 f.) and that the nominal in (23 a.) could be paraphrased by (23 f.) cf.

(22) f. Taking the exam is of importance

(23) f. His meeting the students is of relevance

This type of analysis does not, however, apply to all head-nouns listed in this group for notice that while:

(25) a. The possibility of his coming early
might be paraphrased by:

(25) b. His coming early is possible

it is not likely to be paraphrased by:

(25) c.*His coming early is of possibility

Admittedly, the analysis of the complement-head relation in terms of the formula in (24) runs into difficulties with

sentences like:

- (26) a. The danger of there being another earthquake in
San Francisco is very great

where the complement-head relation is unlikely to be
accounted for in terms of (24): viz.

- (26) b. *There being another earthquake in San Francisco
is dangerous

However, the complement-head relation in (26 a.) could be
accounted for in terms of the formula (16 a.) or (16 b.).
Thus it seems that the complement-head relation seems to vary
from one context to another.

(iii) In some contexts the function word of joining a gerund-
ive complement to its antecedent head-noun could be substituted
by about without loss of meaning. This is particularly true
when the morpheme of follows one of the following head-nouns:
evidence, knowledge, news, statement, report, etc. Consider
the nominal in the following sentence:

- (27) a. The news of his having resigned spread quickly

The relationship between the head-noun news and its accompany-
ing gerundive complement is certainly not that of X is Y nor
that of Y has X (again X stands in for the head-noun and Y
stands in for the complement), for we are unlikely to attest:

- (27) b. *His having resigned is the news⁶

or:

- (27) c. *The news is his having resigned

as possible paraphrases of the underlined nominal in (27 a.).

Nor are we likely to rephrase it by:

(27) d. *His having resigned has news

The nominal in (27 a.), as I understand it, could be paraphrased by:

(27) e. The news about his having resigned

(iv) In certain contexts the linking morpheme of could be substituted by for. This seems to be the case when a gerundive complement follows head-nouns like: method, technique, way, etc. Consider the following nominal:

(28) a. The new method of growing tomatoes

which could be plausibly paraphrased by:

(28) b. The ^{new} method for growing tomatoes

Notice that all types of paraphrase mentioned above would fail to account for the complement-head relation in this nominal: cf.

(28) c. *The new method is growing tomatoes

d. *Growing tomatoes is the new method

e. *Growing tomatoes has a new method

(v) There are some problematic head-nouns in the sense that it is not always easy to notionally characterize the semantic or syntactic relationship holding between the head-noun and the accompanying gerundive complement. Amongst these are nouns of senses like: feeling, impression, fear, sense, etc., and a few others like: essence, attitude, quality, etc. Consider, for instance, the following nominals:

(29) a. The feeling of being superior

b. The impression of being a doctor

- (29) c. The fear of failing the exam
- d. A sense of being guilty
- e. The essence of getting on well with people
- f. His attitude of being sarcastic
- g. The quality of being honest

The nominal in (29 g.) could be accounted for in terms of the formula Y is X: cf.

(30) Being honest is a quality

but this type of analysis does not apply to (29 c.), for instance, where the relationship between the head-noun and the gerundive complement seems to be a partitive one. Notice that we are unlikely to attest:

(31)* Having friends is an essence

or

(32)* Having friends has an essence

as possible paraphrases of (29 e.).

It could be the case that head-nouns followed by a gerundive complement derive from a more basic underlying structure where the head-noun has a verbal origin. Such a postulation could possibly account for many of the nominals in (29). Thus (29 a.), it could be argued, derives from the structure underlying:

(33) Someone feels + someone is superior

and (29 c.) derives from the structure underlying:

(34) Someone fears + someone fails the exam

This analysis could also possibly apply to (29 d.): cf.

(35) Someone senses + someone is guilty⁷

but certainly it does not apply to (29 e.) or to (29 f.) unless we hypothesize verbs like essences and attitudes, but such an analysis would fail to account for other occurrences of head-noun + gerundive complement like:

(36) The importance of getting up early

The facts presented above would certainly raise unsolvable problems for a transformational analysis of the construction: head-noun + linking morpheme + gerundive complement, for if we assume that gerundive complements that are preceded by lexical head-nouns are in deep structure embedded sentences, we have to complicate the grammatical apparatus in an undesirable way to account for the various relationships that could exist between a head-noun and its gerundive complement. Notice in this respect that we have only discussed gerundive complements that are adjoined to their antecedent head-nouns by means of the morpheme of. Secondly, we have noticed that in certain circumstances, a headed gerundial may be notionally rephrased in more than one way.

In fact it was basically such considerations that led Chomsky to adopt the 'lexicalist position' as opposed to the 'transformationalist position' to account for the derivation of certain types of nominal that were assumed in earlier works on transformational grammars to derive from underlying sentences.⁸ However, before we proceed to elaborate on the lexicalist position, it would be advantageous to see whether there

are any differences at all between the different types of nominal we have been examining, in particular between those where the gerundive complement has an expressed subject and those where the subject of the gerundive complement is suppressed.

4.2.2. Syntactic behaviour:

In this subsection we will examine the behaviour of headed gerundials under certain transformations in an attempt to see whether or not all the types of nominal we discussed in the preceding subsection belong to the same syntactic category. To this effect we will examine two nominals from each of the five groups we specified above: the first incorporating a gerundive complement with an expressed subject and the second incorporating one with a suppressed subject. Consider the following nominals:

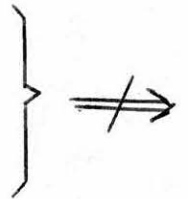
- (37) a. The fact of his having murdered the girl
- b. The idea of interviewing the students
- (38) a. The relevance of his crossing the river
- b. The importance of seeing the dentist
- (39) Evidence of his having stolen the money
- (40) The method of growing tomatoes
- (41) The essence of having friends

One of the tests that could plausibly show us whether these nominals are syntactically the same linguistic element or not is Ross's Complex NP Constraint. This constraint as formulated by Ross says: "No element contained in an S dominated by an NP with a lexical head-noun may be moved out of that NP by a

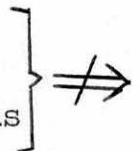
transformation."⁹

One of the transformations that moves an NP out of an S is Relativization, so let us see whether NP's incorporated in the nominals instanced in (37-41) can be relativized or not. Consider the following transformations where each of the nominals in (37-41) is embedded into an NP of an enclosing sentence where this NP is coreferential with the underlined NP in the enclosed sentence:

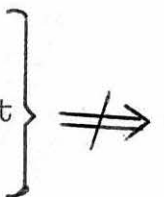
- (42) a. I do not know the girl
- b. The fact of his having murdered the girl is annoying
- c. *I do not know the girl who the fact of his having murdered is annoying



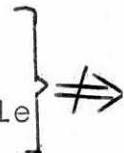
- (43) a. The students failed the exam
- b. The idea of interviewing the students pleased us
- c. *The students who the idea of interviewing pleased us failed the exam¹⁰



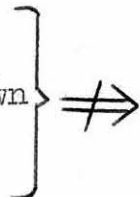
- (44) a. The river runs through Scotland
- b. The relevance of his crossing the river is not obvious
- c. *The river which the relevance of his crossing is not obvious runs through Scotland



- (45) a. The dentist arrived in Bangor last week
- b. The importance of seeing the dentist is undeniable
- c. *The dentist who the importance of seeing is undeniable arrived in Bangor last week



- (46) a. The money was kept in the drawer
- b. Evidence of his having stolen the money was shown yesterday



(46) c. *The money which evidence of his having stolen
was shown yesterday was kept in the drawer

(47) a. They do not like tomatoes

b. The new method of growing tomatoes is sophisticated } #⇒

c. *They do not like tomatoes which the new method of
growing is sophisticated

(48) a. Everyone needs friends

b. The essence of having friends is to be sociable } #⇒

c. *Everyone needs friends who the essence of having
is to be sociable

From these data we notice that it is not possible for an NP incorporated in a gerundive complement that is preceded by a lexical head-noun to be relativized irrespective of whether the subject NP of the complement is expressed or not, prima facie evidence that the various surface structure forms of a gerundive complement have a similar deep structure configuration, in particular with regard to the dominating category.

Another transformation that moves an NP out of a sentence is questioning - often referred to as Wh-Fronting. (Cf. Emonds, 1970: 145). This rule moves an NP to the front of the clause if it is introduced by a Wh element such as: who, what, which, when, where, why, how, whose, whether, and a few others (the Wh element may be preceded by a preposition). Now let us see if Wh-Fronting operates on NP's incorporated in a gerundive complement that is preceded by a lexical head-noun. Consider the following examples where the underlined NP's are preceded by Wh:

- (49) a. The fact of his having murdered Wh-girl is annoying \Rightarrow
 b. *Who is the fact of his having murdered annoying?
- (50) a. The idea of interviewing Wh-students pleased us \Rightarrow
 b. *Which students did the idea of interviewing please us?
- (51) a. I am not aware of the relevance of his crossing Wh-river \Rightarrow
 b. *Which river am I not aware of the relevance of his crossing?
- (52) a. The importance of seeing Wh-dentist is undeniable \Rightarrow
 b. *Who is the importance of seeing undeniable?
- (53) a. His method of growing Wh-tomatoes is popular \Rightarrow
 b. *What is his method of growing popular ?
- (54) a. The essence of having Wh-friends is to be sociable \Rightarrow
 b. *Who is the essence of having to be sociable?

From the examples in (49-54) we notice that it is not possible for an NP incorporated in a gerundive complement that is preceded by a lexical head-noun to be moved out from its original position by Wh-Fronting irrespective of whether the subject of the gerundive complement is expressed or not.

If Ross's Complex NP Constraint is valid - and since there is no empirical evidence to contradict it, we assume that it is - all occurrences of the nominal under investigation can be represented by the type of configuration specified by Ross, namely an NP dominating both an NP and an S: viz.



If these observations are correct, then the grammar should contain a phrase structure rule of the form:

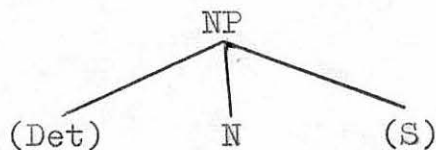
(56) $NP \rightarrow NP \text{ } \bar{\text{S}}$

However, in the following subsection we will see whether (56) could satisfactorily account for all the occurrences of the nominal under discussion and whether such a rule could be generalized to account for other types of nominals.

4.2.3. Deep structure configuration:

In fact there have been different proposals in the transformational literature concerning the recursion of the category S under the immediate domination of the category NP. This is partially so because the recursion of the category S under the immediate domination of the category NP provides the source for at least two functionally distinct surface structure forms: namely, NP complements and restrictive relative clauses. Different approaches have been suggested to distinguish between the two sentence-types by means of the phrase structure rules of grammar. The following set of configurations summarizes the different views:

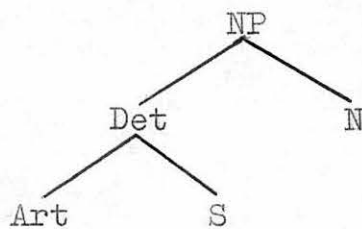
(57) a.



e.g. the fact that he was guilty

cf: Chomsky, 1965; Emonds, 1970; Rosenbaum, 1967.a; Rosenbaum, 1967.b.¹¹

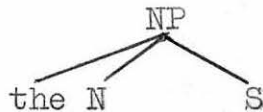
(57) b.



e.g. the man who persuaded John

cf. Chomsky, 1965; Smith, 1964; Katz and Postal, 1964; Stockwell, et al, 1968

c.



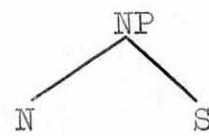
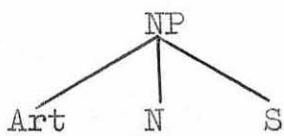
e.g. (i) The man who has just left

(ii) The report that tuition was going up

cf. Langendoen, 1969; Wigzell, 1969

d. (i)

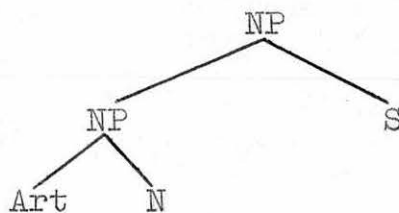
(ii)



e.g. The fact that Ricky came late

cf: Jacobs and Rosenbaum, 1968

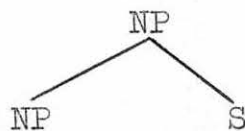
e.



e.g. The boy who I saw

cf. Jacobs and Rosenbaum, 1968

f.



e.g. (i) The boy who I saw

(ii) The claim that John had lied

cf. Ross, 1968¹²

As may be seen from these configurations, some linguists distinguish between embedded sentences underlying a restrictive relative clause and those underlying a noun phrase complement. On the other hand, there are linguists who do not draw such a distinction. In what follows we will endeavour to investigate the advantages and disadvantages of each of the aforementioned proposals. Before doing this, however, it would be convenient to note one or two points relevant to the issue under discussion, namely the incorporation of the category S in the phrase structure rules of grammar. First, we have argued in Chapter III that the category S could only be dominated by the category NP. In fact it has been suggested by Sandra Thompson that all occurrences of non-topmost S's not immediately dominated by S be limited to unique expansions of subject or object NP's. (Cf. Thompson, 1970.a: 30-2). Secondly, there are various syntactic and semantic differences between restrictive relative clauses and noun phrase complements which would mean that they cannot be treated as similar syntactic constructions and therefore that they cannot have the same deep structure representation. The difference between the following two nominals:

(58) a. The idea that we should go to London

b. The idea that you mentioned

is clearly that, in the first that is a complementizer while in the second it is a relative word, a replacive for another occurrence of idea. This correlates with the fact that they do not conjoin, for witness the unacceptability of:

(59) * The idea that we should go to London and that you mentioned

Thus, although (58 a.) and (58 b.) may look similar, they are not structurally identical. Sandra Thompson (1970.a: 31) points out that the structural difference correlates with the fact that relative clause noun phrases, like:

(60) The dog that they bought

and noun-complement phrases such as:

(61) The idea that she is a mother

normally receive different intonation patterns. Notice in this respect that the following phrase:

(62) The fact that he remembered

is ambiguous for that may be a relative pronoun representing the direct object of remember, and as such referentially identical with the antecedent head-noun the fact, or it could be the complementizer introducing the sentence: he remembered. However, this ambiguity might be resolved in the spoken language by using different intonational patterns. Thirdly, while we can insert a copula between the head-noun and its complement in (58 a.) to produce the acceptable sentence:

(63) The idea is that we should go to London¹³

we cannot do this to (58 b.), for witness the unacceptability of:

(64) *The idea is that you mentioned

Thus there seems to be some motivation for distinguishing between embedded sentences underlying restrictive relative clauses and those underlying noun phrase complements. Let us first consider the proposals that distinguish in the phrase structure rules between the two types of embedded sentence.

Jacobs and Rosenbaum (1968) account for the distinction between embedded sentences underlying restrictive relative clauses and those underlying NP complements by generating each S in a different phrase structure rule. (Cf. Jacobs and Rosenbaum, 1968: 177, 199). The S providing the source for a restrictive relative clause - they argue - shares the constituency of the dominating NP with a preceding NP: viz.

(65) NP \longrightarrow NP $\hat{\ } (S)$

while the sentence providing the source for a noun phrase complement shares the constituency of the dominating NP with a preceding N and a preceding ART: cf.

(66) NP \longrightarrow ART $\hat{\ } N \hat{\ } S$

They argue that the relativization process involves the identity of an NP in the embedded sentence with an NP outside of the embedded sentence to its left. If this is true, then (66) would have to fail as a plausible candidate for the deep structure of a relative clause, since to the left of the embedded sentence is not an NP but an N. So they claim that relative clauses together with their antecedent NP's are analyzed as noun phrases which (themselves) contain an NP followed by an S. Nonetheless, they admit that their arguments are far from conclusive. In particular, the phrase structure rule (65) is suspect since there is no sense in which that NP inside of the dominating NP behaves like a noun phrase. In fact it is the antecedent head-noun (and its determiner and other modifiers) together with the modifying clause that behaves like an NP under transformations. Notice, for instance, the behaviour of restrictive relative clauses under Passivization:

- (67) a. Everyone knows the boy who won the game
b. The boy who won the game is known by everyone
c. *The boy is known by everyone who won the game

The unacceptability of (67 c.) shows that at the point where Passive applies the boy is not exhaustively dominated by an NP.¹⁴ However, the unacceptability of (67 c.) could be accounted for in terms of Ross's "Left Branch Condition on Pied Piping", namely "No NP which is the leftmost constituent of a larger NP can be reordered out of this NP by a transformational rule" (cf. Ross, 1968: 114). A careful study, however, shows us that the antecedent head-noun that is followed by a restrictive clause does not behave like an NP. First, the head-noun cannot occur in the focus position in a cleft sentence: viz.

- (68) a. I met a man who came from Llandudno
b. *It was a man that I met who came from Llandudno: cf.
c. It was a man who came from Llandudno that I met

Secondly, under Pronominalization it is the string comprising both the antecedent head-noun and the accompanying restrictive relative clause that gets pronominalized and not the antecedent head-noun on its own. Consider, for instance, the following sentence:

- (69) Ken says that he doesn't know the man who seduced Jean and I don't know him either

where him stands in for: the man who seduced Jean and not for the antecedent head-noun the man. Jacobs and Rosenbaum's phrase structure rule (66) will now be discussed together with the one proposed by Chomsky (1965) for generating noun phrase complements.

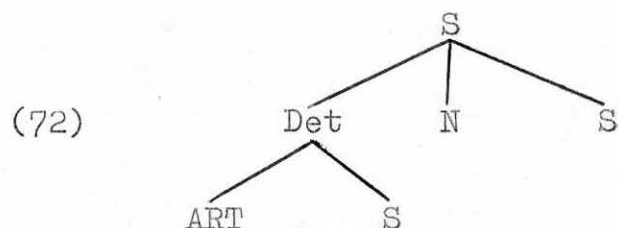
Chomsky (1965) distinguishes between embedded sentences underlying a restrictive clause and those underlying an NP complement by postulating two phrase structure rules. The first of these expands Det into: ART and S, where the S underlies a restrictive relative clause: viz.

(70) Det \rightarrow ART $\bar{\wedge}$ S

This analysis is also adopted by Carlota Smith (1964), Katz and Postal (1964) and Stockwell et al(1968). The second phrase structure rule expands the category NP into the following constituents: an optional Det, an N, and an optional S, where the S provides the source for a noun phrase complement: viz.

(71) NP \rightarrow (Det) $\bar{\wedge}$ N $\bar{\wedge}$ (S)

It has since been pointed out that a serious disadvantage of this analysis is that it predicts the formation of nominal structures of the type:



incorporating both a restrictive clause and a noun phrase complement, which are incompatible (cf. Wigzell, 1969: 2), e.g.

- (73) a. *The fact which I remembered that he is a linguist
is immaterial
b. *The fact that he is a linguist which I remembered
is immaterial¹⁵

However, consideration of nominals like:

(74) The annoying fact of his having murdered his wife

where the antecedent head-noun fact is preceded by the adjective annoying, seems to suggest that it is not the case that restrictive relative clauses and noun phrase complements are always mutually incompatible, for if we assume that some attributive adjectives occur predicatively in deep structure, then (74) is derived from the structure underlying:

(75) The fact of his having murdered his wife + the
fact is annoying

through the application of a series of transformations, namely: Relativization, Whiz-Deletion, and Adjective-Preposing.¹⁶ However, it is most likely that the preposed adjective annoying in (74) is the remnant of a contracted non-restrictive rather than a restrictive relative clause. A preposed adjective that results from the reduction of a restrictive relative clause usually carries a major stress whereas the one that results from the reduction of a non-restrictive relative clause usually does not. (Cf. Mukattash, 1969: 75). Now witness the acceptability of (76 a.) and the unacceptability of (76 b.):

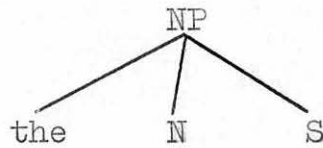
- (76) a. The annoying fact of his having murdered his
wife should make no difference
b.*The [^]annoying fact of his having murdered his
wife should make no difference

This is evidence that the adjective annoying in (74) is a remnant of a non-restrictive relative clause. If this is so, then the configuration in (72) is suspect.

The other two approaches are those of Langendoen (1969) and Ross (1968) respectively. Langendoen's contention is that the S in the following configuration provides the source for

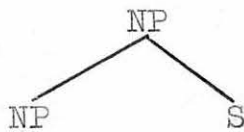
either a restrictive clause or a noun phrase complement:

(77)



On the other hand, Ross postulates that the embedded S in the following configuration could underlie either a restrictive clause or a noun phrase complement:

(78)



We have argued that the configuration in (78) is theoretically suspect since there is no sense in which the NP inside the dominating NP behaves like a noun phrase. Thus we are left with Langedoen's proposal that restrictive clauses and noun phrase complements are derived from embedded sentences that share the constituency of the dominating NP with a Det and an N (cf. Chomsky's rule: $NP \rightarrow (Det) \wedge N \wedge (S)$). In fact, greater simplicity would obviously accompany an analysis which postulates a single S under the domination of an NP, this S providing the source for either a restrictive relative clause or a noun phrase complement. Our description, moreover, would not be impoverished to any significant extent by this economy, for the reference-identity between the two NP's in the case of Relativization would ensure that the two types of S-constituent are differentiated at the deep structure level. Thus given a matrix sentence like:

(79) The fact should make no difference

and an embedded sentence like:

(80) He remembered the fact

with (80) embedded into the highest NP in (79), we could, if the two NP's the fact in (79) and (80) are specified as co-referential, generate the following string by relativizing the NP the fact in the embedded sentence:

(81) The fact which he remembered should make no
difference

If, on the other hand, the two NP's the fact in (79) and (80) are not specified as coreferential, the relativization of the NP the fact in (80) will be blocked. Nonetheless, the embedded sentence in (80) could be converted into a noun phrase complement as in:

(82) The fact₁ that he remembered the fact₂ should
make no difference

or possibly as in:

(83) The fact₁ of his remembering the fact₂ should
make no difference

It should be noted, however, that this move is only possible if the N in the matrix sentence is positively specified both for a restrictive clause and for a noun phrase complement. This seems to apply only to nouns that carry the specification feature [- concrete], for concrete nouns cannot be followed by a sentential complement.¹⁷ Thus it is possible that by adopting this simpler analysis, we would be unable to distinguish by strict subcategorization in the Chomskyan sense the class of nouns that accept a sentential complement from those that do not. If we were to subcategorize nouns in terms of

the contextual feature: [——— S], we should deprive all nouns that are negatively specified with respect to this feature not only of a sentential complement but also of a restrictive relative clause and vice versa. This is not, however, a serious problem, for by subcategorizing each noun that could be followed by an S into [Det ——— S] and [——— S], there would be evidence from the embedded sentence whether the S that is embedded into the NP that dominates the categories Det and N meets the structural description of Relativization or not (i.e. coreferentiality of two NP's). Of course, there will be no way of preventing an S being generated on a noun which is negatively specified with respect to all complementation features - i.e. [± that], [± for-to] and [± 's-ing] - but if that S does not meet the conditions for Relativization, the boundary symbols $\#$ will remain and the resultant string will thus be marked as ungrammatical. In fact it has been pointed out by Chomsky that not all generalized phrase markers generated by the base will underlie actual sentences and thus qualify as deep structures. (Cf. Chomsky, 1965: 137). What then is the test that determines whether a generalized phrase marker is the deep structure of some sentence? The transformational rules provide exactly such a test for they act as a filter that permits only certain generalized phrase markers to qualify as deep structures.

Attractive as it might seem, the proposal that restrictive relative clauses and noun phrase complements are generated by the same phrase structure rule has its own shortcomings. First, this formulation does not account for the fact that

restrictive relative clauses and noun phrase complements are functionally and structurally different. Secondly, under this analysis we will not be able to account in a satisfactory way for the selectional restrictions between determiners and restrictive relative clauses, for not all noun phrases can be followed by a restrictive relative clause, the determining factor being the degree of the definiteness of the determiner preceding the noun. We will argue in an ensuing section - cf. 4.6. - that there is a rule in English and possibly in other languages that generates complementizers with S's. There are contexts where this complementizer is obligatorily deleted. For instance, it is obligatorily deleted in topmost S's. It is also deleted if an embedded sentence undergoes Relativization. Thus it would be difficult to account for the deletion of the complementizer in relativized sentences without complicating the base component. However, these facts and many others which are difficulties for the phrase structure rule:

$$(84) NP \longrightarrow (\text{Det}) \frown N \frown (S)$$

will follow naturally from an alternative phrase structure rule for generating restrictive relative clauses, namely that stipulated by Chomsky and others: viz.

$$(85) \text{Det} \longrightarrow \text{ART} \frown S$$

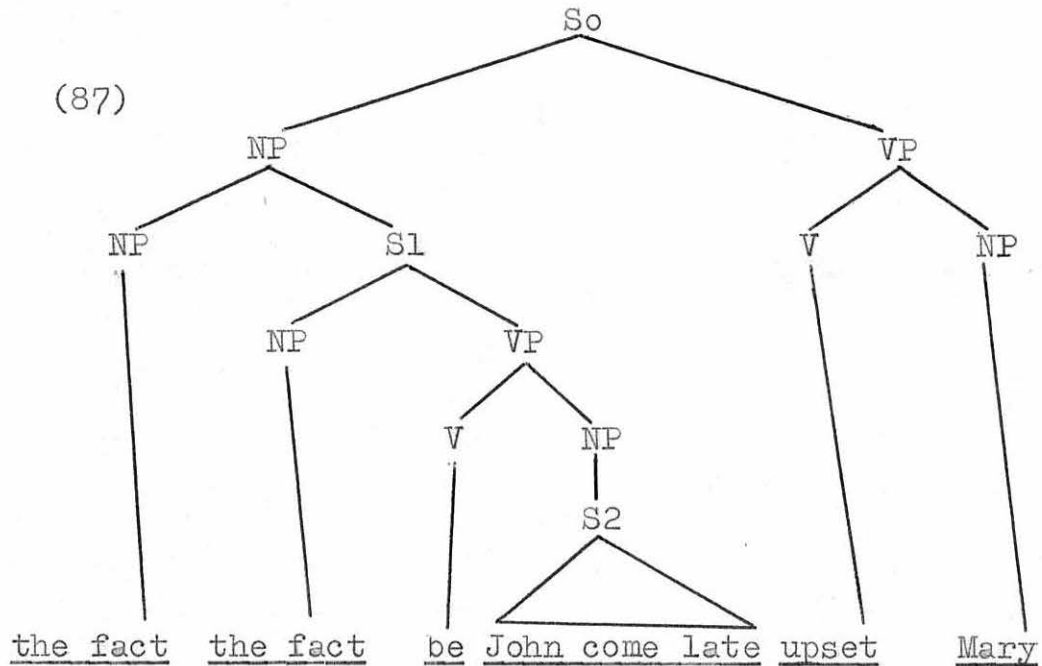
Thus it is our contention that there should be a distinction in deep structure between embedded sentences underlying restrictive relative clauses and those underlying a noun phrase complement.

In spite of the differences between a noun phrase com-

plement and a restrictive relative clause, Stephen Anderson argues that a noun phrase complement originates as a restrictive relative clause in deep structure. (Cf. Anderson, 1968: VI-9). Thus a sentence like:

(86) The fact that John came late upset Mary

would have - under this analysis - as its deep structure something like:



Sentence (86) would derive from (87) by the application of two transformations: first, Relativization would apply to the subject NP of S1 (i.e. the fact) to yield the ungrammatical string:

(88)*The fact which is that John came late upset Mary

Secondly, the obligatory application of Whiz-Deletion would yield (86). In fact this analysis is suspect for various reasons. First, we have seen that in many cases the relationship between an antecedent head-noun and its accompanying complement cannot be accounted for in terms of the formula:

(89) X is Y

where X stands in for the head-noun and Y for the complement. Secondly, if we assume that NP complements originate in deep structure as predicates of the head-noun, then we would be led to expect the predicate (i.e. the complement) to impose specifications on the head-noun. In fact it is the head-noun that imposes feature specifications on the complement but not vice versa. In this respect it has been pointed out by Langendoen (1969: 47-8) that if an NP consists of an N and a relative clause, then all the semantic features imposed on that N by the verb or the adjective in the relative clause are projected onto the NP. On the other hand, in a nominal like:

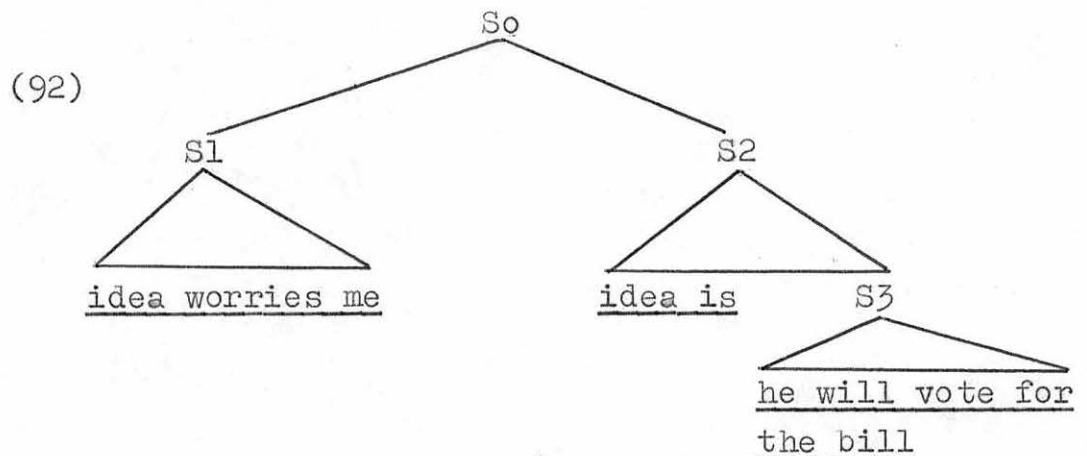
(90) The report that tuition was going up again in the
fall

the noun report imposes feature specifications on the that-clause and not vice versa, for the that-clause is understood as having been reported. Thirdly, by treating NP complements as restrictive relative clauses we have to formulate certain rules that do not normally apply to restrictive relative clauses. In the syntax of restrictive relative clauses the application of Whiz-Deletion is never obligatory except when it is followed by another obligatory rule that preposes the remnants of certain types of relative clause (cf. footnote 16). If we adopt the analysis proposed by Anderson, then we need to have an obligatory rule of Whiz-Deletion on condition that it is not followed by any other rule operating on the relative clause.

Noun phrase complements are sometimes referred to as appositive clauses and one might wish to argue that an NP com-

plement originates in the deep structure as a non-restrictive relative clause (i.e. a conjoined sentence). In fact, it has been argued by Sandra Thompson (1970.a: 36) that NP complements originate in deep structure as conjoined but not embedded sentences. A sentence like:

(91) The idea that he will vote for the bill worries me according to her analysis is derived from a deep structure like (92): cf.



A careful study of the two types of construction will, however, convince us that NP complements and non-restrictive relative clauses display significant syntactic-semantic differences. Consider, for instance, the following two sentences:

(93) The assumption that he was sick is false

(94) The assumption, which John made, is false

Apart from orthographic differences (i.e. the relative clause in (94) is closed between two commas whereas the NP complement in (93) is not), (93) and (94) differ in a number of syntactically relevant respects. First, while we can insert a copula between the head-noun and its complement in (93) to produce the acceptable sentence (cf. footnote 13):

(95) The assumption is that he was sick
we cannot do this to (94), for witness the unacceptability of:

(96)*The assumption is which John made

Secondly, non-restrictive relative clauses do not seem to occur in the object position of a declarative sentence containing a negative particle. If the object of the verb has a non-restrictive clause, then the sentence cannot be negated; alternatively if the sentence has been negated, the object cannot be followed by a non-restrictive relative clause. (Cf. Smith, 1964: 37-52). Witness the unacceptability of the following sentences:

- (97) a.*I did not study at the college, which is in Bangor
b.*He did not eat the apples, which you bought yesterday
c.*I do not know Mr.Hughes, who is the registrar

In contradistinction to non-restrictive relative clauses, noun phrase complements can occur quite comfortably within the scope of negation. Witness the acceptability of the following sentences where the noun phrase complement occurs in the object position and where the matrix sentence incorporates the negative particle not:

- (98) a. She did not recognise the fact that you were sick
b. She has not abandoned her habit of interrupting
c. They would not approve of your plan to visit Italy

The block on non-restrictive relative clauses includes other negative or semi-negative elements such as: rarely and never:
cf.

- (99) a. *John rarely waters the trees, which he planted
last month
b. *We never go to the refectory, which is too far
from the college

Noun phrase complements, on the other hand, may occur in sentences embodying these elements: cf.

- (100) a. He will never recognise the fact that he is
mistaken
b. She rarely shows her willingness to co-operate

Thirdly, it has been argued by Carlota Smith that non-restrictive relative clauses cannot modify noun phrases within the scope of questions. In other words, certain question transformations and non-restrictive Relativization are mutually exclusive. Smith points out that the question transformations involved are those whose scope extends over the whole predicate of a sentence. Witness the unacceptability of the following sentences:

- (101) a. *Did you study at the college, which is in Bangor?
b. *Have you met John, who is a lecturer?

This block is not operative on noun phrase complements for witness the acceptability of the following sentences:

- (102) a. Do you recognise the fact that she was sick?
b. Have you considered the idea of going to Italy?

There is a fourth syntactic distinction between NP complements and non-restrictive relative clauses, namely that non-restrictive clauses are seemingly immune to Extraposition from an NP, that is separation from the head-noun (cf. Ross, 1968: 8-15)

whereas, in most cases, NP complements are not. The underlined non-restrictive relative clause in, say:

(103) Mary, who you met last night, is here

is unlikely to be separated for the antecedent head-noun

Mary: viz.

(104) * Mary is here, who you met last night

Here are some more examples:

(105) a. John, who is a linguist, could not disambiguate
this sentence \Rightarrow

b. *John could not disambiguate this sentence, who is
a linguist

(106) a. Jane, who failed the exam, left the college \Rightarrow

b. *Jane left the college, who failed the exam

NP complements, on the other hand, seem to be sensitive to this transformation. Sentence (107 b.) and (108 b.) sound more acceptable than (105 b.) and (106 b.): viz.

(107) a. The fact that he is a negro is of no importance \Rightarrow ?

b. ?The fact is of no importance that he is a negro

(108) a. The task of looking after five children was
tremendous \Rightarrow ?

b. ?The task was tremendous looking after five children:
cf.

c. The task was tremendous, looking after five children

(107 b.) and (108 b.) might sound unacceptable to some speakers, but to others they are quite acceptable, particularly if the extraposed complement is separated from the rest of the sentence by a comma. Most speakers find (108 c.) quite acceptable. Certainly (107 b.) and (108 b.) are not as bad as (105 b.) or

(106 b.).

The above-mentioned facts indicate that a noun phrase complement cannot originate in deep structure as a non-restrictive relative clause (i.e. a conjoined sentence). Moreover, a careful study of the relationship that exists between an embedded sentence and an enclosing one will lend credibility to our claim. Any sentence containing a non-restrictive relative clause could be easily split into two independently interpretable and acceptable sentences, a containing and a contained sentence: viz.

- (109) a. John, who is a solicitor, lives in Bethesda
b. John lives in Bethesda
c. John is a solicitor

This process does not seem to apply to sentences incorporating an NP complement, which is evidence that an NP complement does not originate in deep structure as a non-restrictive relative clause: viz.

- (110) a. The fact that he never turned up upset Mary
b. ?The fact upset Mary
c. The fact is that he never turned up

It is noteworthy in this respect that the actual distribution of the different types of NP complements does not exactly coincide with that of the associated lexical head-noun, there being environments where the NP complement can occur but not the associated head-noun and vice versa. We will return to discuss this issue in the following chapter. Notice further that if we were to ask this question about (109 a.):

(111) Who lives in Bethesda?

we would expect to have as an answer: John, but not: John, who is a solicitor. On the other hand, if we were to ask the question:

(112) What upset Mary?

about (110 a.), we would expect to have as an answer: the fact that he never turned up but not the fact.

To sum up the argument in this subsection, we have seen that (i) NP complements cannot originate in deep structure as restrictive relative clauses; (ii) NP complements cannot originate in deep structure as conjoined sentences that get converted into non-restrictive relative clauses, and (iii) NP complements and restrictive relative clauses should be generated in deep structures by means of different phrase structure rules. In this respect, we have suggested that the embedded sentence underlying a restrictive relative clause is an expansion of the category Det: viz.

(113) Det \rightarrow ART $\bar{\ } (S)$

whereas the sentence underlying a noun phrase complement is an expansion of the category NP: viz.

(114) NP \rightarrow (Det) $\bar{\ } N \bar{\ } (S)$

4.3. Headed infinitivals:

Like gerundive complements, infinitival complements can be preceded by a lexical head-noun. However, unlike gerundive complements, infinitival complements do not require a linking

morpheme to adjoin them to their antecedent head-noun. This applies both to infinitivals with an expressed subject and to those with a suppressed one: cf.

- (1) a. The opportunity for John to leave
b. The plan to rebuild the school

A fairly reasonable range of lexical head-nouns appears in surface structure before infinitival complements. The following is an illustrative list:

- (2) ability, action, attempt, battle, chance, command,
consent, desire, determination, eagerness, effort,
experiment, failure, fear, hope, inclination, in-
struction, intention, means, move, notice, oppor-
tunity, order, plan, preparation, promise, pro-
posal, recommendation, resolution, suggestion, ten-
dency, unwillingness, willingness, wish, etc.

The first thing we notice about these head-nouns is that, like head-nouns that precede gerundive complements, they are specified as [- concrete], cf. footnote 17. Secondly, they seem to fall into three groups: (i) those head-nouns that have corresponding adjectives which, like the nouns, can be overtly followed by an infinitival complement: e.g.

- (3) a. He was willing to see you
b. His willingness to see you

(ii) those head-nouns that have corresponding verbs that can, like the head-noun, be followed by an infinitival complement:

- (4) a. She attempted to commit suicide
b. Her attempt to commit suicide

and (iii) those head-nouns that have no corresponding verbs or adjectives: e.g.

(5) His effort to help the girl

Thirdly, these head-nouns could be further distinguished according to whether or not the accompanying infinitival may have an expressed subject. Consider the following data:

(6) a. The opportunity for John to leave

b. The opportunity to leave

(7) a. The ability to see beyond things

b. *The ability for John to see beyond things: cf.

c. John's ability to see beyond things

It is not clear at all whether the two underlined constructions in (6 a.) and (6 b.) and the other two in (7 a.) and (7 c.) are the same syntactic element or not. In what follows we will investigate the similarities and differences (if any) between the type of construction instanced in (6 a.) and that instanced in (6 b.) and between the type of construction instanced in (7 a.) and that instanced in (7 c.). We will also try to establish the syntactic-semantic relationships that hold between the antecedent head-noun and the accompanying infinitival. Finally, we will see whether there are any similarities between headed gerundials and headed-infinitivals.

4.3.1. Complement-head relation:

It seems that the relationship between an infinitival complement and its antecedent head-noun is not always the same. In fact we can recognise different types of relationship. In

this respect we can categorize lexical head-nouns that can be followed by an infinitival complement into the following groups:

(i) The first group of head-nouns exhibits the relationship: X is Y, where X stands for the antecedent head-noun and Y for the infinitival complement. Consider, for instance, the following examples:

- (8) a. The government's action to stop immigration
- b. Their effort to save the child
- c. His plan to rebuild the school

which could be paraphrased in terms of the formula: X is Y: cf.

- (9) a. The government's action was to stop immigration
- b. Their effort was to save the child
- c. His plan was to rebuild the school

It is noteworthy that (9 c.) could also be paraphrased by:

- (10) He planned to rebuild the school

and (8 b.) by:

- (11) They made an effort to save the child

since there is no corresponding verb to the noun effort. However, this type of analysis does not seem to apply to (8 a.) since we are unlikely to attest either:

- (12)*The government made an action to stop immigration
- or

- (13)*The government actioned to stop immigration

However, we are likely to attest:

- (14) The government acted to stop immigration

but it is doubtful whether (14) is a paraphrase of (8 a.). In fact (14) could be plausibly paraphrased by:

(15) The government acted in order to stop immigration
Notice also that the following sentence:

(16) All his effort was to save the child: cf. (8 b.)
could be plausibly paraphrased by:

(17) All his effort was in order to save the child

(ii) The second group of head-nouns comprises those that have corresponding adjectives. The relationship holding between these head-nouns and the accompanying complement is better viewed indirectly, in terms of the adjective corresponding to the head-noun. Thus:

(18) a. His eagerness to please¹⁸
could be plausibly paraphrased by:

(18) b. He is eager to please

By way of further exemplification consider the following two pairs of sentences:

(19) a. His willingness to co-operate

b. He is willing to co-operate

(20) a. Her readiness to negotiate

b. She is ready to negotiate

(iii) The third group of head-nouns comprises nouns that have corresponding verbs. The relationship between the head-noun and its accompanying infinitival is best viewed as basically the same one holding between the corresponding verb and the accompanying infinitival. Consider the following data:

- (21) a. His refusal to come
 - b. He refused to come
- (22) a. Their attempt to bluff the candidate
 - b. They attempted to bluff the candidate

Although some of these head-nouns fit properly in the first group, where the head-complement relationship could be accounted for in terms of the formula: $X \text{ is } Y$, others do not. Notice that whereas (22 b.) could be paraphrased by:

(23) Their attempt was to bluff the candidate

we are unlikely to attest:

(24)*His refusal was to come

as a paraphrase of (21 a.).

Two more points need to be mentioned in this respect. First, the analysis of the type of construction instanced in (21 a.) and (22 a.) in terms of constructions like (21 b.) and (22 b.) respectively does not seem to be true of all headed infinitivals whose head-noun has a corresponding verb or adjective. We have assumed that a nominal like:

(25) a. His eagerness to please

is a transform of:

(25) b. He is eager to please

On a par with (25 a.), we should expect:

(26) a. He is likely to win the race

to be transformed into a nominal like the one instanced in (25 a.) - i.e. a head-noun + an infinitival complement. But

this does not seem to be the case, for witness the unacceptability of:

(26) b. *His likelihood to win the race

Secondly, there seems to be some difference between head-nouns followed by an infinitival complement whose subject is expressed and those followed by a subjectless infinitival complement. The two types are exemplified by (27 a.) and (27 b.) respectively:

(27) a. The attempt to rebuild the school

b. The opportunity for John to leave

However, it is imperative to find syntactic justifications for this notional categorization. Thus we should investigate the behaviour of the two types of nominal under various transformations, in particular those which we have applied to gerundive complements in 4.2.2. above, namely Relativization and Wh-Fronting.

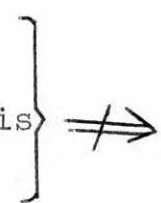
4.3.2. Syntactic behaviour:

First, let us see whether it is possible for an NP incorporated in an infinitival complement that is preceded by a lexical head-noun to be relativized or not. Consider the following data where the subject of the infinitival is expressed:

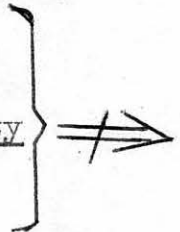
(28) a. The boy comes from Liverpool

b. The opportunity for the boy to pass the exam is slim

c. *The boy who the opportunity (for) to pass the exam is slim comes from Liverpool

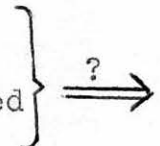


- (29) a. The city is not far from Dacca
- b. The command for the troops to bombard the city was given on Friday
- c. *The city which the command for the troops to bombard was given on Friday is not far from Dacca

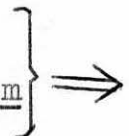


Thus it does not seem to be possible for an NP incorporated in an infinitival complement whose subject is expressed to be relativized. Now consider the following data where the subject of the infinitival complement is not expressed:

- (30) a. The school is not far from here
- b. The plan to rebuild the school did not succeed
- c. ?The school which the plan to rebuild did not succeed is not far from here¹⁹



- (31) a. The room was built last year
- b. He expressed his willingness to decorate the room
- c. The room which he expressed his willingness to decorate was built last year



Sentence (31 c.) is perfectly acceptable but the acceptability of (30 c.) is doubtful. However, though the acceptability of (30 c.) is questionable, certainly it sounds more acceptable than (28 c.) or (29 c.). Sentence (30 c.) is also more acceptable than sentences incorporating a relativized NP that is a constituent of a gerundive complement in deep structure. Compare (30 c.) to:

- (32) *The girl who the fact of his having murdered upsets Mary comes from Manchester

In fact it is not impossible to linguistically contextualize (30 c.), though it is always possible to think of other ways to

express the information imparted by this sentence. Also there is no doubt that the relative clause in (30 c.) could be used in a non-restrictive as well as in a restrictive sense. Thus it seems to be the case that Ross's Complex NP Constraint applies only to infinitival complements with an expressed subject but not to subjectless infinitival complements.

Now let us see if Wh-Fronting operates on NP's contained in an infinitival complement that is preceded by a lexical head-noun. Consider the following data, where the subject of the infinitival is expressed:

(33) a. The opportunity for wh-boy to come early is
non-existent \Rightarrow

b. *Who is the opportunity (for) to come early
non-existent?

(34) a. The proposal for the lecturers to meet wh-students
is feasible \Rightarrow

b. *Who is the proposal for the lecturers to meet
feasible?

Now consider the following examples where the subject of the infinitival complement is not expressed:

(35) a. She did not approve of my attempt to criticize
wh-professor \Rightarrow

b. Which professor didn't she approve of my attempt
to criticize?

(36) a. He expressed a desire to meet wh-students \Rightarrow

b. Which students did he express a desire to meet?

(37) a. The plan to build a wh-hospital is a good idea \Rightarrow

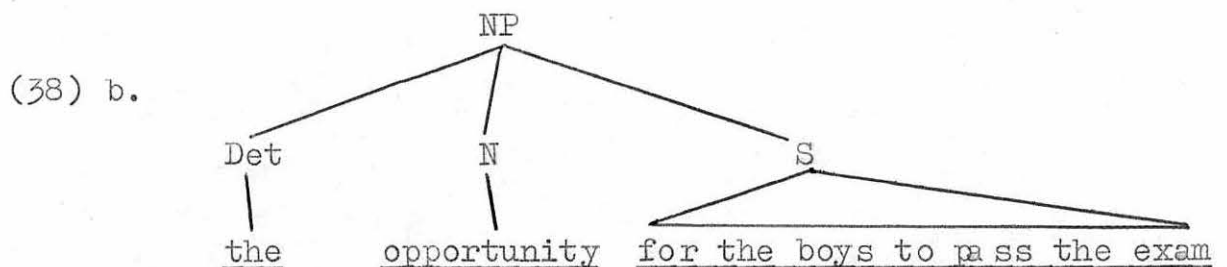
b. *What is the plan to build a good idea?

From the examples in (33 b.) and (34 b.) we notice that constituents contained in an infinitival complement whose head is expressed are immune to Wh-Fronting. On the other hand, the examples in (35 b.), (36 b.) and (37 b.) show that constituents contained in a subjectless infinitival complement may, depending on the grammatical function of the infinitival, be fronted. However, there are some speakers who do not attest the (b) sentences in (35) and (36), but it is obvious that (35 b.) and (36 b.) are more acceptable than (33 b.) and (34 b.). On the whole, it seems that Ross's Complex NP Constraint is not operative on most occurrences of subjectless infinitival complements, which suggest that - unlike infinitival complements with an expressed subject - they are not dominated by the category S at the time when Relativization or Wh-Fronting applies.

Thus it seems reasonable to argue that there are contexts in which the constituent of an infinitival complement can undergo Wh-Fronting and Relativization, and that there are contexts in which it cannot. The determining factor seems to be the overall configuration that embodies the constituent. It is obvious, for instance, that a construction like:

(38) a. The opportunity for the boys to pass the exam

is a complex nominal which could be roughly represented by the following configuration:



Such a representation is motivated by the fact that Ross's Complex NP Constraint applies to the constituents dominated by S (i.e. NP's are insensitive to Relativization and Wh-Fronting). On the other hand, a construction like the underlined one in:

(39) He expressed a desire to meet the students

does not seem to fit in the configuration in (38 b.), for - as we have seen in (36 a.) - the NP the students is susceptible to Wh-Fronting and it is also susceptible to Relativization:²⁰

(40) The students who he expressed a desire to meet
come from Persia

These facts suggest that not all infinitival complements have a similar deep structure, or at least that they do not have the same representation when transformations like Relativization and Wh-Fronting apply. We will return to discuss this point in some ^tdetail in the following section.

4.3.3. Headed gerundials and infinitivals reconsidered:

The facts presented in this section and in the preceding one indicate that in order to account for the behaviour of headed infinitivals and headed gerundials, it would be necessary to impose various restrictions: first, on the generation of these complements and, secondly, on the syntactic behaviour of linguistic elements contained in these complements. It would be convenient at this stage to sum up the various points we have noticed in these two sections with regard to

the generation of headed gerundials and infinitivals and the restrictions on the linguistic elements embodied in them. First, we have noted that the complement-head relation is not regular, for we have specified - albeit notionally - various types of relationship holding between a head-noun and its complement. This generalization applies to both headed gerundials and headed infinitivals. Secondly, we have seen that the same head-noun, depending on the context, may enter into various and quite often different relationships with its accompanying complement. Again this generalization applies to both headed gerundials and headed infinitivals. Thirdly, the fact that some headed infinitivals are not subject to Ross's Complex NP Constraint indicates that the infinitival complement is not dominated by the category S, at least at the time when the relevant transformation is applied. Fourthly, there are various constraints on the generation of infinitival and gerundive complements preceded by lexical head-nouns, for while we may argue that the following nominal:

(41) a. His eagerness to please

is derived from the structure underlying:

(41) b. He is eager to please

we find that the structure underlying:

(42) a. He is likely to win

may not be transformed into a nominal of the type instanced in (41 a.): viz.

(42) b. *His likelihood to win

Notice also that whereas we attest:

(43) His idea of meeting the students
we are unlikely to attest:

(44)*His fact of meeting the students
and whereas we accept:

(45) The fact of his interrupting
we do not attest:

(46)*The habit of his interrupting

In the earliest work on transformational grammar, all the different types of nominal instanced in this section and the preceding one would be accounted for in terms of transformations that apply to more basic structures. A construction like (41 a.) would thus derive from the structure underlying (41 b.). This approach has been recently shown by Chomsky to be ad hoc and insufficiently motivated. (Cf. footnote 18). In fact such a approach runs into various difficulties, some of which we have pointed out in this section and in the preceding one. We have also noticed that certain types of headed gerundials and headed infinitivals cannot plausibly be accounted for in terms of transformations applying to more basic underlying structures (i.e. an underlying sentencelike structure). However, a full account of this issue is of no direct relevance to the point under discussion, but it would certainly be more economic if, like Chomsky, we postulated certain phrase structure rules that would account for the enlargement of the category NP in such a way as to account satisfactorily for the various types of complements that may accompany a lexical head-noun. Such an approach would not only simplify the grammatical

apparatus, but it would enable us to predict the occurrence of grammatical sentences and the non-occurrence of ungrammatical ones. If this approach of enlarging the categorial component is to be pursued, then the rules of the categorial component must introduce an extensive range of complements within the noun phrase. As a first approximation, Chomsky proposes that the rules of the categorial component include the following (cf. Chomsky, 1970.a: 195):

(47) a. NP \longrightarrow N \sim (Complement)

b. VP \longrightarrow V \sim (Comp)

c. AP \longrightarrow A \sim (Comp)

(48) Comp \longrightarrow NP, S, NPS, NP Prep-P, Prep-P Prep P, etc.

Of course some complements like the gerundive complement in (49 a.) and the infinitival complement in (49 b.) would derive from an underlying S:

(49) a. The fact of John's having left

b. The plan for John to leave

That the underlined complements are dominated by the category S could be demonstrated by the fact that the Complex NP Constraint operates on them. On the other hand, there are complements, in particular object infinitival complements, that do not seem to derive from an underlying S. For instance, the underlined infinitival complement in:

(50) His desire to meet the students

does not exhibit the properties of an embedded sentence in the sense that the Complex NP Constraint does not apply to it. It could be the case, however, that the underlined complement in (50) starts as an embedded sentence in deep structure, and that

at the time Relativization or Wh-Fronting applies, the complement is no more dominated by the category S. In fact this is quite a feasible suggestion which we will be returning to discuss in the following section. Even if this suggestion proves to be valid, the postulation of a phrase structure rule like (47 a.) or something similar to it would still be necessary and could be justified on independent grounds.

Thus very tentatively we might modify the phrase structure rule:

(51) NP \rightarrow (Det) -N -S

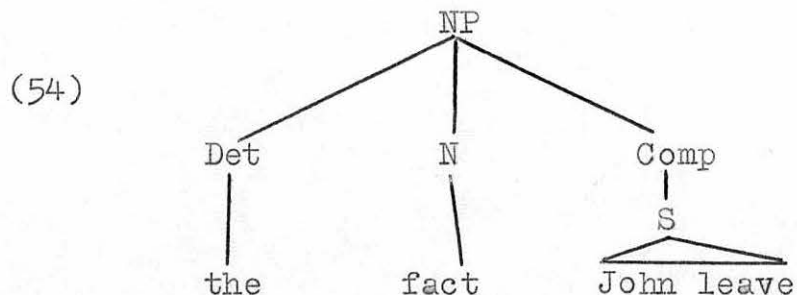
to become:

(52) NP \rightarrow (Det) -N-(Comp)

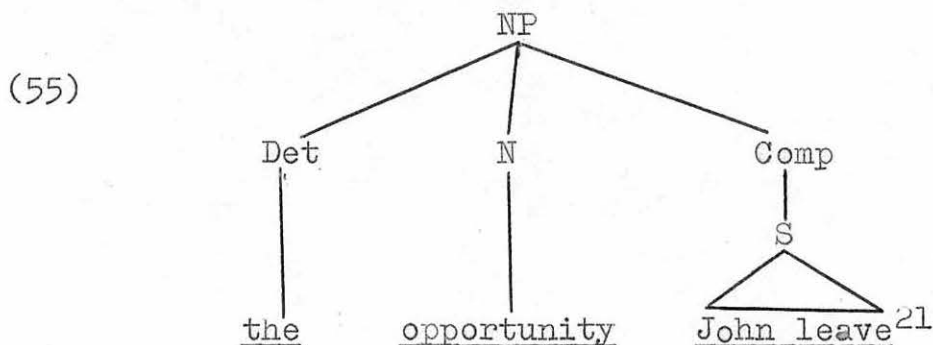
where Comp stands in for an extensive range of complements. This phrase structure rule will account for the derivation of a large variety of complex nominals like the following:

- (53) a. The fact that Sue got married
- b. The idea of going to Glasgow
- c. The plan for Fred to leave
- d. The question whether he will resign
- e. The reason for his refusal
- f. His habit of interrupting, etc.

Under this analysis, the deep structure of (49 a.) could be represented by the following phrase marker:



and that of (49 b.) by:



However, before we elaborate on this analysis, let us discuss headless complements, in particular headless gerundials and headless infinitivals.

4.4. Headless gerundials and infinitivals:

We have argued in the preceding two sections that gerundive and infinitival complements that are preceded by a lexical head-noun in surface structure could be accounted for in the phrase structure rules of the grammar by expanding the categorical symbol NP. But we have seen that gerundives and infinitivals also appear in surface structure without an antecedent lexical head-noun. The question to decide is whether this type of gerundial or infinitival has any relation at all to the type of construction discussed in the preceding sections of this chapter (i.e. headed gerundials and infinitivals).

Three possibilities suggest themselves:

(i) Headless gerundials and infinitivals are the sole constituents of the dominating NP and they have no relation whatsoever to headed gerundials and infinitivals. In other words there is a phrase structure rule that expands the category NP into S:²² viz.

(1) NP \longrightarrow S

(ii) Headless gerundials and infinitivals are generated by the same rules that generate headed gerundials and infinitivals with a subsequent rule that either optionally or obligatorily delete the antecedent head-noun, a process that yields headless gerundials and infinitivals. In other words headed and headless gerundials are stylistic variants and so are headed and headless infinitivals. Thus a phrase structure rule like:

(2) NP \longrightarrow (Det) - N - S

would account for both headed and headless complements.

(iii) Some headless gerundials and infinitivals are generated in deep structure as the sole constituents of the dominating NP while others share the constituency of the dominating NP with an N and a Det. The sequence Det N could be optionally deleted in surface structure. In other words the syntax of NP complementation will have a phrase structure rule like:

(3) NP \longrightarrow ((Det) -N) -S

to account for headless gerundials and infinitivals. Another phrase structure rule like:

(4) NP \longrightarrow (Det) -N -S²³

will be required to account for headed gerundials and infinitivals.

Of course, it is also possible to propose that gerundials and infinitivals share the constituency of the dominating NP with the proform it since this proform is often associated in surface structure with NP complements, in particular with infinitivals and that-clauses. However, in order to adequately answer these questions, it would be necessary to investigate

the nature of headless gerundials and infinitivals in the light of certain syntactic criteria that could reveal the overall configuration within which these syntactic constructions are embodied, in particular those transformations that could reveal whether or not the constructions under discussion (i.e. headless gerundials and headless infinitivals) obey Ross's Complex NP Constraint. Thus we will examine the susceptibilities of both the subject NP and the object NP of headless gerundials and infinitivals to, first, Relativization and, secondly, Fronting.

4.4.1. Relativization:

We will first consider the susceptibilities of NP's contained in headless gerundials to Relativization. Let us begin with the subject NP of the gerundial. Suppose we have an enclosing sentence like:

(5) The boy comes from France

into which we want to embed:

(6) The boy's breaking the window annoyed Mary

where the subject NP the boy in (5) is coreferential with the subject NP of the gerundial in (6). The question is whether or not the subject NP in the gerundial (i.e. the boy) can be relativized. Applying the usual process of relativization, we will get the unacceptable sentence:

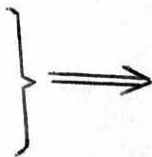
(7)*The boy who breaking the window annoyed Mary comes
from France

providing evidence that the subject NP of a gerundial is not

relativizable. However, it is quite possible for Relativization to apply to the subject NP of the gerundial provided that the relative pronoun whose is used instead of who in (7), for witness the acceptability of:

- (8) The boy whose breaking the window annoyed Mary
comes from France

The acceptability of (8) is thus effected by using whose instead of who. In fact, whose is always used to replace an NP that carries the genitive marker: cf.

- (9) a. The boy is the cleverest in the school
b. You admired the boy's work
c. The boy whose work you admired is the cleverest
in the school
- 

Here are some more examples which clearly show that the subject of a gerundial can be relativized on condition that whose is used. Notice in this respect that in contradistinction to who and whom, whose can be used to refer to animate and inanimate nouns:

- (10) a. The boy whose playing the piano loudly drove
everyone crazy was a student
b. I do not like the boy whose breaking the window
annoyed Mary

So far we have been investigating the susceptibilities of the subject NP of subject gerundials to Relativization. Now let us see whether or not subject NP's of object gerundials are relativizable. Consider the following data:

- (11) a. The girl is a nurse

- (11) b. I regret the girl's breaking the window } ~~⇒~~
c. *The girl whose breaking the window I regret is
a nurse

- (12) a. The boy comes from Liverpool }
b. I disliked the boy's playing the piano loudly } ~~⇒~~
c. *The boy whose playing the piano loudly I disliked
comes from Liverpool

Thus it seems that the subject NP of a gerundial is relativizable if the gerundial in which it is contained occupies the subject but not the object position. Before we give an explanation for this phenomenon, let us see whether object NP's contained in gerundials are relativizable or not.

It seems that object NP's contained in a subject gerundial are insensitive to Relativization, for witness the unacceptability of the following examples:

- (13) a. *The piano which the boy's playing loudly drove
everyone crazy was out of tune
b. *The boy who your offending angered the professor
comes from India

On the other hand, an object NP contained in an object gerundial seems to be sensitive to Relativization, for witness the acceptability of the following examples:

- (14) a. The piano which I disliked the boy's playing
loudly was badly out of tune
b. The window which I regret the boy's breaking is
expensive

Now let us consider the relativization of object NP's contained

in gerundials with no expressed subject. Consider, for instance, the following examples:

- (15) a. Crossing the river tired Susan out
- b. Talking to the students bores me

The embedding of (15 a.) into, say:

- (16) The river runs through Scotland

and the subsequent application of Relativization would yield the unacceptable sentence:

- (17)*The river which crossing tired Susan out runs through Scotland

Again the embedding of (15 b.) into, say:

- (18) The students take drugs

and the subsequent application of Relativization would yield the unacceptable sentence:

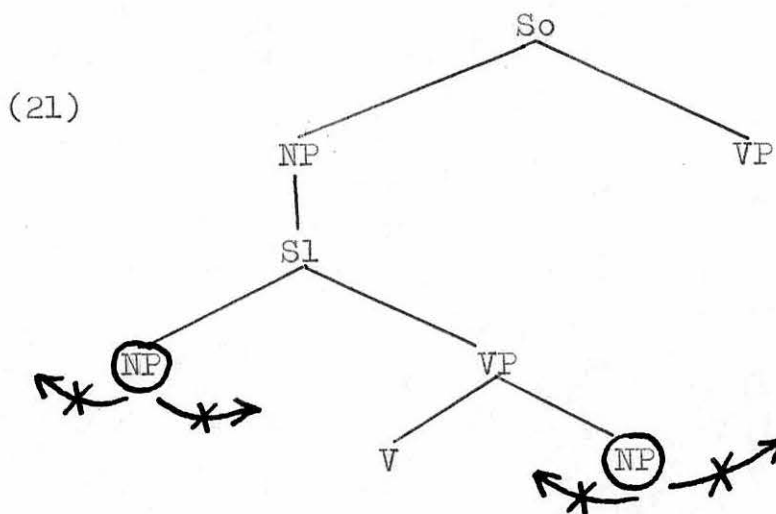
- (19)*The students who talking to bores me take drugs

Thus it seems that the object NP of a subject gerundial whose subject NP is suppressed does not undergo Relativization. The Relativization of the object NP in an object gerundial whose subject is suppressed often yields acceptable sentences: viz.

- (20) a. The cigars which I do not like smoking come from Havana
- b. The stamps which I can remember throwing away are French

To sum up, we have seen that subject NP's contained in a gerundial are relativizable only if the gerundial within which they are contained occupies the subject position. On

the other hand, object NP's contained in a gerundial are relativizable only if the gerundial occupies the object position. How could this phenomenon be accounted for? First, the fact that an object NP contained in a subject gerundial is immune to Relativization can be accounted for in terms of Ross's (1968: 134) Sentential Subject Constraint, namely "no element dominated by an S may be moved out of that S if that node S is dominated by an NP which itself is immediately dominated by S". To put diagrammatically, this constraint prevents any constituent like the encircled NP's in (21) from being reordered out of the dominating S as the X's on the arrows pointing left or right from the encircled NP's designate: viz.



This constraint accounts for the unacceptability of:

- (22)* The piano which the boy's playing loudly drove everyone crazy was badly out of tune

where the object NP of the gerundial: The boy's playing the piano loudly is being relativized. However, this constraint fails to account for the acceptability of:

- (23) The boy whose playing the piano loudly drove everyone crazy was a student

where the subject of the gerundial: the boy's playing the piano loudly is being relativized. Secondly, the fact that the subject NP of an object gerundial is immune to Relativization can be accounted for in terms of Perlmutter's Subjectless Sentence Constraint, namely: "Any sentence other than an Imperative in which there is an S that does not contain a subject in surface structure is ungrammatical".²⁴

Now let us consider the susceptibilities of NP's incorporated in infinitivals to Relativization. Consider first the susceptibilities of the subject NP contained in subject infinitivals to this transformation. Suppose we have an enclosing sentence like:

(24) The student comes from Cardiff

into which we want to embed:

(25) For the student to have failed the exam surprised us where the two underlined NP's in (24) and (25) are coreferential. The application of Relativization yields the unacceptable string:

(26)*The student who for to have failed the exam surprised us comes from Cardiff

However, if the relative pronoun who follows the complementizer for, then (26) will be more acceptable: viz.

(27)?The student for who to have failed the exam surprised us comes from Cardiff

Here are some more examples which show that the relativization of the subject NP of a subject ~~gerundial~~ ^{infinitival} is often possible:

(28) a.? I met the girl for who to have refused the
offer surprised Bill

b.? The children for who to climb the mountain is
dangerous are sick

However, if we reflect for a moment on the sentences in (27), (28 a.) and (28 b.), we notice that the subject NP which has undergone Relativization has not moved out of the sentence within which it is contained. The unacceptability of (26) and the following two sentences:

(29) a.*I met the girl who (for) to have refused the
offer surprised Bill

b.*The children who (for) to climb the mountain
is dangerous are sick

is automatically accounted for by the Sentential Subject Constraint. Of course, there should be no constraint on the relativization of a deep structure subject NP that has been raised from an object infinitival. Witness the acceptability of:

(30) The boy who we assumed to be in London is a student

The acceptability of (30) indicates that either Perlmutter's Subjectless Sentence Constraint is wrong or that an infinitival whose subject NP undergoes Raising does not come under the immediate domination of the category S. We return to discuss this matter later in this section.

Now let us consider the susceptibilities of the object NP contained in an infinitival clause to Relativization. Consider the following data where the infinitival is in the subject position:

- (31) a. The river runs through Scotland
b. For you to cross the river is dangerous } \Rightarrow
c. *The river which (for) you to cross is dangerous
runs through Scotland

- (32) a. Mary bought the dress
b. For you to spoil the dress would be a pity } \Rightarrow
c. *Mary bought the dress which for you to spoil
would be a pity

However, the Relativization of the object NP contained in a subject infinitival seems to be possible if prior to Relativization, the infinitival undergoes Extraposition - in Rosenbaum's sense - for witness the acceptability of the following two sentences:

- (33) a. The river which it is dangerous for you to cross
runs through Scotland: cf. (31 c.)
b. Mary bought the dress which it would be a pity
for you to spoil: cf. (32 c.)

On the other hand, the Relativization of an object NP contained in an object infinitival seems to be always possible regardless of whether or not the subject of the infinitival is expressed: cf.

- (34) a. The students are communist
b. I do not like to meet the students } \Rightarrow
c. The students who I do not like to meet are
communist

- (35) a. The students are communist
b. I hate for you to meet the students } \Rightarrow
c. The students who I hate for you to meet are
communist

The findings of this subsection could be summarized in the following table:

(36)

	Subject NP	Object NP
(i) Subject gerundials	Relativization always possible	Relativization not possible
(ii) Subject infinitivals	Relativization not possible	Relativization not possible except if (a) the infinitival is extraposed, and (b) the subject of the infinitival is suppressed
(iii) Object gerundials	Relativization not possible	Relativization possible
(iv) Object infinitivals	Relativization possible only if the subject of the infinitival has undergone Raising	Relativization always possible

However, before we comment upon the data in (36), let us investigate the behaviour of NP's incorporated in gerundials and infinitivals under Wh-Fronting.

4.4.2. Wh-Fronting:

It seems that there are no constraints whatsoever on the questioning of the subject NP of a gerundial regardless of the

grammatical function of the gerundial. A few examples will help to illustrate the point under discussion:

- (37) a. John's refusing the offer is surprising \implies
b. Whose refusing the offer is surprising?
- (38) a. They regret John's losing the race \implies
b. Whose losing the race do they regret?

On the other hand, although the questioning of the object NP of a gerundial is always possible when the gerundial is the object of the main verb in the enclosing sentence: cf.

- (39) a. She would mind your seeing Mary \implies
b. Who would she mind your seeing?
- (40) a. They would approve of your seeing Bill \implies
b. Who would they approve of your seeing?

The questioning of the object NP of a gerundial that occupies the subject position does not seem to produce acceptable sentences. Witness the unacceptability of the (b) sentences:

- (41) a. Your offending the girl angered the dean \nRightarrow
b. *Who did your offending anger the dean?
- (42) a. His failing the exam surprised us \nRightarrow
b. *Which exam did his failing surprise us?

The (b) sentences in (41) and (42) will, however, be acceptable if the Wh-word is not moved to the beginning of the sentence but instead retained in the position which the questioned NP occupies. The following two sentences with an emphasis on the Wh-word sound perfectly acceptable:

- (43) a. Your offending whom angered the professor?
b. His failing which exam surprised us?

It should be noted, however, that this type of questioning - that might be referred to as "echo questions"²⁵ - does not entail the reordering of the questioned NP, for the Wh-word appears in the place occupied by this NP. The questioning of the object NP of a gerundial whose subject is suppressed seems to be possible if the gerundial occupies the object position but not the subject position: cf.

- (44) a. What does he hate eating?
b. *What did crossing tire Jane out?

However, like (41 b.) and (42 b.), (44 b.) would be acceptable if the Wh-word is retained in the position that is originally occupied by the questioned NP: viz.

- (45) Crossing what tired Jane out?

Let us now examine the susceptibility to questioning of the constituent NP's of the infinitival. The questioning of the subject NP incorporated in a subject infinitival does not seem to be possible except if prior to questioning the Extraposition transformation - in Rosenbaum's sense - applies to the infinitival: cf.

- (46) a. For John to come late was a nuisance
b. *Who was for to come late a nuisance?
c. For whom was it a nuisance to come late?

It should be pointed out in this respect that the complementizer for in (46 c.) is obligatorily moved with the wh-word. Notice also that it is possible for the questioning to take place without the prior application of Extraposition on condition that the Wh-word is retained in the position originally

occupied by the questioned NP. Thus instead of (46 b.) we could have:

(47) For whom to come late was a nuisance?

The questioning of a subject NP incorporated in an object infinitival is possible only if the NP has undergone Raising: viz.

(47) a. They expected John to be punctual \Rightarrow

b. Whom did they expect to be punctual?

(48) a. I prefer for the students to take the exam \Rightarrow

b.*Who do I prefer for to take the exam?

Now let us see whether the object NP incorporated in an infinitival is sensitive to Wh-Fronting. First, an object NP incorporated in a subject infinitival cannot undergo Wh-Fronting unless prior to questioning the infinitival within which the NP is contained undergoes Extraposition - in Rosenbaum's sense - : viz.

(48) a. For Mary to have failed the exam was odd

b.*What was for Mary to have failed odd?

c.What was it odd for Mary to have failed?

Secondly, the questioning of an object NP contained in an object infinitival seems to be always possible: viz.

(49) a. We prefer the students to buy season tickets \Rightarrow

b. What do we prefer the students to buy?

(50) a. She hopes to get a grant \Rightarrow

b. What does she hope to get?

Notice, however, that an object NP contained in an object infinitival cannot undergo Wh-Fronting if the infinitival has an expressed subject, and if this subject has not undergone Raising: viz.

- (51) a. I want for you to pass the exam \Rightarrow
b. *What do I want for you to pass?

The discussion in this subsection points out that the behaviour of constituent NP's incorporated in gerundials and infinitivals under Wh-Fronting is similar to their behaviour under Relativization except in one respect, namely that where-as it is possible to question the subject NP of an object gerundial, this NP cannot be relativized: cf.

- (52) a. They regret the boy's losing the race
b. Whose losing the race do they regret?
c. *The boy whose losing the race they regret is a student

However, if we reflect for a moment on (52 b.) we notice that the questioned NP has not been reordered, out of the immediately dominating S, for the sentence within which it is contained is still intact. If we were to reorder the underlined NP in (52 a.) out of its containing S, then we would get:

- (53)* Whose do they regret losing the race?

which is ungrammatical.

4.4.3. Recapitulation:

From the examples cited in the preceding two subsections we notice the following points:

- (i) In contradistinction to NP's incorporated in a headed gerundial, NP's incorporated in a headless gerundial are susceptible to reordering transformations, in particular Relativization and Wh-Fronting, and this is evidence that there should

be a distinction in deep structure between headed and headless gerundials. Admittedly, there are contexts in which NP's incorporated in headless gerundials are insensitive to reordering transformations, but this phenomenon could be syntactically justified on independent grounds. We return to discuss this matter soon.

(ii) Headed and headless infinitivals exhibit some syntactic differences with regard to the susceptibility of their constituent NP's to reordering transformations.

The following are the contexts in which a constituent NP contained in a gerundial cannot be relativized or questioned:

A. If the NP is the object in a subject gerundial, and this could be accounted for in terms of the Sentential Subject Constraint mentioned above.

B. If the NP is the subject in an object gerundial, and this could be accounted for in terms of Perlmutter's Subjectless Sentence Constraint.

C. If the NP is the object in a subjectless gerundial that occupies the subject position. This also could be accounted for in terms of the Sentential Subject Constraint.

These facts seem to suggest that a gerundial does not share the constituency of the dominating NP with any other constituent. This conclusion stems from the fact that in most cases Ross's Complex NP Constraint does not operate on headless gerundials.

Constituent NP's contained in an infinitival do not undergo Relativization or Wh-Fronting in the following contexts:

A. If the NP is the subject of an infinitival that occurs in

the subject position, and this could be accounted for in terms of the Sentential Subject Constraint.

B. If the NP is the object of a subject infinitival whose subject NP is expressed, and this could be accounted for in terms of the Sentential Subject Constraint.

C. If the NP is the deep structure subject of an object infinitival, and if this NP has undergone Raising. This could be accounted for in terms of Subjectless Sentence Constraint.

NP's contained in subjectless infinitivals seem to be sensitive to reordering transformations, which means that the S dominating an infinitival gets pruned when the subject NP of the infinitival is deleted. We will discuss in the following paragraphs the question of S-Pruning with respect to subjectless infinitivals. However, before we address ourselves to this question, it is important to note that in almost all contexts, the Complex NP Constraint does not seem to be operative on headless infinitivals, which means that an infinitival does not share the constituency of the dominating NP with any other constituent, in particular an antecedent lexical head-noun.

A theory of S-Pruning is proposed and discussed in Ross (1968: 24-64) and Ross (1969). It should be pointed out, however, that the former proposal was written more recently than the latter.²⁶ Ross (1968: 26) formulates the following principle for the deletion of the node S: "Delete any embedded node S which does not branch (i.e. which does not immediately dominate at least two nodes)". However, this principle does not tell us whether the complementizer to in a subjectless infinitival is dominated by an independent node other than the

node VP. If it is, then the S dominating a subjectless infinitival cannot be pruned. In his earlier work Ross maintains that the presence of the complementizer to blocks the pruning of the S that dominates a subjectless infinitival. For instance, he argues (cf. Ross, 1969: 298-9) that the underlined infinitival in:

(54) To report the accident was wise of John

is exhaustively dominated by the category S. However, he does not show whether this analysis is true of object infinitivals that lack an overt subject. In what follows we will consider evidence that object infinitivals that lack an overt subject cannot be dominated by the category S in surface structure.

It has been convincingly argued by Perlmutter (cf. footnote 24) that there exists in English and in some other languages a surface structure constraint that marks as ungrammatical any sentence that contains an embedded S lacking a surface structure subject. He bases his argument on the fact that it is not possible to question or relativize the subject NP of a that-clause since either of these two transformations will leave the embedded sentence without a surface structure subject. Witness the unacceptability of (55 b.) and (55 c.):

- (55) a. He said that the woman bought a new car
b. *Who did he say that bought a new car?
c. *The woman who he said that bought a new car is
my aunt

However, Perlmutter maintains that (55 b.) and (55 c.) would be grammatical if the complementizer that was deleted: viz.

- (56) a. Who did he say bought a new car?

(56) b. The woman who he said bought a new car is my aunt

The acceptability of these two sentences, it is argued, is the result of the deletion of the node S which is due to the deletion of the complementizer that. In what follows we will see whether or not Perlmutter's theory of S-Pruning can be applied to subjectless infinitivals.

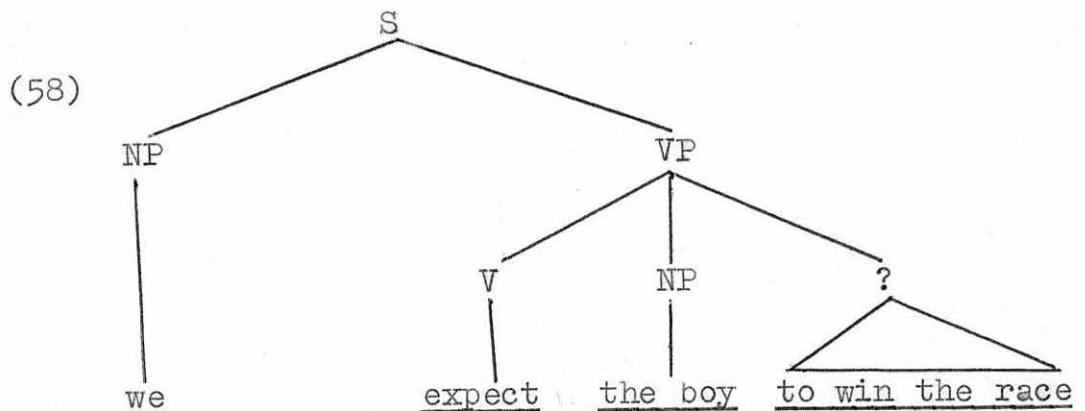
Let us begin our discussion by considering the following data:

(57) a. We expect the boy to win the race

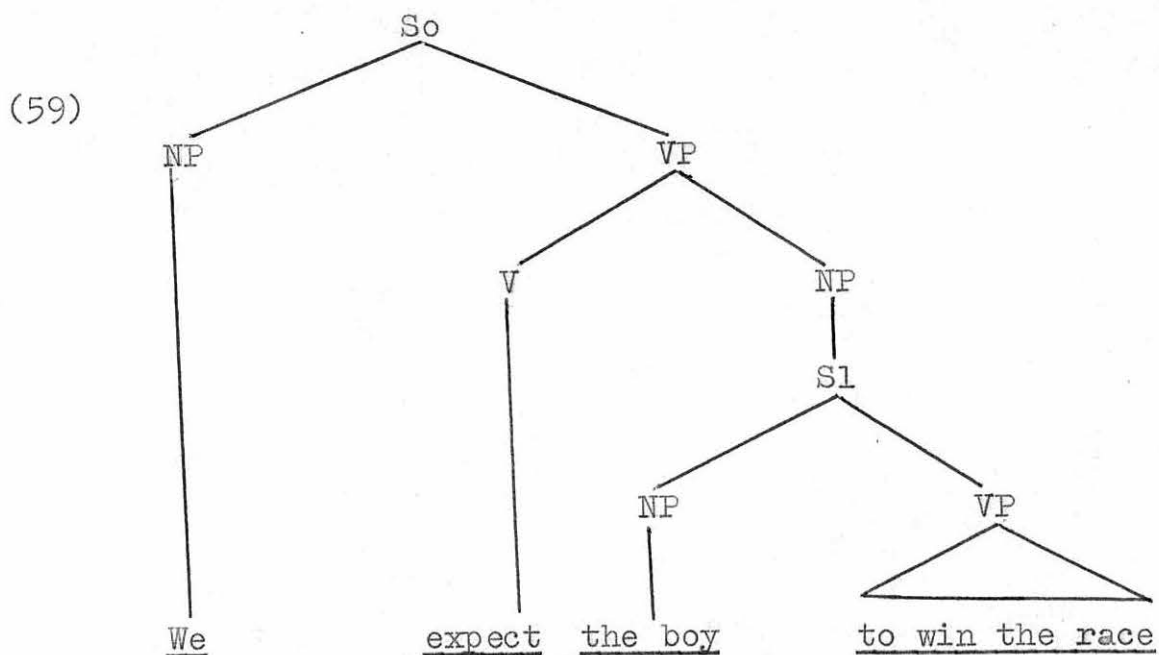
b. Who do we expect to win the race?

c. The boy who we expect to win the race is Irish

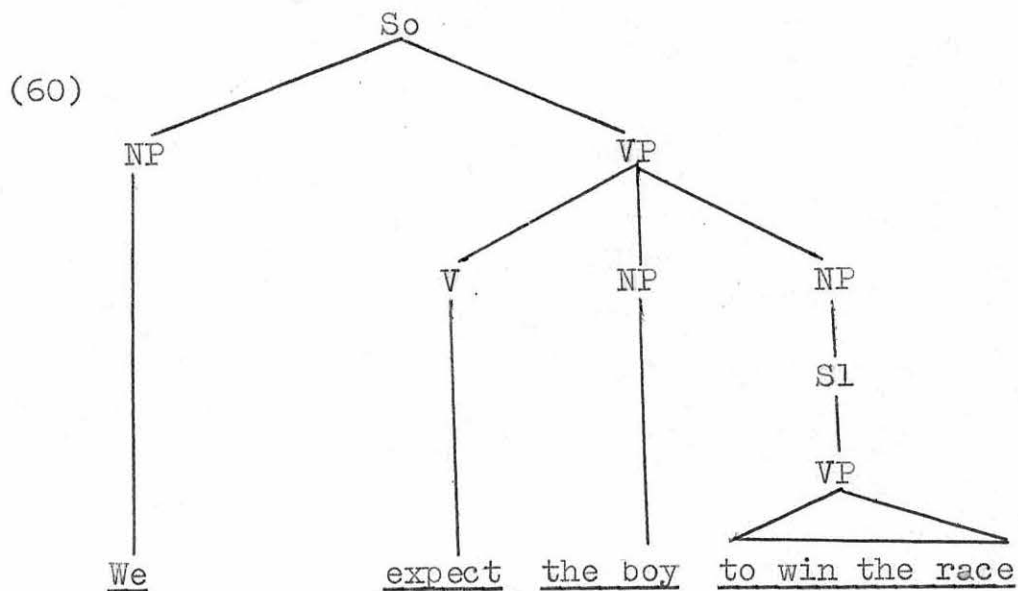
The fact that (57 b.) and (57 c.) are grammatical shows that the underlined infinitival in (57 a.) is not dominated by the category S, for - according to Perlmutter - "any S other than Imperative in which there is an S that does not contain a subject in surface structure is ungrammatical". If Perlmutter's analysis is to be adopted, then the surface structure representation of (57 a.) would be something like:



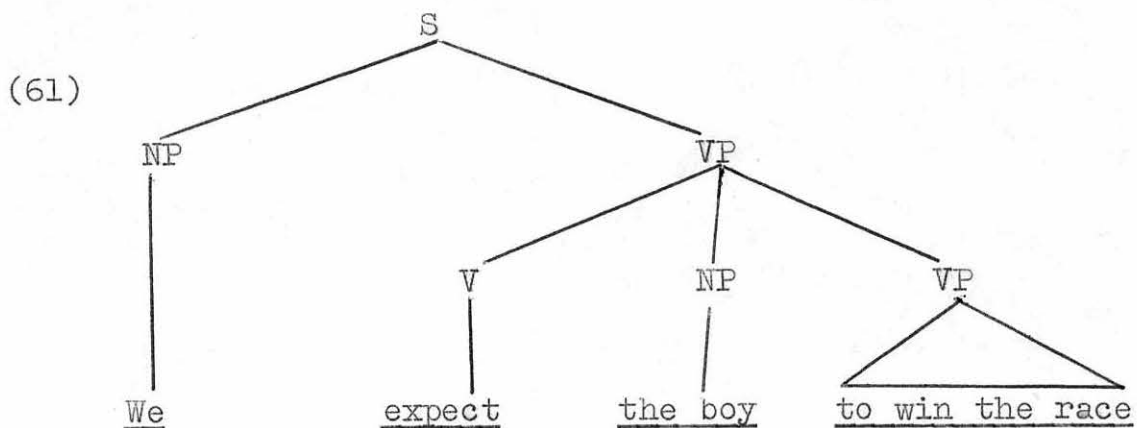
It is not certain yet what category dominates the infinitival in (58) and this is why I chose to use the question mark. Now consider the deep structure of (57 a.) - cf. footnote 21:



After the application of Subject-Raising on S1, we get a derived structure like:



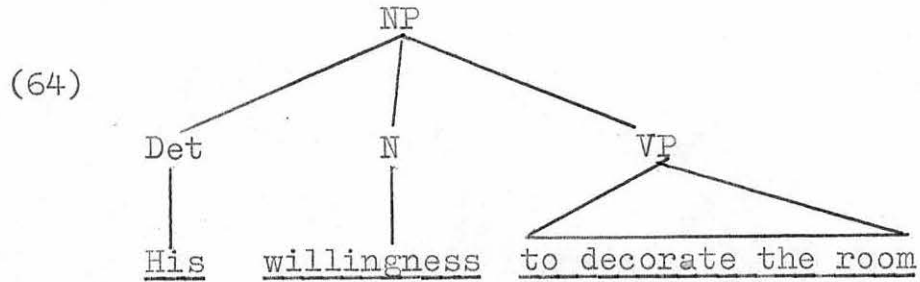
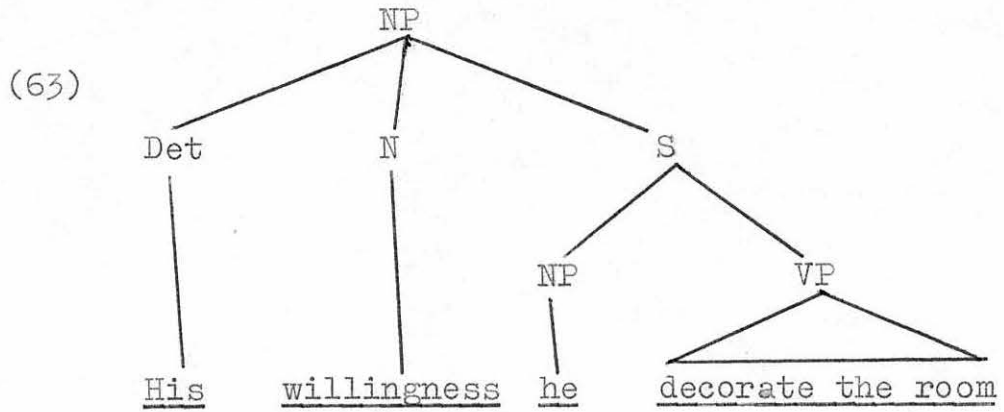
According to Perlmutter's constraint, the VP to win the race cannot be dominated by the category S, so the node S1 in (60) should be pruned. It could be the case also that the NP that dominates S1 in (60) gets pruned upon the application of S-Pruning. If this is the case, then the VP to win the race will come under the immediate domination of the higher VP. Thus the surface structure representation of (57 a.) is:



The pruning of the node NP that dominates the node S in (60) is justified on the grounds that there is no sense in which the string to win the race behaves like an NP. Indeed we have seen in the preceding chapter (see in particular 3.4.4.) that subjectless infinitivals that occur in the object position do not undergo any of the transformations that characteristically operate on NP's.

This analysis could also be extended to account for certain types of headed infinitivals where the antecedent head-noun is followed by an infinitival complement that lacks an overt subject. We have noticed in 4.3.2. that the behaviour of certain headed infinitivals whose complement lacks an overt subject differs from those whose complement has an expressed subject. Thus it seems that the S under whose domination an infinitival complement is generated gets pruned if the headed infinitival occupies the object position and if the subject NP of the infinitival complement is deleted. Under this analysis, the deep structure configuration of (62) is (63), whereas its surface structure representation is (64):

(62) His willingness to decorate the room



That (64) or something similar to it, but not (63) is the correct representation of the nominal in (62) is consistent with the fact that this nominal is not subject to Ross's Complex NP Constraint, for witness the acceptability of the following two sentences:²⁷

- (65) a. The room which he expressed his willingness to decorate was built last year
 b. Which room did he express his willingness to decorate?

Now let us see whether this analysis could be extended to account for subjectless infinitivals that occur in the subject position. Consider, for instance, the following example where the subjectless infinitival occupies the subject position:

(66) To decorate the room was wise of John

It seems that the NP the room is insensitive to both Relativization and Wh-Fronting, for witness the unacceptability of the

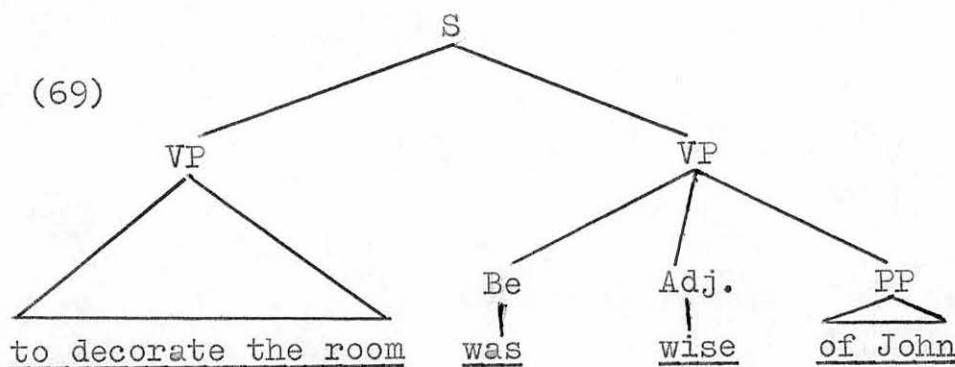
following two sentences:

- (67) a. *The room which to decorate was wise of John
was built last year
- b. *What was to decorate wise of John?

According to Perlmutter's analysis, the infinitival in (66) cannot be dominated by the category S in surface structure, otherwise sentence (66) would be ungrammatical, which it is not. Empirical evidence seems to suggest that subjectless infinitivals occupying the subject position are dominated in surface structure by the category S. First, by postulating that the infinitival in (66) is dominated by the category S, we can automatically account for the unacceptability of both (67 a.) and (67 b.) by means of the Sentential Subject Constraint. Secondly, by postulating that the infinitival in (66) is immediately dominated by the category S that is dominated by the category NP, we can account for the fact that this infinitival is sensitive to the transformations that operate on NP's. Consider, for instance, the following examples:

- (68) a. It was to decorate the room that was wise of John: Clefting
- b. To decorate the room was wise of John, but it upset his mother: Pronominalization
- c. What was wise of John? Fronting

Thirdly, a surface structure representation like:



cannot be independently motivated.

If the aforementioned observations are correct, then the grammar should contain a principle of S-Pruning that could satisfactorily account for embedded sentences incorporating a complementizer. In this respect it should be pointed out that the presence of the complementizer ing blocks S-Pruning regardless of the grammatical function of the embedded sentence within which the complementizer is contained. On the other hand, the presence of the complementizer to blocks S-Pruning if the embedded sentence occupies the subject but not the object position.

However, in order to give a full and accurate account of the syntax and the semantics of gerundials and infinitivals, it is imperative that we should discuss two basic issues, namely the proform it (which is usually associated with NP complements, in particular that-clauses) and the complementizers. We will address ourselves to these two questions in the following two sections respectively.

4.5. The status of the proform "it":

It has been the tradition in transformational grammar to introduce the pronoun it into the underlying structure of complement sentences by the same rules that introduce lexical items into the underlying structure (cf. Rosenbaum, 1967.a: 22). In other words the N in Chomsky's phrase structure rule:

(1) NP \rightarrow (Det) -N -(S)

could underlie lexical head-nouns that precede the sentential complements in the following examples (cf. Chomsky, 1965: 100):

- (2) a. The idea that he might succeed
- b. The fact of his being guilty
- c. The opportunity for him to leave

or the impersonal it of such sentences as:

- (3) a. It strikes me that he had ^{no} choice
- b. It surprised us for him to have lost

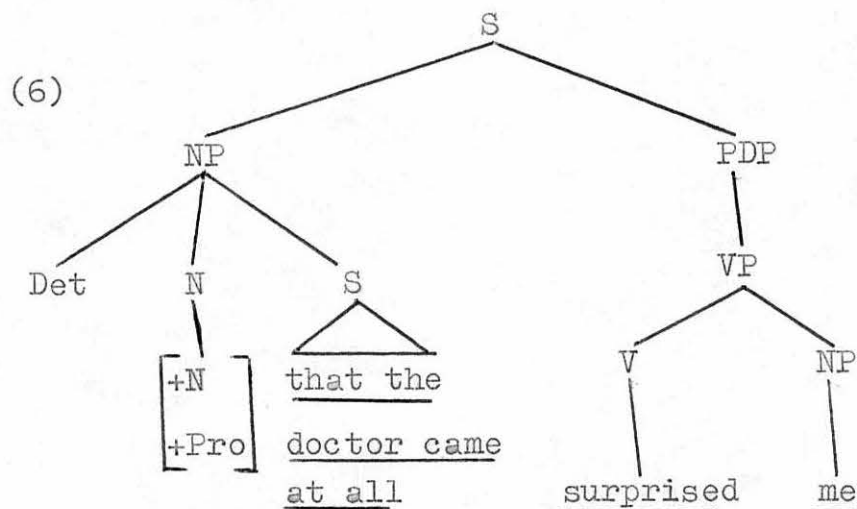
On the other hand, the N in Rosenbaum's phrase structure rule:

$$(4) \text{ NP} \rightarrow \text{Det} - \text{N} - (\text{S})$$

is always realised as it. (cf. Rosenbaum, 1967.a; 1, also footnote 11). Thus he represents the following sentence:

- (5) That the doctor came at all surprised me

by the following phrase marker:



where the subject NP has been expanded into a Det, and N that carries the pronominal feature $[+ \text{Pro}]$, and a complement S. In other words both Chomsky and Rosenbaum generate the proform it in deep structure to function as the head of noun phrase complement constructions. Other linguists, in particular George Lakoff, Robin Lakoff, and Ross adopt the same analysis where

they seem to agree that the grammar should contain a phrase structure rule that expands the category NP into it \bar{S} (cf. Lakoff, G., 1968.a; Lakoff, R., 1968; Ross, 1968).

As far as I know, there has been no valid syntactic or semantic justification for positing the proform it in the deep structure of noun phrase complements. The only argument that Rosenbaum presents for generating it in deep structure is that this proform determines the application of the Extraposition transformation - in Rosenbaum's sense (cf. Rosenbaum, 1967.a: 14). On the other hand, George Lakoff argues that if we assume that this proform is to be inserted, we are lost because it appears to him that no general rule of it insertion can be stated that would handle (cf. Lakoff, 1968.a: 15):

(7) I dislike it for John to smoke

In what follows it will be shown that the justifications presented by Rosenbaum and Lakoff do not, in fact, establish solid grounds for positing the pronoun it in deep structure to function as a head for noun phrase complements.

4.5.1. Arguments that it is a deep structure constituent:

The only argument that Rosenbaum cites for generating the proform it in deep structure is that it determines the application of the Extraposition transformation. In reply to this, we could argue that extraposition - in Rosenbaum's sense - does not operate on all occurrences of noun phrase complements, for there are contexts in which this transformation cannot

apply. This is particularly true if the noun phrase complement is the object of the main verb in the matrix sentence. In these cases the pronoun has to be obligatorily deleted. Consider, for instance, the following examples:

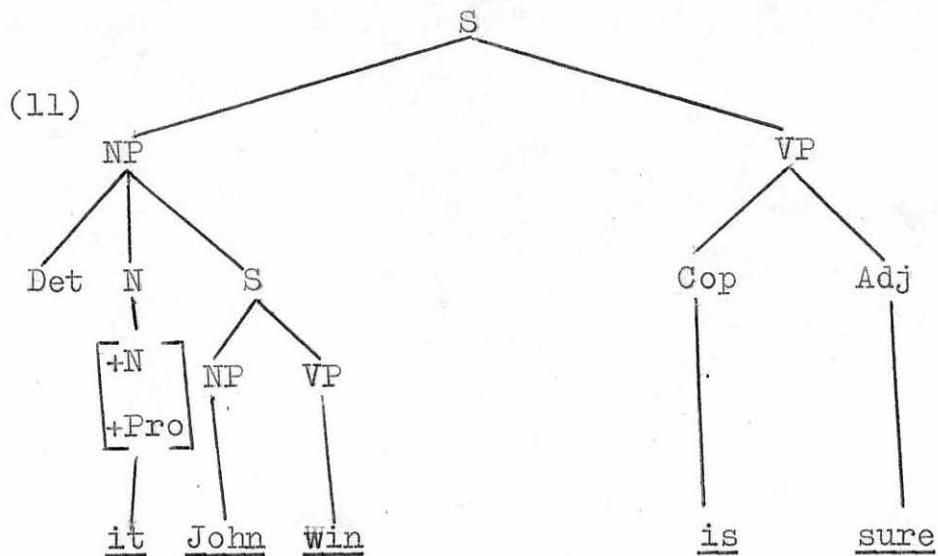
- (8) a. I think that John is coming late
b. *I think it that John is coming late
- (9) a. We noticed ~~that~~ ~~he~~ ~~was~~ ~~absent~~
b. *We noticed it that he was absent

In addition, it is Rosenbaum's contention that Extraposition does not operate on gerundials.

It is true that Extraposition is obligatory in certain contexts. However, very few contexts require the obligatory application of this transformation (cf. 4.5.4. below). In addition, the fact that Extraposition applies to noun phrase complements does not necessitate the generation of the proform it in deep structure. Indeed we will show that the Extraposition transformation is insufficiently motivated and also incorrectly formulated. First, the Extraposition transformation - in Rosenbaum's sense - does not apply in many cases to sentences incorporating an NP complement. A sentence like:

- (10) John is sure to win

would under Rosenbaum's analysis have the following deep structure:



The derivation of (10) from (11) is - according to Rosenbaum - effected in the following steps: the Complementizer Placement transformation applies to give:

(12)*It for John to win is sure

Secondly, the Extraposition transformation gives:

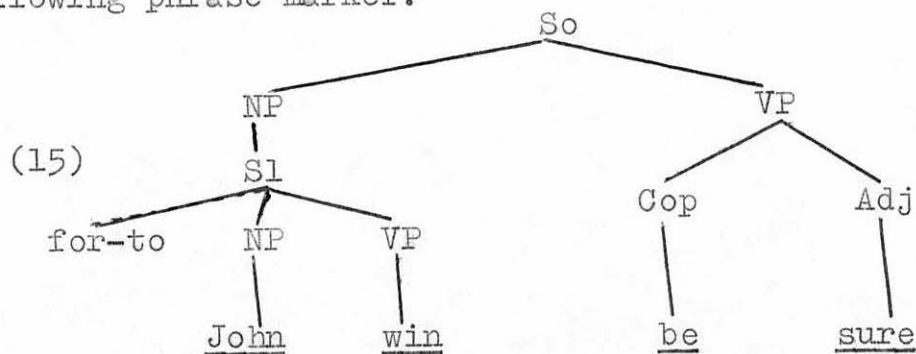
(13)*It is sure for John to win

Thirdly, the Pronoun Replacement transformation operates on (13) to give:

(14)*John is sure for to win

Finally, the Obligatory Complementizer Deletion transformation applies to (14) to give (10). What is important to notice is that the Extraposition transformation that motivated Rosenbaum to generate it in deep structure does not always yield grammatical sentences, as is shown by (13). In fact the derivation of (10) from (11) could be accounted for in a quite natural way in terms of a more independently motivated transformation, namely "Subject Raising". Jespersen calls the type of syntactic phenomenon present in (10) the "Split Subject" - i.e. the

subject infinitival is divided into two parts - (cf. Jespersen, 1940: 315). However, since this phenomenon occurs in object infinitivals as well, we consider Jespersen's terminology inadequate. Langendoen, on the other hand, calls the transformation that derives (10) from (11) the "Infinitival Clause Separation" transformation (cf. Langendoen, 1969: 56). George Lakoff (1968.a) calls this transformation 'It-Replacement' and so does Robin Lakoff (1968). A more satisfactory term which we will use in this work has been suggested by Kiparsky and Kiparsky (1970), namely Raising, a transformation that applies to an embedded S to raise one of its constituents to a higher S. The elements that have been shown to be capable of Raising are: the subject NP of an embedded S; the object NP of an embedded S; the element NEG incorporated in an embedded S, and certain modal auxiliaries (cf. 2.8. and 2.5. above). In the example under discussion - i.e. (10) - it is the subject NP of the embedded S (i.e. John) that undergoes Raising, and hence the term Subject Raising. Under this analysis, the process that derives (10) from (11) actually takes place in one step; the subject NP of the embedded S is turned into the subject NP of the matrix S, and the predicate of the embedded S is simultaneously made part of the higher VP or of the higher S. Now let us consider how Subject Raising applies to the structure underlying (10), which could be roughly represented by the following phrase marker:



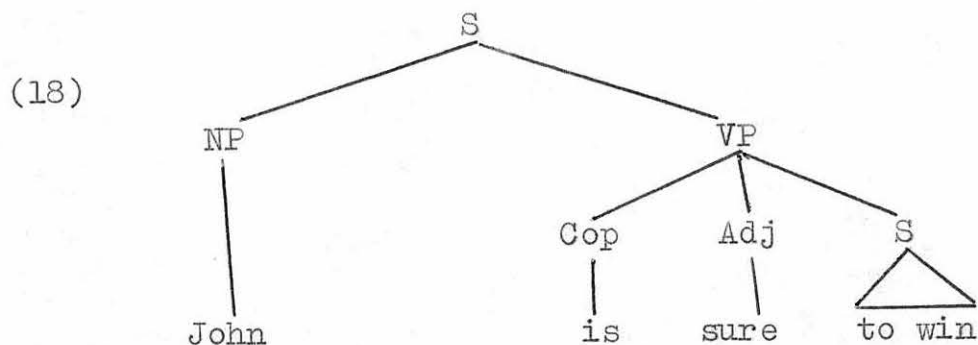
First, the fusion of the complementizers for and to into the embedded sentence S1 (i.e. the complementizer for is placed immediately before the subject NP of S1 (i.e. John) and the complementizer to before its VP) gives:

(16)*For John to win is sure

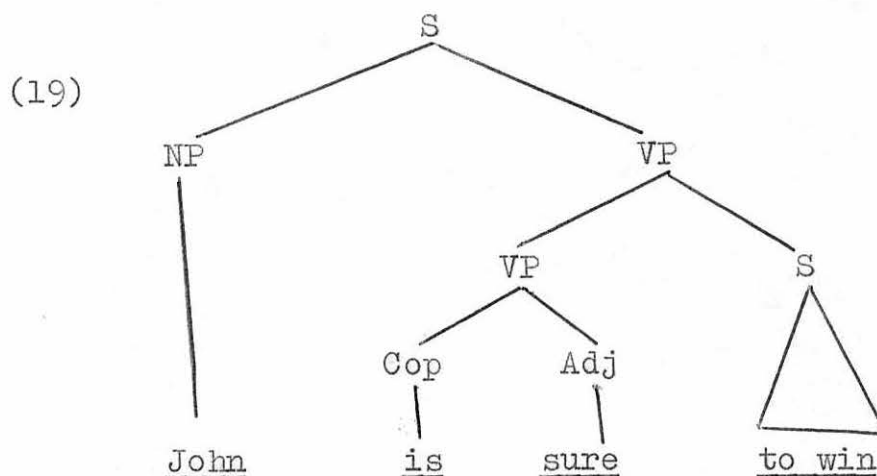
Secondly, the raising of the subject NP John to the higher NP and the simultaneous shifting of the rest of the embedded sentence to the higher VP gives us:

(17)*John is sure for to win

Thirdly, the obligatory deletion of the complementizer for gives (10). Notice in this respect that the It-Replacement transformation postulated by George Lakoff is similar to Raising except for the fact that the raised NP replaces - under his analysis - the proform it, which he generates in deep structure. It has been argued by Lakoff that although the embedded sentence, after the raising of its subject NP, must wind up as part of the topmost VP of the main clause, the exact derived constituent structure that must result is still in question (cf. Lakoff, 1968.a: 23-4). He suggests that there are two possibilities. First, the S is moved inside of the topmost VP and added to the right of all the other constituents of VP. Under this analysis, (10) may be represented by the following phrase marker:



Such a process is called "Daughter-Adjunction" - i.e. S is adjoined as a daughter to VP. Alternatively, a new VP node is created under the immediate domination of the topmost S to dominate both the old topmost VP and the remnants of the embedded sentence. This operation is known as "Chomsky-Adjunction". Under this analysis (10) may be represented by the following phrase marker:



In this respect it seems that there is no reason to favour one formulation over the other though we agree with Lakoff that Chomsky-Adjunction tends to preserve the constituent structure, whereas Daughter-Adjunction tends to break it down.

This analysis has more than one advantage over Rosenbaum's analysis, in the sense that it is simpler and more independently motivated. It is simpler in the sense that Raising does not require the prior application of Extraposition.²⁸ Notice in this respect that Rosenbaum was obliged to make his Extraposition transformation apply vacuously in order for the Pronoun Replacement transformation to apply. In order to derive:

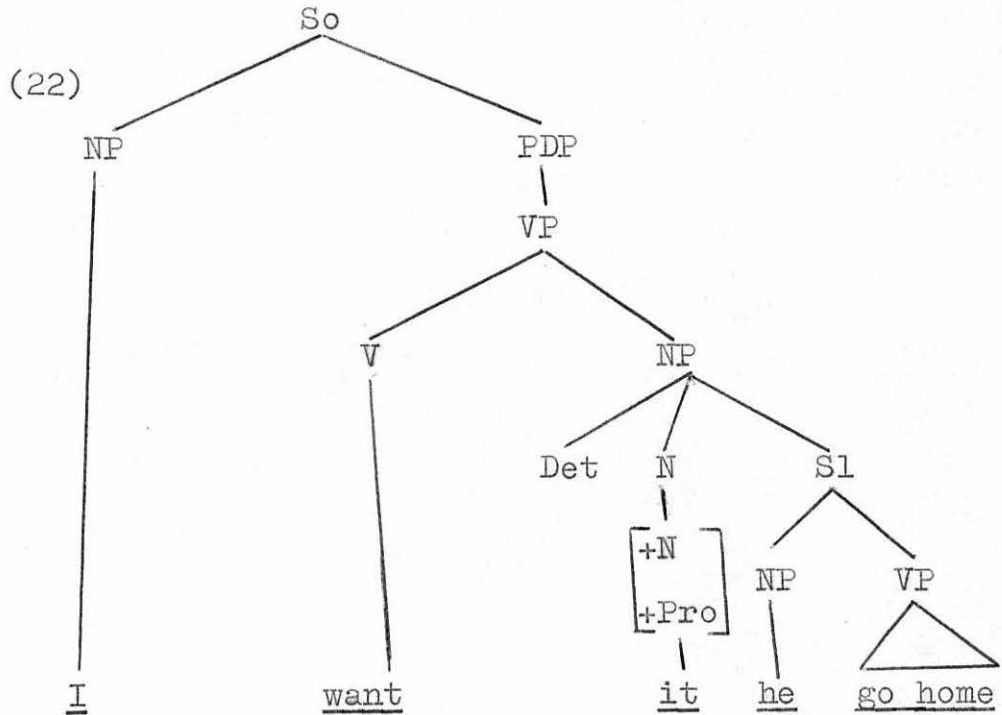
(20) I want him to go home

under Rosenbaum's analysis, the Extraposition transformation

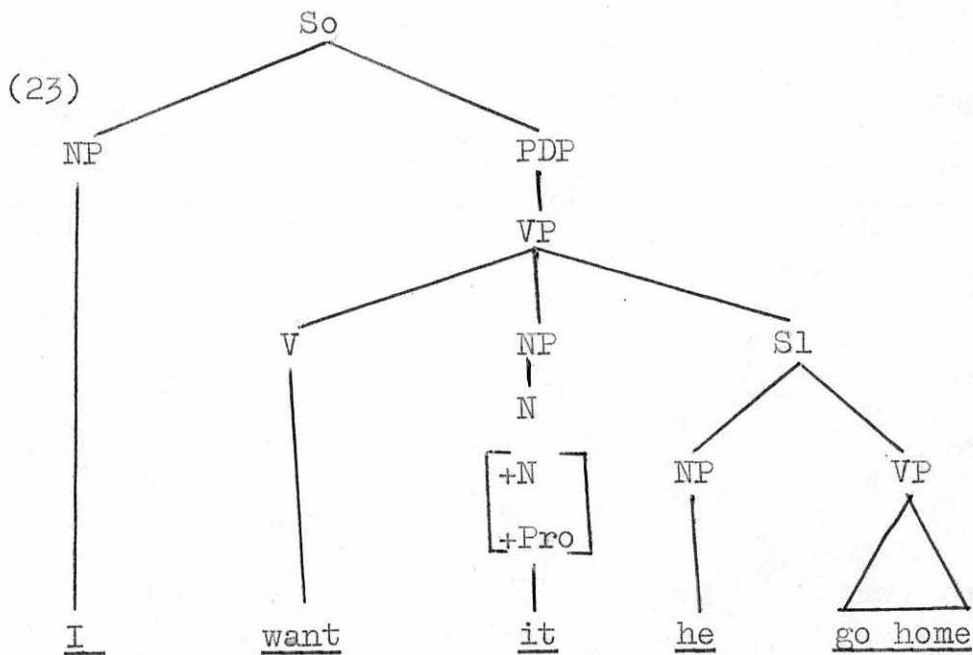
has to apply to a deep structure like:

(21) I want it- he go home

which could be represented by:

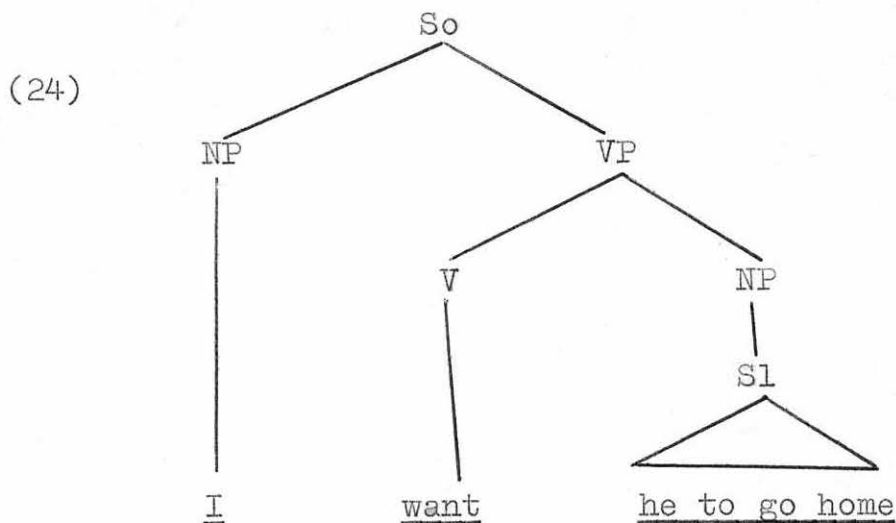


to yield the structure:



Notice that (23) derives from (22) through the vacuous application of Extraposition. The Pronoun Replacement transformation applies to (23) to give (20). Notice that under our

analysis, (20) is derived from a deep structure similar to:



through the application of Subject Raising only (cf. footnote 21).

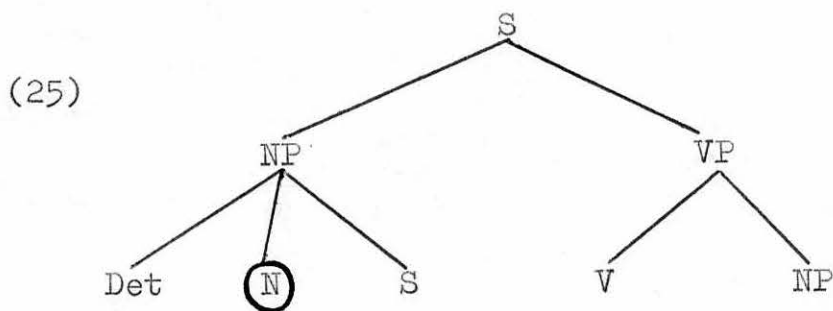
Returning to the main theme, we have noticed that the Ex-traposition transformation that motivated Rosenbaum to generate it in deep structure, is not a highly motivated transformation. We have noticed also that Rosenbaum's Extraposition does not operate on all occurrences of NP complements and that it does not always yield grammatical sentences.

The second argument cited for generating the proform it in deep structure is that of George Lakoff (1968.a: 15). Lakoff claims that if we assume that it is to be inserted we are lost because, it appears to him, that no general rule of it insertion could handle (7). In fact we will be lost if we generate it in deep structure, for, as we have noticed, it is quite often obligatorily deleted, sometimes optionally deleted, and sometimes obligatorily retained. Thus we have under this analysis to specify the contexts in which it is obligatorily deleted, the contexts in which it is optionally deleted, and

the contexts in which it is obligatorily retained. This, of course, would be no easier, if not more difficult, than specifying the contexts in which this proform is to be inserted - if one's analysis requires that it be introduced transformationally. It should be noted in this respect that both Lakoff and Rosenbaum fail to specify the various contexts in which it is obligatorily or optionally deleted. In fact Rosenbaum maintains that the Extraposition transformation is usually optional. We will now consider evidence that the proform it cannot be a deep structure constituent.

4.5.2. Arguments that it is not a deep structure constituent:

By adopting the suggestion that it is the head-noun for all types of noun phrase complement, we are unable to account for the different co-occurrence possibilities of the different types of noun phrase complement. In a configuration like:



it is the encircled N that imposes selectional restrictions on the verb dominated by the topmost VP. It is this notion of selectional restrictions - i.e. rules that handle the co-occurrence of lexical items - that prevents the generation of a sentence like:

(26)*The idea that he came late drank the beer

It has been pointed out by Sandra Thompson (1970:a: 21-38) that relative clauses and sentential complements preceded by a

lexical head-noun play no role in subcategorizing the verb or in imposing selectional restrictions on it. In other words, no verb is ever marked for taking a relative clause or a complement to an NP. In contradistinction to relative clauses and sentential complements preceded by a lexical head-noun, sentential subjects and objects like those in (27) and (28) respectively:

(27) His speaking so eloquently impresses me

(28) I like his speaking his eloquently

play an obligatory role in the sense that the verbs impress and like are subcategorized for a sentential subject and a sentential object respectively. This information will be presented in the lexicon in the following way (cf. Chomsky, 1965: 94):

(29) a. impress, $\left[\begin{array}{l} + V, + S \text{---} \\ \text{---} S \end{array} \right]$
 b. like, $\left[\begin{array}{l} + V, + \text{---} \\ \text{---} S \end{array} \right]$

in addition, the verb governs both the occurrence of the clause in such sentences and the type of clause that can occur. These facts are not true of relative clauses and noun phrase complements preceded by a lexical head-noun. To explain the point under discussion, consider the following example:

(30) The idea of spending his life in prison horrified him

The verb horrify will be subcategorized in terms of the head-noun idea but not in terms of the sequence head-noun (+ linking morpheme) + complement: viz.

(31) horrify, $\left[+ V, + NP \text{---}, + \text{---} NP \right]$

On the other hand, the head-noun idea might be subcategorized in the lexicon in the following way (cf. Chomsky, 1965: 100):

(32) idea, $\left[+ N, + Det \text{---} S \right]$

which means that the noun idea, in this particular example - i.e. (30) - is preceded by the category Det and is followed by a sentential complement.

To recapitulate, we have seen that the head-noun subcategorizes the verb and imposes selectional restrictions on it. By postulating the proform it as the head-noun for all types of noun phrase complements, we eliminate the role played by the noun preceding the complement and as a result we will not be able to predict the occurrence of grammatical sentences and the non-occurrence of ungrammatical ones. We are unable, for instance, to account for the non-occurrence of:

(33) *His having come from London is tiring

and the occurrence of:

(34) Crossing this river is tiring

or for the non-occurrence of:

(35) *Crossing this river is unfortunate

and the possible occurrence of:

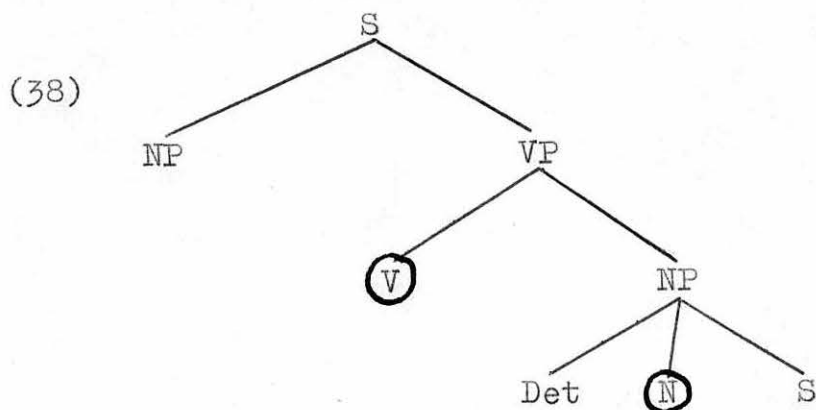
(36) His having come from London is unfortunate

for both tiring and unfortunate co-occur quite comfortably with the pronoun it: viz.

(37) a. It is tiring

b. It is unfortunate²⁹

Thus if the external relations of the gerundials in (33) and (35) are determined by it, then the anomaly of these two sentences cannot be explained. By way of further exemplification consider the following phrase marker:



where the encircled N imposes selectional restrictions on the encircled V. Thus the grammar will generate:

(39) I regret the fact that she is sick

where there are selectional restrictions holding between the verb regret and the noun fact. It is in terms of such rules that the generation of a string like:

(40) *I regret the ~~water~~ which he drank

is blocked, for regret cannot have as its object a noun that carries the feature specification [+ concrete]. Thus if we assume that all noun phrase complements are preceded by it we do eliminate the role played by nouns in subcategorizing verbs, for in this case the verb will be subcategorized by the it and not by the complement. If this is so, we should expect all the following sentences to be acceptable:

- (41) a. I want to go
 b. *I want that I go
 c. *I want going

The fact that only (41 a.) is acceptable indicates that the verb is marked in terms of the complement and not in terms of the proform it for this proform co-occurs quite comfortably with the verb want: viz.

(42) I want it

Thus it becomes obvious that the proform it is semantically empty and plays no syntactic role whatsoever with respect to the main verb. In this respect it has been pointed out by Morgan that the analysis of it as head-noun of the NP containing the extraposed construction seems a rather strained usage of the notion "head-noun", for the it makes no apparent contribution to the semantic reading of the structure. And if it were really a head-noun, one would expect it to behave like one with regard to relative clauses (cf. Morgan, 1968: 81-93). But this is not the case as the following two examples show:

(43) That he is unpopular, which is obvious, does not
bother John

(44)*It, which is obvious, does not bother John that
he is unpopular

Another argument that invalidates the analysis of noun phrase complements in terms of a head-noun it plus a sentence resides in the fact that the proform it appears in sentences that embody noun phrase complements with expressed lexical head-nouns, evidence that the it which we encounter in certain complex sentences is not a noun phrase complement head-noun. Consider, for instance, the following examples:

- (45) a. It surprised me the fact that he came late
b. It is immaterial the fact of your being an American
c. It is a waste of time this business of doing
research
d. It astounded us the government's plan to increase
prices³⁰

where the proform it is understood as referring to the NP com-

plement together with the preceding lexical head-noun. On intuitive grounds, (45 a.) and:

(46) The fact that he came late surprised me
could be interpreted as stylistic variants (i.e. have the same deep structure and thus the same meaning). Similarly, sentence (45 d.) and:

(47) The government's plan to increase prices astounded us
are taken as stylistic variants. Now compare the sentences in (45) with those in (48):

- (48) a. He is a nice bloke, John
- b. It is a big city, London
- c. They are having a nice party tonight, the Smiths

where the subject pronoun is coreferential with the underlined NP that appears at the end of each sentence. The three sentences in (48) are paraphraseable by the following three sentences:

- (49) a. John is a nice bloke
- b. London is a big city
- c. The Smiths are having a nice party tonight

In other words the sentences of (48) have identical deep structures to the sentences of (49). The transformation that derives the sentences of (48) from the structure underlying those in (49) is effected in two steps: (i) the subject NP is copied at the end of the sentence, and (ii) the first occurrence of the subject NP is substituted by the appropriate proform (e.g. the pronoun agrees with the copied noun in number, gender and person). This transformation will be called "NP Copying".³¹ The sentences in (45), I would suggest, are ana-

logous to those in (48). On the same basis we could argue that the it in, say:

(50) It surprised me that he came late

is a pronominal remnant of the copied sentential complement (i.e. that he came late). Such an assumption gains credibility from the fact that (50) and:

(51) That he came late surprised me

are intuitively understood as stylistic variants just as are (48 a.) and (49 a.) and also (45 a.) and (46). If the transformation that relates (45 a.) to (46) and (48 a.) to (49 a.) is the same one that relates (50) to (51), then it becomes obvious that (50) derives from the structure underlying (51) and not vice versa, evidence that the proform it does not exist in deep structure. It becomes clearer that the proform it is a pronominal remnant of a sentential complement if the copied NP is a gerundial. Consider the following sentence:

(52) It annoyed her, missing the train like that

where there might be an open syntactic juncture or a pause before the copied NP complement. This open syntactic juncture or pause might be realized in orthography by the presence of a comma (cf. 4.5.4. below). Consider the following two examples cited by Scheurweghs (1959: 185):

- (53) a. From that point of view it would be fun, entertaining her people
b. It'd have saved a lot of grief and woe, having only one fire to keep going

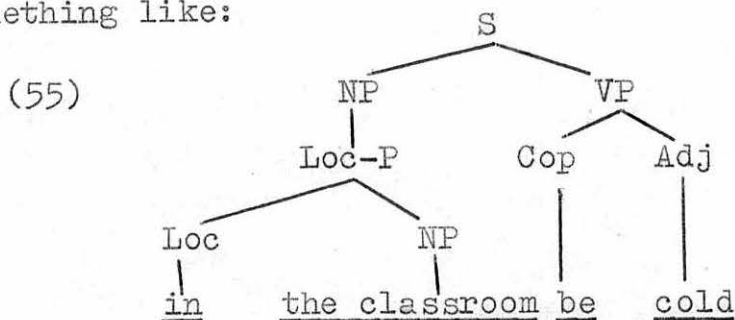
We return to discuss this issue in a subsequent subsection.

Thus far we have assumed that the proform it stands in for the whole NP complement, whether or not the NP complement is preceded by a lexical head-noun. On these grounds we assume that it is a substitute form or a pronominal remnant and that it is not "inserted" transformationally. In fact there is no syntactic or semantic motivation for positing this proform in deep structure. After all, one wonders whether there is any significance at all in generating in deep structure an element that has no bearing on the semantic reading of the sentence within which it is incorporated. Below is more evidence that supports our analysis of the proform it as a pronominal remnant of a copied sentential complement.

By accounting for extraposed elements in terms of a copying transformation, not only do we satisfy our linguistic intuition but we are also enabled to account for other syntactic phenomena. Indeed this transformation could be generalized to account for almost all occurrences of the impersonal pronoun it. All the following sentences, for instance, could be accounted for in a straightforward manner if we make use of the principle of copying:

- (54) a. It is cold in the classroom
 b. It is hot outside
 c. It is boring in Bangor

Under this analysis, the deep structure of (54 a.) could be something like:



Notice that the phrase marker (55) underlies (54 a.) as well as:

(56) The classroom is cold

In other words, (56) and (54 a.) are stylistic variants in the same way that:

(57) It surprised me that he came late

and:

(58) That he came late surprised me

are stylistic variants. The derivation of (54 a.) from (55) is effected in two steps. First, the Loc-P in the classroom is copied at the end of the sentence: viz.

(59) In the classroom is cold in the classroom

Second, the first occurrence of the Loc-P in the classroom is pronominalized to yield (54 a.). On the other hand, the derivation of (56) from (55) is effected by deleting the preposition in - cf. Fillmore's suggestion concerning prepositions which introduce noun phrases in the subject position, where he argues that prepositions associated with NP's are deleted if the NP is made the subject of the sentence.³²

Before leaving this issue, it would be enlightening to discuss in the following subsection the Kiparskys' analysis of the proform it.

4.5.3. The Kiparskys' analysis of "it":

The Kiparskys distinguish between two types of the proform it that appears with NP complements.³³ The first, which they

call "factive" it, serves as an optional reduction of the noun phrase complement antecedent head-noun fact: e.g.

(60) Bill resents it that people are always comparing
him to Mozart

The second type, which they call "expletive" it, is considered by them as a semantically empty prop which is automatically introduced in the place of extraposed complements in sentences like:

(61) It is obvious that Muriel has lost her marbles

Another distinction that they draw between the factive it and the expletive it is that the presence of the former blocks the formation of relative clauses while the latter permits it. They cite the following two examples:

(61) a. *This is the book which you reported it that
John plagiarized

b. That is the only thing which it is obvious that
he had not expected

A moment's reflection, however, will convince us that the Kiparskys' two criteria for distinguishing between the two types of it are not solid. First, the head-noun fact is not always replaceable by the proform it. For instance, the verb forget is marked by the Kiparskys for a factive complement, and as a matter of fact it does co-occur with a factive complement, for witness the acceptability of:

(62) She had forgotten the fact that I sold my car a
long time ago

However, the substitution of the NP the fact by the proform it

does not seem to produce an acceptable sentence, though it should do under the Kiparskys' analysis. Witness the doubtful acceptability or rather the unacceptability of the following sentence:

(63)?* She had forgotten it that I sold my car a long time ago

Another verb that is marked by the Kiparskys for a factive complement is ignore, but - like forget - this verb can take, as its object, an NP complement preceded by the head-noun fact but not an NP complement preceded by the proform it: cf.

(64) a. I ignored the fact that she was my sister
b.*I ignored it that she was my sister

Thus it becomes obvious that the Kiparskys' claim that the head-noun fact is always replaceable by a factive it is false. Secondly, notice that the head-noun fact when preceding a gerundial instead of a that-clause is never replaceable by it, evidence of the superficiality of the Kiparskys' analysis. Consider a verb like regret, which the Kiparskys use to support their analysis, when followed by a gerundial preceded by the head-noun fact:

(65) a. She regrets the fact of your having lost the game
b.*She regrets it (of) your having lost the game

Thirdly, and contrary to the Kiparskys' claim, the expletive it can precede certain non-factive NP complements functioning as objects to the main verb. For instance, the verb believe is specified by the Kiparskys for a non-factive NP complement and, according to their analysis, this verb cannot co-occur with an NP complement that is preceded by it. However, the

acceptability of the following sentence invalidates their claim:

(66) I don't believe it that he came to see me yesterday

Here are some more examples where the it appears with NP complements functioning as objects to verbs, which the Kiparskys consider non-factive:

(67) a. They doubt it that you will go

b. Everyone would prefer it for you to come early

c. Everyone would prefer it to come early

d. Alexander believed it that John was here yesterday³⁴

Thus we see that the Kiparskys are in error to draw such a distinction between what they call a "factive" it and an "expletive" it.

Their second criterion that distinguishes between the factive it and the expletive it is the susceptibility of sentences containing the latter to Relativization, while the presence of the former blocks this transformation. In other words they maintain that no element contained in an NP complement that is preceded by the factive it may be relativized, while elements contained in an NP complement that has been substituted by the expletive it are not subject to this constraint. This seems to suggest to them that Ross's Complex NP Constraint is operative on the former type of NP complement but not on the latter. Again this does not seem to be as valid a criterion as the Kiparskys think it to be. First, it has been pointed out by Ross that the presence of the proform it before a noun phrase complement does not block the relativization of any constituent NP in the noun phrase complement. The following two

sentences are considered by Ross both acceptable and grammatical:³⁵

- (68) a. The hat which I believe it that John was
wearing is red
b. This is a hat which I'm going to see to it
that my wife buys

In fact not many speakers would attest the acceptability of (68 a.) and (68 b.), but whether these two sentences are acceptable or not has nothing to do with the factivity - in the Kiparskys' sense - of the NP complement, for under their analysis verbs like believe and see to should not be followed by an NP complement that is preceded by it. Only factive verbs can do so, and believe and see to are not factive under their analysis. Secondly, the unacceptability of sentence (61 a.), which was cited by the Kiparskys, and which I repeat here for convenience as (69):

- (69) * This is the book which you reported it that John
plagiarized

is due to the fact that the embedded sentence itself is unacceptable. Sentence (69) derives from embedding the structure underlying:

- (70) * You reported it that John plagiarized the book
into the subject NP of the structure underlying:

- (71) This is the book

where (70) sounds unacceptable. Thus we would not expect (69) to be acceptable since (70) is not. Notice further that not all the elements contained in a non-factive complement are sensitive to Relativization. To use the Kiparskys' example,

the subject NP in the following sentence:

(72) It is obvious that the professor had not expected
this

is insensitive to Relativization as the unacceptability of
the following sentence shows:

(73)*The professor who it is obvious that had not
expected this is my uncle

We will argue in Chapter V (cf. 5.6.) that the relativization
of constituent NP's incorporated in noun phrase complements is
governed by general syntactic principles that are independently
motivated and that the acceptability or unacceptability of sen-
tences like those cited by the Kiparskys are not a function of
the presence of a "factive" or an "expletive" it.

Thus far we have shown some evidence that the distinction
drawn between the two types of the proform it is insufficient-
ly motivated. It is our contention that all the instances of
the proform it that we have encountered in this section are
pronominal remnants of NP complements.

4.5.4. Copying and suprasegmental differences:

We have pointed out that in certain circumstances the
copied NP complement is separated from the rest of the sentence
within which it is contained by means of a comma corresponding
to a pause or an open juncture in speech. However, before we
proceed to discuss this issue, two points need to be mentioned.

First, NP Copying, in the sense specified in 4.5.2. above,

is never - as far as I can see - obligatory, if an infinitival or a gerundial is generated as a subject NP; although in practice it seems to be preferred in the case of the infinitival.³⁶ If, however, an infinitival is generated as an object NP, its copying is not generally permitted except under certain conditions, when it is usually obligatory. Infinitival copying is obligatory, for instance, if an infinitival is generated as the direct object of some member of prepositional verbs including: expect (of), require (of), desire (of), and possibly one or two others: cf.

- (74) a. *We expect to do your best of you
 b. We expect it of you to do your best

Another possibility would be for the NP you in (74 a.) to be made the direct object of the matrix verb, in which case it would move immediately after the main verb - and automatically it will lose its associated preposition: viz.

- (75) We expect you to do your best

However, it is not certain that (75) derives from the structure underlying (74 a.). Most probably, it derives from the following underlying structure:

- (76) $\left[\begin{array}{c} \text{We} \\ \text{NP} \end{array} \right]_{\text{NP}} \left[\begin{array}{c} \text{expect} \\ \text{VP} \end{array} \right] \left[\begin{array}{c} \left[\begin{array}{c} \text{you do your best} \\ \text{S} \end{array} \right]_{\text{NP}} \\ \text{S} \end{array} \right]_{\text{VP}}$

through the application of Subject-Raising. Alternatively, it could be argued that, like (74), (75) derives from a deep structure like:

- (77) $\left[\begin{array}{c} \text{We} \\ \text{NP} \end{array} \right]_{\text{NP}} \left[\begin{array}{c} \text{expect} \\ \text{VP} \end{array} \right] \left[\begin{array}{c} \left[\begin{array}{c} \text{you do your best} \\ \text{S} \end{array} \right]_{\text{NP}} \\ \text{S} \end{array} \right]_{\text{NP}} \left[\begin{array}{c} \left[\begin{array}{c} \text{of you} \\ \text{PP} \end{array} \right]_{\text{PP}} \\ \text{PP} \end{array} \right]_{\text{VP}}$

First, the subject NP of the embedded sentence - i.e. you - is deleted under coreferentiality with the NP you in the Prepositional Phrase, and, secondly, the NP you in the Prepositional Phrase is made the object of the main verb. In fact such an analysis is not highly motivated, in particular the rule that moves the NP in the Prepositional Phrase to function as the object of the matrix verb. Notice that this rule, if it exists, is not an instance of Raising for the NP in the Prepositional Phrase is dominated by the topmost S. Nonetheless, this rule, if it exists, is similar to the rule that relates:

(78) a. I bought John a book

to:

(78) b. I bought a book for John³⁷

The second point that needs to be mentioned here is that some American linguists claim that a gerundial clause cannot be extraposed - in Rosenbaum's sense (e.g. Rosenbaum, 1967.a; Emonds, 1970). Rosenbaum, for instance, considers the following sentence unacceptable (cf. Rosenbaum, 1967.a: 79):

(79) * It annoys me John's playing the bugle

whereas he considers (80) perfectly acceptable:

(80) It annoys me for John to play the bugle

A careful study will, however, show us that this claim is false, for it is often possible for a gerundial to be copied, particularly if it occurs in the subject position. To many speakers of British English, sentence (79) is perfectly acceptable whether or not the copied gerundial is separated from the rest of the sentence by a comma. Moreover, hundreds of examples of sentences incorporating a copied gerundial are to be

found in grammar books and linguistic papers. The following examples are taken from various grammar books and linguistic works and the original punctuation is retained.³⁸ Notice in these examples that it is possible for the gerundial to be extraposed - in Rosenbaum's sense - whether its subject NP is expressed or not: cf.

- (81) a. It has been just splendid meeting you here
b. It was the merest chance my taking these pills
c. It is no use your trying to deceive me
d. You must find it rather dull living here all by yourself
e. What a relief it has been your looking over this chapter
f. It's the oddest thing in the world our meeting like this
g. It will be no good my trying for a fellowship
h. But it's different me going and you going
i. Do you think it's any use me trying to vamp him?
j. It's so queer you and he being brothers
k. It's such a nuisance everything being shut today
- (82) a. It is worthwhile summarising his accomplishments in England
b. It was nice having you to tea last Wednesday
c. It was difficult getting lifts in Brighton
d. It doesn't matter her disturbing me
e. She found it irksome having to accept hospitality...
f. It was no use the Postmaster-General hiding behind the skirts of the Treasury

- (82) g. It was bad enough Richard going up to Cambridge
in the autumn
- h. I am afraid it vexes Pamela my having brought Roly
- i. It's all very well their Landlords asking her to
vacate their flat
- (83) a. It was a difficult business lowering the long boats
into the tossing sea
- b. It's been a great pleasure showing you the sights
of London
- (84) a. It's nice resting here
- b. It's easy working on a job like this
- c. It was a mistake waiting out in the cold
- d. It's fun playing golf in the rain
- (85) a. It was pleasant swimming in the pool
- b. It would have been annoying their having failed
- c. It would be an honour my being invited
- d. It is an advantage being able to speak the language
- (86) It is fun talking to foreigners

Thus the claim that a gerundial cannot be copied - in the sense specified in section 5.5.2. - is false.

There are some linguists who claim that for the Extra-position of the gerundial to produce an acceptable sentence, a comma-like pause should precede the extraposed gerundial. For instance, Emonds accepts:

(87) It was understandable, John's owning two cars
but rejects as unacceptable (cf. Emonds, 1970: 86):

(88)* It was understandable John's owning two cars

From the examples cited in (81-86) we notice that this claim

is false, for most - in fact the overwhelming majority - of the extraposed gerundials in these examples are not preceded by a comma. Furthermore, Emonds' claim is vague for he does not define precisely what he means by a "comma-like pause", for pauses are usually said to be of two types: filled and unfilled. Silence, if sufficiently long, may be interpreted by the linguist as a pause and thus of the unfilled type - i.e. nil phonation with nil articulatory friction and these may be expiratory, inspiratory or zero flow. Filled pauses, on the other hand, are often represented in orthography by um, er, etc. However, it seems likely that speakers, when pausing, are prone to sustain phonation wherever possible (in order perhaps to discourage interruption by others). Hence, pauses may occur where phonetically realized as contrastive lengthening of the pre-pausal segment. This can only be effective, of course, with continuant sounds or voiced sounds.³⁹

However, in order to see whether Emonds' claim is valid or not, a set of minimal pairs of sentences was investigated. The first sentence in each pair contained an extraposed gerundial, whereas the second contained an extraposed infinitival. The pairs investigated are the following:

- (89) a. It's no use her listening at keyholes
b. It's no use for her to listen at keyholes
- (90) a. It's no good your telling me not to worry
b. It's no good for you to tell me not to worry
- (91) a. It may distress John Mary's seeing his relatives
b. It may distress John for Mary to see his relatives
- (92) a. It's nice resting here
b. It's nice to rest here

- (93) a. It annoyed me his coming late
b. It annoyed me for him to come late
- (94) a. It's fun playing golf in the rain
b. It's fun to play golf in the rain

The aim of the test was twofold. First, to see whether or not the underlined constructions in (89-94) are preceded by a pause, and, secondly, to see whether there is any lengthening in the pre-pausal segment or not. To this end, two native speakers, who were not aware of the purpose of the test, were asked to read these sentences as they would normally read them with no special emphasis on any particular constituent. The two informants are linguistically trained. The sentences were not put in the order given above. The instruments used for recording these sentences were an electro-aerometer and a minograph.

The electr-aerometer is an instrument that measures the volume velocity of air and registers variations in the air-flow during expiration and inspiration through nose and mouth up to about 200 c/s. It also shows articulatory movements, e.g. the exact point of time for the opening and closing of the soft palate. The output from the aerometer is recorded by a minograph which shows: mouth output, nose output, and glottis function.

Here is a summary of the readings of the recorded sentences with regard to pause and lengthening of pre-pausal segments.⁴⁰

(i) It's no use her listening at keyholes

First informant: There was a clear evidence of silence of about 15-20 c/s preceding the gerundial clause.

Second informant: There was a highly questionable silence of about 5 c/s preceding the gerundial clause.

(ii) It's no use for her to listen at keyholes

First informant: There was a clear evidence of silence of, at least, 20 c/s preceding the infinitival clause.

Second informant: There was a likelihood of silence of about 5 c/s preceding the infinitival clause.

(iii) It's no good your telling me not to worry

First informant: There was no trace of silence or lengthening of the pre-pausal segment preceding the gerundial clause.

Second informant: Same as first informant.

(iv) It's no good for you to tell me not to worry

First informant: There was a highly questionable silence of about 5 c/s preceding the infinitival clause.

Second informant: Same as first informant.

(v) It may distress John Mary's seeing his relatives

First informant: There was a clear evidence of lengthening the pre-pausal sound [n:] in John, at least, 20 c/s.

Second informant: Same as first informant.

(vi) It may distress John for Mary to see his relatives

First informant: There was evidence of silence of about 9 c/s preceding the infinitival clause.

Second informant: There was hardly any silence or lengthening of the sound preceding the infinitival clause.

(vii) It's nice resting here

First informant: There was a faint trace of silence of about 5 c/s preceding the gerundial clause. This

trace could be possibly due to lengthening the [s] sound in nice.

Second informant: There was no trace of silence or lengthening.

(viii) It's nice to rest here

First informant: There was a vague trace of silence or lengthening of about 5 c/s.

Second informant: Same as first informant.

(ix) It annoyed me his coming late

First informant: There was a clear evidence of lengthening the pre-pausal sound [i:] about 17 c/s.

Second informant: There was evidence of lengthening the pre-pausal sound [i:] about 10 c/s.

(x) It annoyed me for him to come late

First informant: Lengthening of the pre-pausal sound [i:] about 19 c/s.

Second informant: Lengthening of the pre-pausal sound [i:] about 10 c/s

(xi) It's fun playing golf in the rain

First informant: There was evidence of lengthening the pre-pausal sound [n] of about 15 c/s.

Second informant: Same as first informant.

(xii) It's fun to play golf in the rain

First informant: There was no sign of silence or lengthening.

Second informant: Same as first informant.

However, in order to get more revealing results, it was felt that the two native speakers should read the same set of sentences again. This they were asked to do a week later. The

recording this time was done on a tape recorder and the aim of the test was to examine:

- a. silence before the extraposed clauses
- b. lengthening of the sound preceding the extraposed clauses
- c. the intonational patterns used in these sentences.

Here is a summary of the readings of the recorded sentences with regard to intonation, pause, and lengthening of the pre-pausal segment.

(i) It's no use her listening at keyholes

First informant:

- a. It's 'no vuse her \listening at \keyholes
- b. There was some pause before the gerundial clause and possibly some lengthening of the sound [s] that precedes the clause.

Second informant:

- a. It's \no vuse her \listening at \keyholes
- b. There was some pause before the gerundial clause, but it was not as clear as in the case of the first informant.

(ii) It's no use for her to listen at keyholes

First informant:

- a. It's 'no vuse for her to ,listen at \keyholes
- b. There was no tangible pause or lengthening before the infinitival.

Second informant:

- a. It's \no vuse for her to 'listen at \keyholes
- b. There was no tangible pause before the infinitival clause, though it was felt that the pre-clausal sound [s] was lengthened.

(iii) It's no good your telling me not to worry

First informant:

- a. It's no \good your /telling 'me not to \worry
- b. There was no tangible pause or lengthening preceding the gerundial.

Second informant:

- a. It's no \good your 'telling me 'not to \worry
- b. Same as first informant.

(iv) It's no good for you to tell me not to worry

First informant:

- a. It's no \good for you to \tell me not to \worry
- b. There was no tangible pause or lengthening preceding the infinitival.

Second informant:

- a. It's no \good for \you to 'tell me 'not to \worry
- b. Same as first informant.

(v) It may distress John Mary's seeing his relatives

First informant:

- a. It may distress /John 'Mary's 'seeing his \relatives
- b. There was some lengthening of the pre-clausal sound [n] .

Second informant:

- a. It may distress /John 'Mary's 'seeing his \relatives
- b. There was some pause preceding the gerundial clause.

(vi) It may distress John for Mary to see his relatives

First informant:

- a. It 'may distress /John for /Mary to see his \relatives
- b. There was no tangible pause or lengthening of the pre-clausal sound.

Second informant:

- a. It may distress 'John for 'Mary to 'see his \relatives
- b. Same as first informant.

(vii) It's nice resting here

First informant:

- a. It's \nice 'resting 'here
- b. There was no tangible pause but there was possibly a lengthening of the pre-clausal sound [s] .

Second informant:

- a. It's \nice 'resting 'here
- b. Same as first informant.

(viii) It's nice to rest here

First informant:

- a. It's \nice to 'rest 'here
- b. There was no tangible pause but possibly some lengthening of the pre-clausal sound [s] .

Second informant:

- a. It's \nice to 'rest 'here
- b. Same as first informant.

(ix) It annoyed me his coming late

First informant:

- a. It annoyed 'me his 'coming \late
- b. There was some lengthening of the pre-clausal sound [i:] .

Second informant:

- a. It annoyed me his 'coming 'late
- b. There was some pause preceding the gerundial clause.

(x) It annoyed me for him to come late

First informant:

- a. It \annoyed 'me for 'him to 'come \late
- b. There was no tangible pause or lengthening of the pre-clausal sound.

Second informant:

- a. It annoyed me for 'him to 'come 'late
- b. Same as first informant.

(xi) It's fun playing golf in the rain

First informant:

- a. It's /fun playing /golf in the \rain
- b. There was no tangible pause or lengthening of the pre-clausal sound.

Second informant:

- a. It's \fun playing 'golf in the 'rain
- b. There was some pause preceding the gerundial clause.

(xii) It's fun to play golf in the rain

First informant:

- a. It's /fun to play /golf in the \rain
- b. There was no pause or lengthening of the pre-clausal sound.

Second informant:

- a. It's \fun to play 'golf in the 'rain
- b. Same as first informant.

Scanty as they are, these data could be revealing and enlightening. If this test proves anything at all, it proves that the assumption that extraposed gerundial clauses are necessarily preceded by a pause is false. The inferences that could be safely generalized are the following:

- (1) Not all extraposed gerundial clauses are preceded by a pause.
- (2) Some extraposed infinitival clauses are preceded by a pause or a lengthening of the pre-pausal sound.
- (3) There does not seem to be any significant intonational difference between a sentence incorporating an extraposed gerundial clause and the same sentence incorporating an extraposed infinitival clause.

On the whole, extraposed infinitivals with no expressed subject do not tend to be preceded by either a pause or a lengthening of the preceding segment: cf. examples xii and viii. On the other hand, extraposed infinitivals with an expressed subject seem to be preceded by a lengthening of the immediately preceding segment, if this segment is a vocoid - cf. example X - or by some silence if the preceding segment is a contoid - cf. examples vi, iv, and ii. Gerundials, on the other hand, are likely to be preceded by some silence if the immediately preceding segment is a voiceless contoid: cf. examples vii and i; and they are likely to be preceded by lengthening of the immediately preceding segment if this segment happens to be a vowel: cf. example ix, or a continuant: cf. examples ii and v. In other contexts, an extraposed gerundial does not tend to be preceded by either a silence or a lengthening of the immediately preceding segment.

As mentioned above, these remarks are far from being conclusive and it could be the case that they are completely wrong. A detailed study of this question is far beyond the scope of

the present work.

4.5.5. Raising and meaning preservingness:

We argued in 4.5.1. above that there is a transformation in English, and possibly in other languages, that moves a constituent from an embedded S to a higher S. We gave some examples of Subject-Raising, where the subject NP of an embedded sentence is moved to become a constituent of the topmost S. In addition to Subject-Raising, the syntax of NP complementation in English has a rule of Object-Raising that moves the object NP of an embedded sentence to become a constituent of the topmost S.⁴¹ Under this analysis the following sentence:

(95) John is easy to please

derives from the structure underlying:

(96) It is easy to please John

through the application of Object-Raising. Notice that the raised object - i.e. John - functions as the subject of the matrix sentence.

It has been the tradition in transformational grammar to assume that sentences like (95) and (96) are stylistic variants. Sentence (95) derives from the structure underlying (96) through the application of the following transformations: Object-Raising, deletion of the subject NP of the embedded sentence, and deletion of the complementizer for. However, it has been recently argued that sentences like (95) and (96) differ as to topic, for whereas (96) is neutral, with respect to top-

ic, (95) requires John to be the topic (cf. Chomsky, 1971; Lakoff, 1971.a). This contrast becomes clearer when we consider the following three sentences, which have been assumed in the Standard Theory to be derived from the same deep structure:

- (97) a. It is easy to play sonatas on this violin
- b. This violin is easy to play sonatas on
- c. Sonatas are easy to play on this violin⁴²

George Lakoff points out that (97 a.) is neutral with respect to topic, (97 b.) requires this violin to be the topic, whereas (97 c.) requires sonatas to be the topic (cf. Lakoff, 1971. a: 262-3). It should be noted that within an Aspects framework, there would be no way of accounting for the semantic subtleties involved in the derivation of (97 b.) from the structure underlying (97 a.), since this model assumes transformations to be meaning-preserving. Two alternatives suggest themselves here. First, that the three sentences in (97) do not have identical deep structures. In other words, (97 b.) and (97 c.) are not related transformationally to (97 a.). Such a proposal has been made by Perlmutter, but it has been subsequently pointed out by Chomsky that Perlmutter's arguments are not persuasive.⁴³ Since Perlmutter's work has not been available to me, I do not take any position on this issue here. Nonetheless, the Raising transformation seems to be a highly motivated transformation of wide application, at least from a syntactic point of view. The second alternative would be to allow certain transformations to change meaning and to drop the requirement that all transformations are meaning preserving. This position has been recently argued for by Chomsky.

It was considerations such as "topic", "comment", "pre-supposition", etc., that led Chomsky to modify the Standard Theory by postulating surface structure semantic interpretation rules. In other words, he has come to concede that certain transformations change meaning. In this respect Chomsky argues that (97 b.) and (97 c.) seem different in meaning, in that (97 b.) makes an assertion about this violin, whereas (97 c.) makes an assertion about sonatas. Nonetheless, he maintains that the two sentences share a single system of grammatical relations and have the same truth conditions. He further points out that what is involved in (97 b.) and (97 c.) is a relation of topic-comment which must be distinguished from that of subject-predicate (cf. Chomsky, 1971: 209). It is his contention that the relation of (97 b.) to (97 a.) is similar to the relation between:

(98) This book I really enjoyed

and:

(99) I really enjoyed this book

On the topic-comment relation Chomsky (1965: 221) says: "It might be suggested that Topic-Comment is the basic grammatical relations of surface structure corresponding (roughly) to the fundamental Subject-Predicate relation of deep structure. Thus we might define the Topic-of the Sentence as the leftmost NP immediately dominated by S in the surface structure, and the Comment-of the Sentence as the rest of the string. Often, of course, Topic and Subject will coincide...". Thus it becomes obvious that Chomsky considers matters as "topic" and "comment" properties of the surface structure. On the other hand, George Lakoff claims that such matters are best accounted for in terms

of a semantic, rather than a syntactic, deep structure of the type that has come to be known as Generative Semantics (cf. Lakoff, 1971.a: 262-3). We do not take any position on this matter now. Suffice it at this point to note that though (97 b.) and (97 c.) are syntactically (i.e. transformationally) related to (97 a.), the three sentences are not exactly synonymous.

After this digression, let us examine some more examples where Raising does not seem to be meaning preserving. Consider, for instance, the following three examples, which have been assumed in the Standard Theory to be derived from the same deep structure:

- (100) a. It appears that John is shooting at Bill
b. John appears to be shooting at Bill
c. Bill appears to be being shot at by John⁴⁴

Sentence (100 b.) is derived from the structure underlying (100 a.) through the application of Subject-Raising, whereas (100 c.) is derived from the structure underlying (100 a.) through the application of Object-Raising. Barbara Partee (1971: 17-8) argues that there is a difference among the sentences in (100), which seems to her to be a difference in point of view of the speaker. In (100 a.) the speaker, she argues, is taking in the whole situation, in (100 b.) the speaker is focussing on John, whereas in (100 c.) he is focussing on Bill. A few more examples are in order. Compare the following two sentences:

- (101) a. It is difficult to cross that river
b. That river is difficult to cross

where (101 b.) derives from the structure underlying (101 a.) through the application of Object-Raising. The difference between (101 a.) and (101 b.) is best accounted for in terms of the factors that cause the difficulty in crossing the river. Thus whereas in (101 b.) we might ascribe the difficulty in crossing the river to the nature of the river itself - i.e. internal factors - this interpretation is not applicable to (101 a.). In (101 a.) the difficulty in crossing the river might be ascribed to the existing situation, i.e. to external factors.

One point needs to be mentioned before we close this section, namely that Raising is an idiosyncratic property of the for-to complementizer and that neither the 's-ing complementizer nor the that complementizer admits of this transformation. For example, an adjective like difficult can take as its subject NP a gerundial or an infinitival, but Object-Raising is possible only in the case of the infinitival: cf.

- (102) a. To cross this river is difficult
b. This river is difficult to cross
- (103) a. Crossing this river is difficult
b. *This river is difficult crossing

There are, however, instances where it appears as if the subject NP of the gerundial has been raised to the higher sentence. This is particularly true of object gerundials whose subject NP is not genitivized. Consider the following examples:

- (104) a. I don't mind them coming with us
b. I don't object to him borrowing my book

However, though the morphological shape of the underlined pro-

nouns in these examples indicates that these pronouns are objects of the main verbs, a careful study shows that this is not the case. First, the unmarked form of the pronoun (in Barbara Strang's sense: cf. Strang, 1968: 115) is also possible in subject gerundials, an indication that the pronoun has been moved from the embedded sentence; otherwise the pronoun would be in the subjective form: cf.

(105) Him coming late annoyed Mary

However, if the underlined pronoun had been raised from the embedded sentence to function as the subject NP of the main verb, then its form should be he and not him. In fact this is not the case for we have seen in the preceding chapter - cf. 4.5. - that whereas many native speakers attest (105), very few indeed attest:

(106) ?* He coming late annoyed Mary

Thus the morphological shape of the subject NP of the gerundial should not be taken as an indication that this NP has been moved from the embedded sentence. Secondly, notice that if we assume that the pronoun in (105), for instance, has been raised, then we have to distinguish between two rules of Subject-Raising: one operating on gerundials and another operating on infinitivals, for unlike the rule that operates on infinitivals, the one that operates on gerundials does not shift the remnant of the embedded sentence to the end of the main sentence: viz.

- (107) a. He is likely to come ← for he to come is likely
b. *Him annoyed Mary coming late ← His coming late
annoyed Mary

Obviously what is involved in the type of the gerundial we have been examining, is a rule that deletes the genitive marker from the subject NP of a gerundial. This, as we have seen in section 3.5., is often possible, although it seems to involve a change in meaning. We return to discuss the status of the genitive marker in the following section; the question of the difference in meaning between a gerundial with a genitivized subject and one with a non-genitivized subject will be discussed in the following chapter:

Further support to our assumption that Raising does not apply to gerundials comes from considering the following data:

- (108) a. Everyone expects you to be punctual
b. You are expected by everyone to be punctual
- (109) a. Everyone admires you driving the Rolls Royce
b. *You are admired by everyone driving the Rolls
Royce

The fact that (108 b.) is acceptable means that the pronoun you is the direct object of the main verb in (108 a.), otherwise it would not have undergone NP Preposing under Passivization. This leaves no doubt that this pronoun has undergone Subject-Raising and that by the time Passivization applies, it is immediately dominated by the higher VP. This is not, however, the case with the pronoun you in (109 a.), otherwise (109 b.) should be grammatical, which it is not.

4.6. Complementizers

The term "complementizer" designating the particles that,

for-to, poss-ing, where poss is the possessive 's morpheme, is due to Rosenbaum. A second major set of complementizers, with which this study does not deal, includes the Wh complementizers, as in the following cases:

- (1) a. I do not remember when I met him
- b. I often wonder why she does these things
- c. She knows where you live, etc.

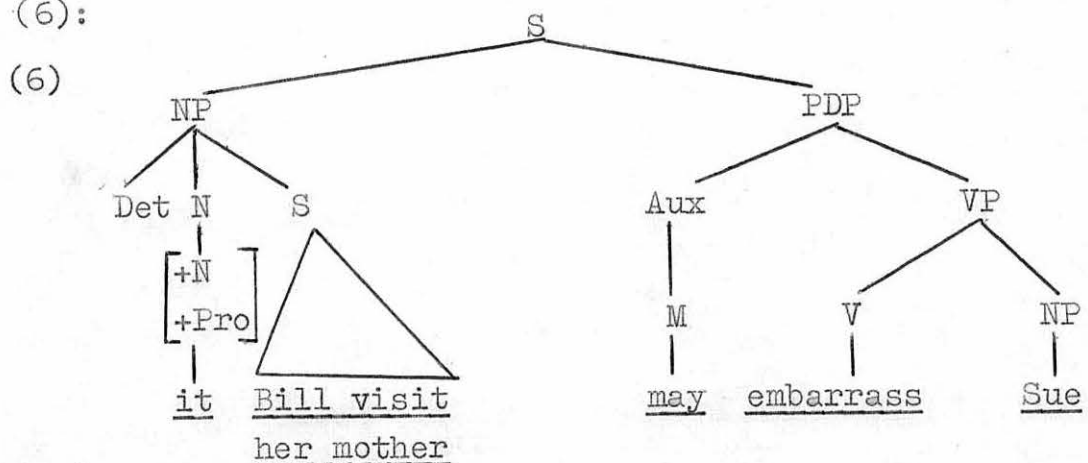
Also functioning as complementizing morphemes are if and whether, as in the following sentences:

- (2) a. I doubt if she is coming
- b. I wonder whether he is going

In virtually all analyses of complementation within the framework of generative grammar, complementizers have been viewed as syntactic markers having neither semantic content nor significant syntactic function.⁴⁵ Examples like the following:

- (3) For Bill to visit her mother may embarrass Sue
- (4) That Bill visits her mother may embarrass Sue
- (5) Bill's visiting her mother may embarrass Sue

would differ only by optional transformations in deriving from a common deep structure, roughly similar to that represented in (6):



In other words, sentences like (3), (4) and (5) have been assumed to be stylistic variants and to differ only with regard to the complementizer that applies to the embedded sentence in (6) - i.e. Complementizer Placement transformation.⁴⁶

The introduction of the complementizer transformationally was chosen in preference to its introduction by means of a phrase structure rule on the grounds that complementizers are not the property of any particular sentence or set of sentences, but are a function of complement sentences only. This guarantees that non-embedded sentences will never appear with complementizers. For instance, strings like those in (7) are not sentences of English:

- (7) a. *That John has done it
- b. *For John to have done it
- c. *John's having done it

However, Rosenbaum concedes that there is no compelling evidence for accepting one formulation over the other, though he does not say what sort of evidence might be compelling.

It is our contention that complementizers are far from the semantically empty, syntactically trivial particles they have been assumed to be in most previous works on transformational grammar. In fact there is evidence from syntax, semantics and universal grammar that lends credibility to our assumption that complementizers are present in deep structure. In what follows I will give several arguments that complementizers should be generated in deep structure. I will further argue that the gerundial complementizer is the suffix -ING and

that the genitive marker 's is not a complementizer but a surface structure marker. Similarly, I will argue that the infinitival complementizer is TO and that the morpheme For is not to be treated as a complementizer.

4.6.1. Complementizers in deep structure:

The first argument for generating complementizers in deep structure is based on semantic considerations. If we assume that transformations do not change meaning, or, to quote Chomsky (1965: 132) "do not introduce meaning-bearing elements", then we should expect sentences (3-5) above to have precisely the same meaning since they are under the aforementioned analysis stylistic variants. Unfortunately, this does not seem to be the case, for a careful study of the different types of complementizer will show us that there are subtle semantic differences involved in the choice of one complementizer rather than another. These semantic differences, though informally discussed in traditional literature, have unfortunately been completely ignored in transformational literature. Admittedly, these semantic differences are dimly understood at the present, but the fact that such differences exist invalidates the hypothesis that complementizers are introduced transformationally (given that transformations are meaning-preserving).

On careful scrutiny one would not fail to recognise that sentences (3) and (4), which I repeat here for convenience as (8) and (9) respectively, are not stylistic variants:

(8) For Bill to visit her mother may embarrass Sue

(9) That Bill visits her mother may embarrass Sue

Sentence (9) but not (8) presupposes that Bill does in fact visit her mother. This could be demonstrated by negating the two sentences:

(10) For Bill to visit her mother may not embarrass Sue

(11) That Bill visits her mother may not embarrass Sue

Again (11) but not (10) presupposes that Bill visits her mother.⁴⁷ Notice further that the modal may in (8) has future reference only, whereas in (9) it is ambiguous between a future and a present reference. The verb visit in (8) is ambiguous in the sense that it may refer to a single occurrence (event) or a habitual action, whereas in (9) it refers to a habitual action only. Notice, finally, that no choice of modals or tense in (9) makes it synonymous with (8). For example, in (12):

(12) It may embarrass Sue that Bill $\left. \begin{array}{l} \text{will} \\ \text{might} \\ \text{etc.} \end{array} \right\}$ visit her

mother

it is presupposed that Bill will, might, etc. visit her mother, a characteristic totally lacking in (8), as can be seen from (13):⁴⁸ cf.

(13) It may embarrass Sue for Bill to visit her mother,
so he $\left. \begin{array}{l} \text{will} \\ \text{might} \\ \text{etc.} \end{array} \right\}$ not visit her

Sentence (8) but not (9) could be plausibly paraphrased by:

(14) It may embarrass Sue if Bill visits her mother
Indeed, it has been observed by some linguists that for some classes of verbs there is a difference in meaning associated with complementizer choice (cf. Anscombe, 1967; Bladon, 1968; Bolinger, 1968; Lascelles, 1970). A few more examples will help to clarify the point under discussion.

At first sight, it is easy to fall in with the impression that the difference between for-to and 's-ing complements is only mechanical, with no freedom of choice and hence no meaning. There are, however, verbs that admit either the infinitival or the gerundial. For example, the verb like combines with a gerundial and an infinitival: cf.

- (15) a. I like his being nice to you
b. I like him to be nice to you

Speakers asked which of these would be used where one expresses the wish that someone will be nice, unhesitatingly pick (15 b.), but (15 a.) if it is suggested that someone's actual behaviour is referred to. Additional minimal pairs like (16) and (17):

- (16) Can you remember to do that?
(17) Can you remember doing that?

show a contrast between something projected and something actually done. On the other hand, pairs like (18) and (19):

- (18) His failing the exam is tragic
(19) For him to fail the exam is tragic

show a contrast between something real and something hypothetical. We shall be returning to the question of semantic contrast between gerundials and infinitivals in a subsequent

chapter - cf. 5.8. below - and shall not, therefore, pursue it in detail at this point.

It is not only gerundials and infinitivals that show semantic contrast; other types of noun phrase complement exhibit a similar kind of contrast. A few examples to show the semantic contrast between infinitivals and that-clauses are in order. Consider, for instance, the following two examples:

(20) It is possible that John is working

(21) It is possible for John to be working

A moment's reflection on these two examples will convince us that they are not synonymous in all the senses they express. Notice that whereas (20) conveys a logical inference of possibility, (21) could refer to a physical possibility. Sentence (20) could be paraphrased by any of the following three sentences:

- (22) a. Perhaps John is working
- b. It could be that John is working
- c. John may be working

Sentence (21), on the other hand, can be paraphrased by:

(23) John can be working

or by:

(24) John could be working (i.e. physical possibility)

but not by (22 a.) or (22 c.). Notice again the contrast in meaning between:

(25) It is possible for her to become a lecturer⁴⁹
and:

(26) It is possible that she will become a lecturer

The strongest evidence that complementizers are not semantically empty comes from considering Wh-words and if as complementizers, and there is a strong reason for their being (cf. Rosenbaum, 1967.a: 32; Bresnan, 1970: 310-20). There is a striking and clear semantic difference traceable to the particles in the following two sentences:

(27) We don't care that he is a linguist

(28) We don't care if he is a linguist

Thus the conclusion seems reasonable that there is a properly semantic contrast between the nominalizations carried by the various complementizers. Such a fact does invalidate the hypothesis that complementizers do not exist in deep structure but are introduced transformationally, for if they are introduced transformationally, there will be no way of accounting for the type of semantic contrast the various complementizers exhibit. A theory that stresses the significance of semantics in linguistic description and in the grammar should, of course, be able to account for the underlying kinships among structures that are superficially different, and at the same time it should be able to account for the underlying differences between forms that are superficially the same. In postulating that all types of noun phrase complement have a similar deep structure, we not only overlook the semantic contrasts that the different types of noun phrase complement show, but we also demonstrate that the language is systematically redundant. Indeed it has been pointed out by Bolinger that a language that "permitted syntactic divergences to be systematically redundant would represent a strange kind of

economy". (cf. Bolinger, 1968: 127).

The second argument against introducing complementizers transformationally is based on theoretical considerations that have a strong bearing to universal grammar, namely the question whether transformations can introduce morphological elements into embedded sentences. It has been convincingly argued by Chomsky that while transformations may remove material from embedded sentences, no transformations can insert morphological material into lower sentences. Chomsky argues that this principle, which is a general condition on transformations, covers a large number of convincing cases and "in the distinction it makes between superficially analogous cases that differ only in that one but not the other is based on an independently existing embedded sentence, it provides an interesting confirmation of transformational grammar". (Chomsky, 1965: 146-7). Bresnan points out that since Chomsky (1965), there has appeared confirmation of this universal. She gives the following examples from Dougherty (1968):⁵⁰

- (29) a. The men each pray in their own way (_S that God will save them)
b. The men pray each in their own way (_S that God will save them)
c. *The men pray in their own way (_S that God will each save them)
- (30) a. The men each thought (_S that the cop had arrested the others)
b. *The men thought (_S that the cop had arrested each other)

Dougherty argues that there is a quantifier movement transformation which sends the string:

(31) The men each will speak to the others
into either:

(32) The men will each speak to the others
or:

(33) The men will speak each to the others

From the latter string the reciprocal sentence:

(34) The men will speak to each other

is derivable. Now given Chomsky's universal, there is an immediate explanation for the ungrammaticality of (29 c.) and (30 b.).

Thus it becomes obvious that the act of introducing complementizers transformationally violates a highly motivated universal.

The third argument against introducing complementizers transformationally is based on observations that have to do with simplicity of grammatical description. We have noticed that not all verbs taking complements can co-occur with every complementizer. Consider the following data:

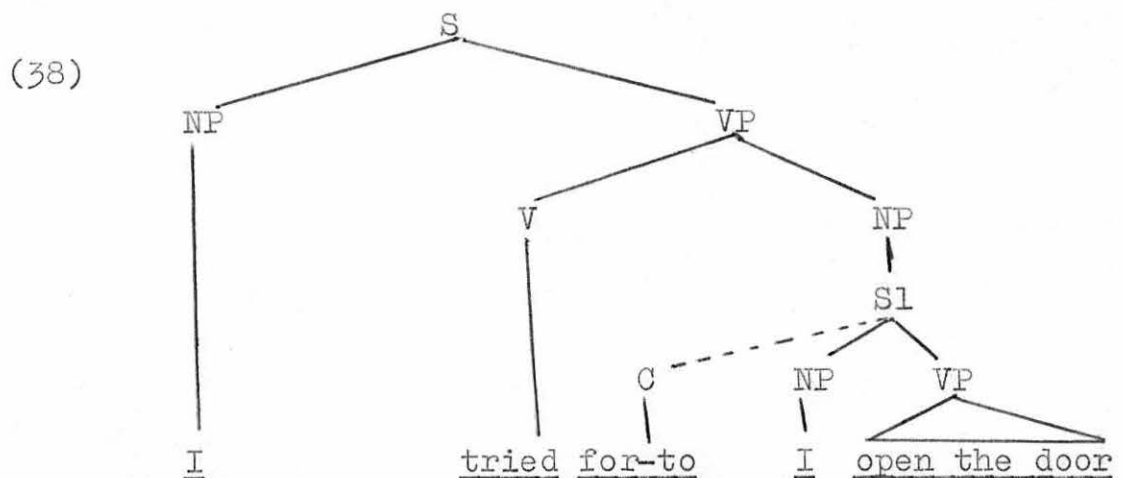
- (35) a. I tried to open the door
b. I tried opening the door
c.*I tried that I open the door

It therefore becomes evident that some characteristic of the main verb or predicate (nominal or adjectival) in the main clause governs the choice of complementizers. If we assume

that complementizers are attached to sentences by transformational rules, the subcategorization features determining which complementizer is attached, can be viewed as instructions indicating which rule or rules apply to the structure in question (i.e. a rule feature is associated with verbs and predicates). It is noteworthy in this respect that this phenomenon cannot be handled in terms of subcategorization rules in the Chomskyan sense because complementizers are not generated in deep structure. To explain the point under discussion, let us consider a sentence like (35 a.). First, the verb try can combine either with a gerundial or an infinitival:

- (37) $\left[\begin{array}{l} + \text{ for-to} \\ + \text{ 's-ing} \end{array} \right]$

If, on the other hand, we choose to generate complementizers in deep structure, verbs may be subcategorized for the type of complement they take. Under this analysis, the various complementizers will be listed in the lexicon, and there would be no need for the type of rule feature instanced in (37). To see how this analysis works, let us consider the structure underlying (35 a.), which could be roughly represented by the following phrase marker:



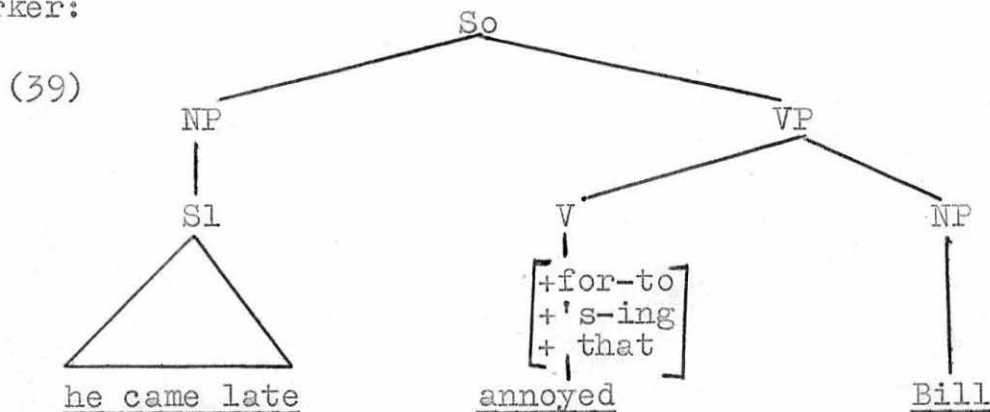
I have assumed here that there is a node \leftarrow complementizer -C attached to the embedded sentence S1 in deep structure. Since the complementizer for-to is listed in the lexicon, then there would be no need to mark the verb try for this complementizer. Instead, the verb try will be specified in the lexicon as having the following contextual feature:

(37) try, $\left[+ V, + \text{————— for-to } \sim S \right]$

A similar notation for subcategorizing the verb believe has been used by Chomsky (cf. Chomsky, 1965: 94): viz.

(38) believe, $\left[+ V, + \text{————— NP}, + \text{————— that } \sim S \right]$

There are further disadvantages associated with any analysis that introduces complementizers transformationally. It has been pointed out by Bresnan that because Complementizer Placement transformations have to be sensitive to the rule feature on the higher verb or predicate, there is a peculiarity in their operation: they cannot insert complementizers into a sentence S during the transformational cycle on S, but during the cycle on the next sentence dominating S. The key point is that the Complementizer Placement could not occur on the first cycle because "the transformation would not know which complementizers are permitted by the main verb until the next cycle". Consider, for instance, the following phrase marker:



On the first cycle - i.e. S1 - no transformation could apply to insert the complementizer for the reason mentioned above. On the second cycle - i.e. So - the transformation inserting any of the three complementizers for-to, 's-ing, or that applies, because the main verb annoy is marked $\left[\begin{array}{l} + \text{ for-to} \\ + \text{ 's-ing} \\ + \text{ that} \end{array} \right] .$

It is noteworthy in this respect that Complementizer Placement is - according to the advocate of this analysis - the first rule on the cycle. Notice that if we assume that Complementizer Placement applies on So and not S1, we will not be able to know which other transformations are possible on S1, for we have noticed that certain transformations are idiosyncratic properties of certain complementizers. For instance, the Subject-Raising and Object-Raising transformations apply on sentences incorporating infinitivals only but not gerundials or that-clauses. In other words, the presence of complementizers on S1 determines which transformation could apply and which transformations could not. This does not seem to be possible under an analysis that introduces complementizers transformationally, for the Complementizer Placement transformation would not know which complementizer to select before the cycle on the topmost S starts. If complementizers are generated in deep structure this problem does not arise.

Research in different languages seems to suggest that every sentence, embedded or non-embedded, is associated in deep structure with a complementizer. In fact there are languages where complementizers do show up in surface structure in non-embedded declarative sentences. In Arabic, for instance, there are three complementizers, which all start with

highly similar phonetic sequences.⁵¹ First, the complementizer ?æn co-occurs with verbs like ?uri:du (I want): cf.

- (40) ?ur:du ?æn ?æʔhæbæ
 I want C I go:
I want to go

Secondly, the complementizer ?innæ co-occurs with verbs like ?æqulu (I say): e.g.

- (41) ?æqulu ?innæ lmʌdræ sɔh dʒæ mi:lɔh
 I say C the school pretty
I say that the school is pretty

Thirdly, the complementizer ?æn næ co-occurs with verbs like hæ mʌstu (I whispered): e.g.

- (42) hæ mʌstu ? ?æn næ lwæ læ dæ qʌd ma:t
 I whispered C the boy had died:
I whispered that the boy had died

What is interesting is that the second complementizer - i.e. ?innæ - shows up in surface structure in non-embedded declarative sentences. Consider, for instance, the following examples:

- (43) a. ?innæ lmʌdræ sɔh dʒæ mi:lɔh
 c the school pretty:
The school is pretty
- b. ?innæ lwæ læ dæ mæ hirun
 c the boy clever:
The boy is clever
- c. ?innæ lkitæ bæ mufi:dun
 c the book useful:
The book is useful

We notice that the particle introducing each of these sentences is the same complementizer that introduces embedded sentences of the type instanced in (41). This complementizer is optionally deleted in non-embedded sentences but is obligatorily retained in embedded ones, thus all the following sentences are acceptable:

(44) a. ælmadræsah dʒæmi:ləh cf. (43 a.)

The school is pretty

b. ælwæləedu mæhi:run cf. (43 b.)

The boy is clever

c. ælkitæbu mufi:dun cf. (43 c.)

The book is useful

The fact that the complementizer ʔinnæ occurs overtly in non-embedded sentences makes it necessary for complementizers, at least for this alternant - i.e. ʔinnæ - to be generated in deep structure by means of a phrase structure rule. To account for sentences like those in (46), Arabic should have a rule like (45):

(45) $S \rightarrow \text{ʔinnæ} \text{ } \wedge \text{ } NP \text{ } \wedge \text{ } VP$

This rule will not only account for sentences like those in (43), but it will automatically account for complementizers in embedded sentences. It could be the case that the three complementizers ʔinnæ, ʔænnæ, ʔæn, are in fact one complementizer, the phonetic shape of which is governed by the preceding verb. If this is the case, then (45) will also account for the occurrence of the two complementizers ʔænnæ and ʔæn in embedded sentences. However, whatever the precise formulation of the rule that introduces complementizers in Arabic might be, is of no direct relevance to the issue under dis-

cussion. Suffice it to mention that there should be a phrase structure rule in Arabic that expands the category S into a complementizer , an NP, and a VP.

Arabic does not seem to be the only language in which complementizers show up in the surface structure of declarative non-embedded sentences. The same phenomenon seems to occur in Spanish. The following example is borrowed from Ross: (1970: 270):

(46) Que mi gato se enratono

That my cat got sick from eating too many mice =
My cat got sick from eating too many mice

where the complementizer Que (= that) introduces the declarative sentence:

(47) Mi gato se enratono =

My cat got sick from eating too many mice

However, it has been pointed out by Ross that the sentence with Que is more emphatic and insistent than the one without it. The same type of phenomenon occurs in Welsh. There are certain types of non-embedded sentences in Welsh that contain the particle y, which usually introduces subordinate clauses. Compare, for instance, the following two sentences:

(48) dw i in credu y welodd John Mair

am I in believe that saw John Mary =
I believe that John saw Mary

(49) bod y mae John yn dod

be that is John in come =
John is coming

I am not sure, however, whether or not the particle y is a

complementizer.

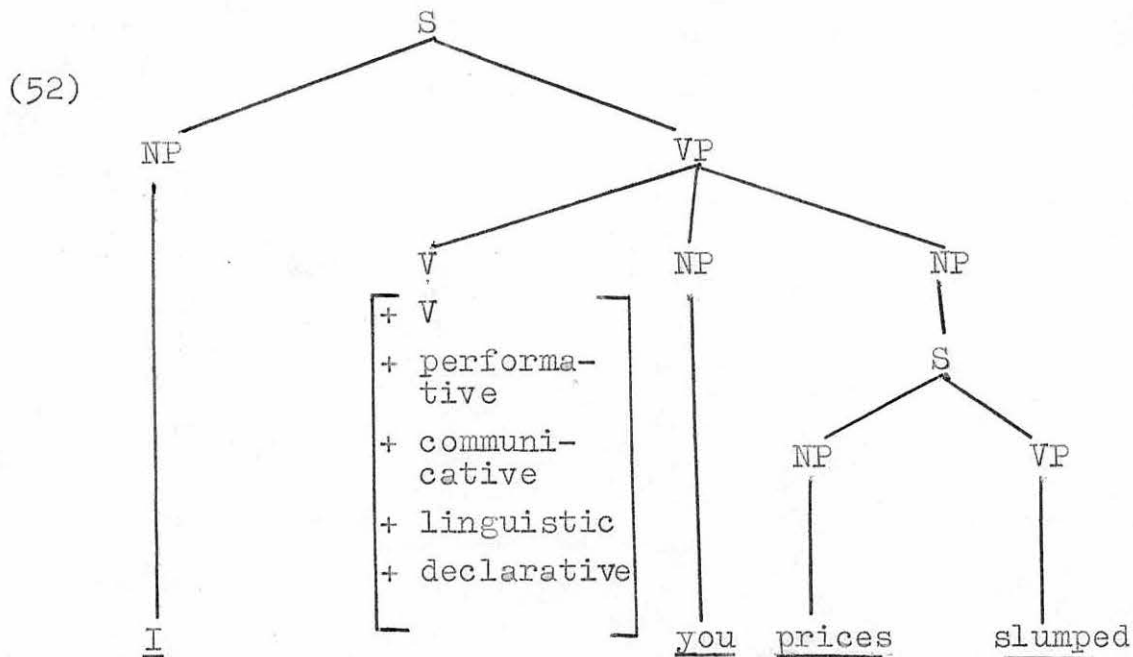
The facts presented above could not be easily accounted for if complementizers were not generated in deep structure. In fact some linguists have gone to the extent of claiming that a rule like:

$$(50) S \rightarrow (\text{Complementizer}) \sim S$$

is a general rule that accounts for the occurrences of S's, whether embedded or not, in all languages. Chomsky, Bresnan and Emonds believe that each sentence should have as one of its immediate constituents the node complementizer (cf. Bresnan, 1970: 300; Emonds, 1970: 3). Ross, on the other hand, has argued that every declarative sentence is derived from a deep structure containing as an embedded clause what ends up in surface structure as an independent clause. Thus a sentence like:

(51) Prices slumped

will, under his analysis, have an abstract deep structure like:

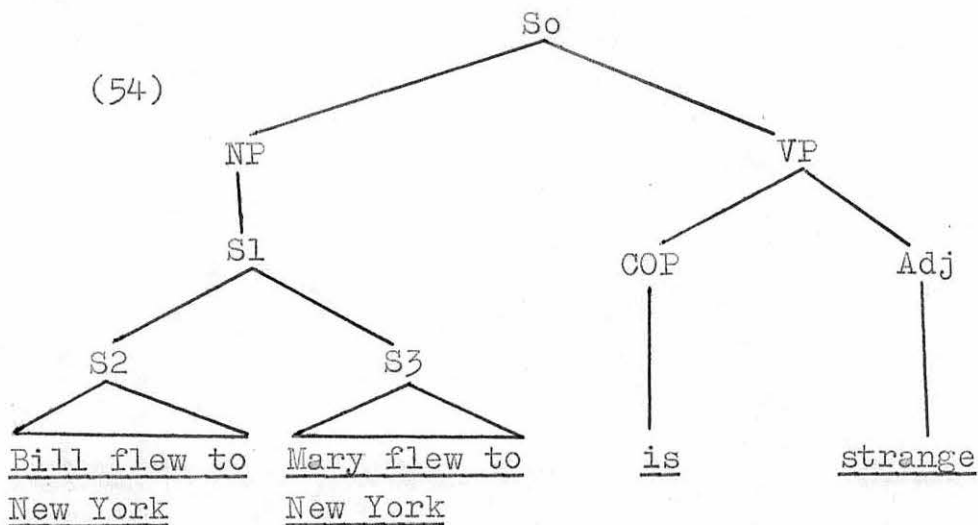


Ross gives fourteen arguments to support his analysis (cf. Ross, 1970).

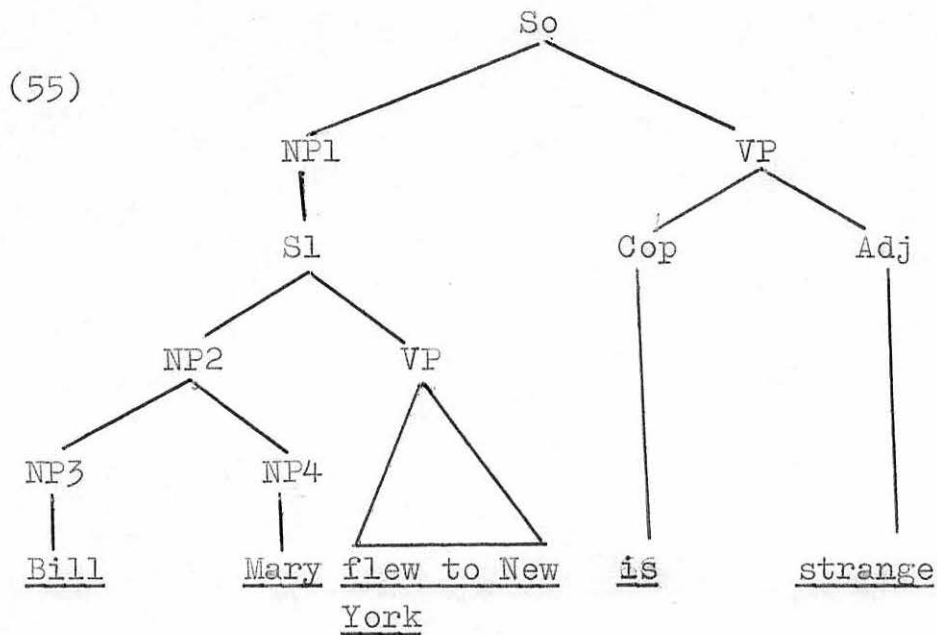
The final argument for generating complementizers in deep structure is due to Joan Bresnan (1970: 306-10). She notes that if complementizers were not distinguished in deep structure but rather inserted by a transformational rule, certain grammatical conjoined sentences would be underivable. Bresnan bases her argument on sentences like (53):

(53) That Bill and that Mary both flew to New York is strange

which has as its deep structure something like:



Here the structural description of Conjunction Reduction is met at S1, but the structural description of Complementizer Placement cannot be met until So, since it is governed by the Adj in the higher VP. After Conjunction Reduction has applied to (54) on S1 cycle, a derived structure roughly like (55) is produced:



But there is no way for Complementizer Placement to produce (53) from this structure. In fact Complementizer Placement applies on the So cycle in (55) to produce:

(56) That Bill and Mary flew to New York is strange

But under this analysis, there would be no way of accounting for the fact that there are two occurrences of the complementizer that in (53). Bresnan suggests that it could be the case that there is a later rule that optionally distributes a complementizer preceding a co-ordinate structure over the conjoined NP's. However, Bresnan notes that any such ad hoc solution would fail: from:

(57) I prefer that a man and his wife { be similar
resemble each other

would come:

(58)*I prefer that a man and that his wife { be similar
resemble each other

Thus the solution seems logical that the two complementizers

should be present at S2 and S3 in (54). This, as noted above, would not be possible under an analysis that introduces complementizers transformationally, for the Complementizer Placement transformation has to be sensitive to the rule feature on the higher verb or adjective. However, if we choose to generate complementizers in deep structure, the derivation of (53) from (54) will be automatically accounted for.

4.6.2. Another alternative:

It could be argued, however, that since the Standard Theory has been modified to admit of transformations that change meaning (cf. Chomsky, 1971), it would be simpler if we allowed complementizers to be introduced transformationally. Of course, there will be surface structure semantic interpretation rules to account for the semantic differences exhibited by the various complementizers. By postulating these surface structure semantic interpretation rules, the argument that complementizers should be generated in deep structure loses its force. Furthermore, it could be argued that the Complementizer Placement transformation is a precyclical rule that applies to embedded sentences before other transformations. By postulating such a rule, some of the arguments for generating complementizers in deep structure, in particular the Conjunction Reduction argument, become invalid. However, it would not be difficult to show that such an approach is ad hoc and not highly motivated.

First, on grounds of generality, this approach is inadequate, for if we recognise complementizers other than that,

for-to, 's-ing, we will not be able to account for the semantics of other complementizers like how, why, whether, if, etc. Admittedly, the complementizers that, for-to and 's-ing bear some semantic affinities to each other and this is why some linguists treat these three complementizers separately from other complementizers (e.g. Robin Lakoff, 1968; Rosenbaum, 1967.a). Any theory of NP complementation that purports generality however, should satisfactorily account for occurrences of all the various other complementizers. Even if we allowed complementizers to be introduced transformationally, our analysis would run into various difficulties. The first thing we have to do is extend the surface structure semantic interpretation rules in an undesirable manner to account for the various semantic contrasts that complementizers exhibit. In fact the surface structure semantic interpretation rules postulated by Chomsky and Jackendoff are not meant to account for all the semantic properties of the underlying structure (cf. Chomsky, 1971; Jackendoff, 1969), but for matters like "topic", "comment", "focus", "presupposition", "scope of negation", etc. In fact it would be simpler if we generated complementizers in deep structure, where each complementizer would be assigned a set of features compatible with its environment, in particular the main verb, the predicative adjectival or the predicative nominal. Another point to notice in this respect is that Chomsky's surface structure semantic interpretation rules do not seem to account for meaning resulting from the introduction of new morphological elements like complementizers, for instance. His surface structure semantic rules are, it seems, meant to account for the change in meaning that results from

the re-ordering of constituents and the placement of some suprasegmental features like stress. Secondly, even if we assumed that the Complementizer-Placement transformation is a precyclical rule, some of the problems mentioned in the preceding subsection would remain unsolved.

In summary, there is no syntactic or semantic motivation at all for introducing complementizers transformationally. On the contrary, there is evidence from syntax and semantics that complementizers are present in deep structure. First, complementizers are not semantically empty syntactic markers and thus they cannot be introduced transformationally, for transformations cannot introduce meaning bearing elements. In addition transformations cannot introduce new morphological elements into embedded sentences. Thirdly, complementizers subcategorize verbs, predicative adjectivals and predicative nominals, and they should - on theoretical grounds and on grounds of simplicity in linguistic description - be generated in deep structure. Fourthly, in some languages complementizers occur in non-embedded declarative sentences. Fifthly, considerations of other transformations and syntactic phenomena require complementizers to be present in deep structure.

4.6.3. "For" and "'s":

We mentioned at the beginning of this section that the genitive marker 's is not to be treated as a complementizer, and that the gerundial complementizer is to be the suffix -ING on its own. Similarly, the morpheme for that precedes the sub-

ject NP of certain infinitivals is not to be considered a complementizer or part of the infinitival complementizer. In other words, the infinitival complementizer is to be the morpheme To on its own. This conclusion could be justified on various grounds.

First, the genitive marker 's and the morpheme for are a property of surface structure subject NP's contained in gerundials and infinitivals respectively. We showed in Chapter II - cf. 2.6. - that if the embedded sentence that underlies a gerundial undergoes Passivization, then it is the deep structure object NP that receives the genitive marker: viz.

- (59) a. John kissed Mary
- b. John's kissing Mary
- c. Mary's being kissed by John

If the genitive marker was a property of the deep structure NP, then instead of (59 c.) we should have:

- (60) * Mary being kissed by John's

These observations also apply to the morpheme for that precedes the subject NP of certain infinitivals in the sense that it is not a property of the deep structure NP but a property of the surface structure subject NP. For instance, if the structure underlying the following infinitival:

- (61) For John to have kissed Mary

undergoes Passivization, then the morpheme for is automatically placed before the preposed NP: viz.

- (62) a. For Mary to have been kissed by John: cf.
- b. *Mary to have kissed by for John

One could, of course, argue that 's and for are present in deep structure and that there is a later rule that attaches these elements to surface structure subject NP's. However, there is evidence that it would simplify grammatical description not to have these two elements generated in deep structure.

Limiting ourselves to the genitive marker 's, we noticed in Chapter III - cf. 3.5. - that the genitivization of the subject NP of a gerundial is not always possible. We noticed also that the non-genitivized form of the subject NP of a gerundial seems to be possible in almost all contexts. Notice further that if we were to treat 's as a complementizer, then we would need a rule to delete this complementizer in the following contexts:

- a. If the subject NP is of the type that does not allow genitivization.
- b. If the subject NP of the gerundial is deleted.

In these two contexts the deletion of the genitive marker is obligatory. On the other hand, there would be other contexts where this rule applies optionally to account for cases like:

(63) I don't mind him coming with us

Thus it would be simpler if the genitive marker 's were not generated in deep structure.

The analysis of for as a complementizer runs into similar difficulties. First, this morpheme is obligatorily deleted in the following contexts:

- a. If the subject NP of the infinitival is deleted
- b. If the subject NP of the infinitival undergoes Raising

c. If the sentence underlying an infinitival with an expressed subject undergoes certain transformations, in particular Passivization: cf. 3.3.1. Again it would seem simpler if we did not allow for to be generated in deep structure.

This analysis, however, runs into difficulties, for by postulating that for and 's are not generated in deep structure, we violate Chomsky's (1965: 146) principle, namely "no transformations can insert morphological material into lower sentences". It could, however, be argued that a rule or an instruction would be associated with the complementizer -ING to the effect that the surface structure subject NP of an embedded sentence that takes the complementizer -ING receives - in certain circumstances - the genitive marker. Similarly, there would be a rule or instruction associated with the complementizer TO that the surface structure subject NP of an embedded sentence is preceded by the morpheme for. This would guarantee that infinitivals whose subject NP's undergo Raising are not subject to this rule. Similarly, sentences underlying surface structure subjectless infinitivals are not subject to this rule. I am not sure, however, whether or not such a rule could be independently motivated. We return to discuss this matter in Chapter V - cf. 5.8.

4.7. Conclusion:

We have discussed in this chapter various syntactic and semantic phenomena related to noun phrase complementation. The important points that emerged from this study are the

following:

- (i) All instances of headed gerundials fall within the category of complex nominals, for Ross's Complex NP Constraint is operative on every occurrence of headed gerundials.
- (ii) Not all instances of headed infinitivals are complex nominals, for some of them do not exhibit the properties of complex nominals. However, it has been shown that the S underlying an infinitival complement gets pruned under certain circumstances, and this gives rise to headed infinitivals that do not exhibit the characteristics of a complex nominal.
- (iii) Headless gerundials and infinitivals do not seem to fall within the class of complex nominals. In other words, the S's underlying gerundials and infinitivals seem to be the sole constituents of the dominating category. It might be the case, however, that some instances of headless gerundials and infinitivals are not the sole constituents of the dominating category. This issue will be discussed in detail in the following chapter - cf. 5.6. - where we shall discuss the semantics of NP complementation, in particular gerundials and infinitivals.
- (iv) The proform it that is usually associated with NP complement is a pronominal remnant of the copied NP and a priori it cannot be generated in deep structure.
- (v) Complementizers are not semantically empty syntactic markers, for they have various syntactic and semantic roles to play, and thus they should be incorporated in the phrase structure rules of the grammar. The gerundial complementizer is the suffix -ING on its own, for the genitive marker 's is a surface structure phenomenon. Similarly, the infinitival complementizer is the morpheme TO, for, like the genitive marker 's,

the morpheme for is a characteristic of the surface structure structure NP.

The first three points - we have argued - are best accounted for in the phrase structure rules of the grammar, for we have seen that any N is susceptible to modification by various types of linguistic elements, some of which are S's while others are not. To explain the point under discussion, consider the following, in particular the type of the complement that follows the head-noun:

- (1) a. The fact that he might win
- b. The idea of his being a secret agent
- c. The opportunity for him to leave
- d. The question whether he will come
- e. The problem of how you should go there
- f. His eagerness to come
- g. The habit of interrupting
- h. The reason for his refusal
- i. The idea of the party

We have seen that the analysis of these nominals in terms of nominalization transformations operating on underlying S's encounters various difficulties, the solution of which would certainly complicate the transformational component of the grammar and would extend it in an undesirable and ad hoc way. An important point to note in this respect lies in the fact that complementizers are not semantically empty, and so the transformational analysis would not be able to account satisfactorily for the various syntactic/semantic relationships holding between an antecedent head-noun and its complement.

Thus following Chomsky's suggestion, we have suggested that the category NP should be expanded into an optional Det, an N, and an optional Comp - i.e. complement: cf.

(2) NP \longrightarrow (Det) \wedge N \wedge (Comp)

where Comp stands in for an extensive variety of complements. This phrase structure rule will account for the derivation of a large number of complex and non-complex nominals, both of which are exemplified in (1). In addition, it will account for nominals of the type instanced in (3): cf.

- (3) a. The prospects for peace
b. The author of the book
c. A war of aggression against France
d. John's attitude of defiance
e. His mercy towards the victims⁵²

Thus any head-noun followed by a complement could be accounted for (i.e. generated) by the phrase structure rule in (2). This rule would also generate nouns that are not followed by any type of complement.

Headless sentential complements, on the other hand, seem to be in most cases the sole constituents of the dominating category, for the Complex NP Constraint is not operative on them. Thus, very tentatively, we might suggest that there is a phrase structure rule like:

(4) NP \longrightarrow Comp

which generates all types of headless complements like the underlined constructions in the following set of examples:

- (5) a. His having come late should make no difference

- (5) b. That the attempt must fail is obvious
 c. I want for you to be happy
 d. I require that she quit soon
 e. She does not know where you live
 f. I do not remember when I last met her
 g. I wonder if he is there
 h. Whether she is intelligent is none of my business
 i. To speak the language is an advantage
 j. She cannot understand why you left early
 k. Living in Bangor could be frustrating
 l. How he escaped from the prison is still a mystery
 m. She hates talking to foreigners

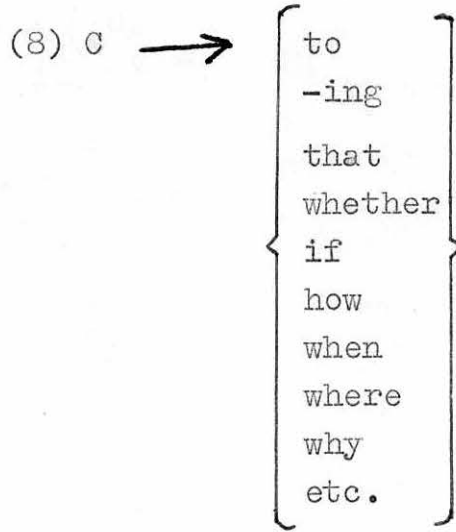
The two phrase structure rules in (2) and (4) could be amalgamated in one phrase structure rule like:

$$(6) \text{ NP} \rightarrow \left\{ \begin{array}{l} (\text{Det}) \sim \text{N} \sim (\text{Comp}) \\ \text{Comp} \end{array} \right\}$$

If we assume that some headless noun phrase complements originate in deep structure as headed complements, then this could be accounted for by the first part of the phrase structure rule in (6). There will be also a phrase structure rule that expands Comp into a variety of linguistic elements - including S's - that could modify antecedent head-nouns: cf.

$$(7) \text{ Comp} \rightarrow \left\{ \begin{array}{l} \text{S} \\ \text{NP} \\ \text{NP} \sim \text{S} \\ \text{Loc} \\ \text{etc.} \end{array} \right\}$$

Also there will be another phrase structure rule to enumerate the various alternants of C - complementizer: cf.



The node C-complementizer is generated under the immediate domination of the category S: viz.



It might be the case that each C will be assigned a set of semantic features compatible with ^{the}main verb, the predicative adjective or the predicative nominal in the matrix sentence. We return to this matter in 5.8. below.

The merits of such an analysis may be summarised as follows:

(i) It accounts for a wide variety of nominal constructions in a natural way, for in addition to accounting for complex nominals like:

(10) The fact that he lost the race

it also accounts for non-complex nominals like:

(11) The author of the book

and:

(12) The prospects for peace

Admittedly, this analysis complicates the base component of the grammar, but by adopting such an analysis, we avoid all

the problems that we have encountered in this chapter with regard to the type of analysis that would account for nominals like those instanced in (5) and (3) in terms of transformations operating on more basic deep structures. The enrichment of the categorial component will certainly permit simplification of the transformational component. The proper balance between the various components of the grammar is, as has been pointed out by Chomsky (1970.a), entirely an empirical issue. On grounds of empirical evidence and generality, the enrichment of the categorial component gains credibility over the enrichment of the transformational component.

(ii) The proposed analysis adequately accounts for the various semantic contrasts exhibited by the different complementizers. Needless to say this analysis solves various syntactic/semantic problems by generating complementizers in deep structure.

Footnotes to Chapter IV

1. The transformations enumerated in the preceding chapter are: Passivization, Pseudo-Clefting, Clefting, Pronominalization, Relativization, Conjoining, and Subject-Auxiliary Inversion.
2. Wigzell (1969) treats the morpheme of as part of the gerundial complementizer. It is his contention that the gerundial complementizer is "of.....ing" and not "Poss - ing". However, he does not talk about gerundive complements like those instanced in (2), where the linking morpheme is not of. Notice further that it would be ad hoc to distinguish between two types of gerundial complementizer, one occurring with headed gerundials and the other with headless ones. We return to this question in 4.6. below.
3. This is not to say, however, that these head-nouns derive from an underlying verbal or adjectival origin. Contrary to this, we will argue in this section, and in the following one, that any analysis of these head-nouns in terms of an underlying verbal origin runs into various difficulties.
4. The head-noun idea could be used in two different senses as in the following two sentences:
 - (i) The idea that a grammar could be formalized was first proposed by Chomsky
 - (ii) The idea of spending his life in prison horrified himThe noun idea in (ii) but not (i) is replaceable by the noun thought.
5. Another plausible paraphrase of the headed gerundial in (5 b.) is the following:
 - (i) Looking after five children involves (entails) a strain
6. This sentence will, however, be acceptable if the noun news is interpreted as "something important".
7. It should be noted, however, that there does not seem to be a precise semantic synonymy between the noun sense and the verb sense. As a noun, sense could mean "impression" or "feeling", but as a verb it could mean "suspect" or "be aware of".
8. For instance, this is the position taken by Lees (1963), Chomsky (1965) and Lakoff (1965). For a criticism of this analysis see: Chomsky (1970.a.).
9. See Ross, 1968: 70. However, Ross (1968: 77-88) points out that his Complex NP Constraint is not operative on certain complex nominals as the grammaticality of the following sentences shows:
 - (i) The money which I have hopes that the company will squander amounts to 400 dollars
 - (ii) The money which I will make a proposal that we squander amounts to 400 dollars

He argues that it seems to be the case that it is only in constructions like: make the claim that S, and have hopes that S that the Complex NP Constraint is not operative.

10. The following sentence, however, sounds acceptable:

- (i) The students, the idea of interviewing whom pleased us, all turned up on time

However, two points need to be mentioned here. First, the relativized NP has not been moved out of the sentence within which it is contained: viz.

(ii) The idea of interviewing the students pleased us and therefore this does not constitute a violation of Ross's Complex NP Constraint. Secondly, the relative clause in (i) cannot be interpreted in a restrictive sense.

11. Rosenbaum uses this phrase structure rule:

- (i) NP → (Det) - N - (S)

to generate headless noun phrase complements, where the N is always realized as the proform it. However, he does not indicate whether this phrase structure rule could also generate headed complements. Most probably it could, in which case the N would dominate a lexical item instead of the proform it.

12. For these various configurations see: Chomsky, 1965: 129; Emonds, 1970: 135; Katz and Postal, 1964: 54; Jacobs and Rosenbaum, 1968: 199; Langendoen, 1969: 68, 74; Ross, 1968: 70; Thompson, 1970.a: 32-5; Smith, 1964: 37-54; Wigzell, 1969: 4. Stockwell's work has not been available to me, but I encountered a reference to it in Thompson, 1970.a: 27.

13. It should be noted, however, that the analysis of headed NP complements in terms of X is Y does not, as we have seen, apply to all types of NP complements.

14. This does not seem, however, to be always the case, for consider the following two sentences:

- (i) Someone that John met in London is coming to the party

- (ii) Who that John met in London is coming to the party?

Notice, however, that if the relativized NP in the embedded S is in the subject position, the questioning of the antecedent head-noun will not be possible: viz.

- (iii) Someone that met John in London is coming to the party

- (iv) *Who that met John in London is coming to the party?

Notice further that if the pronoun who is used instead of that in (iii), then the sentence will be unacceptable: viz.

- (v) * Who who John met in London is coming to the party?

I can offer no explanation for the acceptability of (ii). It could be the case that what is involved in (ii) is an "echo question": cf. Huddleston, 1971: 6-7.

15. These two sentences would not be impossible, of course, if the relative clauses were non-restrictive.

16. The term Whiz-Deletion is borrowed from Langendoen (1970: 148). For a detailed discussion of the formation and reduction of relative clauses see: Bolinger, 1967; Smith, 1964; Mukattash, 1969.

17. Notice that sentences like:

(i) The telegram that John was dead never reached his wife are, to some speakers, perfectly acceptable. This seems to suggest that nouns specified [+ concrete] may be followed by a sentential complement. This phenomenon is, however, restricted to nouns like: telegram, message, order, etc. Alternatively, it could be the case that these nouns when followed by a sentential complement are being used in an abstract sense. The noun order in the following sentence:

(ii) The order to appear on parade this afternoon was pinned on the notice-board

could be possibly paraphrased by:

(iii) The { piece of paper } on which the order was
 { thing } written

However, this question is of no direct relevance to the present work.

18. Compare the following two examples:

(i) His eagerness to please was very great

(ii) His eagerness to please meant that he was really interested in the job

The complement-head relation does not seem to be the same in these two examples, which suggests that the analysis of the nominal in (18 a.) in terms of the structure underlying (18 b.) is incorrect. Indeed we will argue against this very analysis in the following subsection.

19. Notice that, unlike (30 c.), the following sentence sounds perfectly acceptable:

(i) The school, the plan to rebuild which did not succeed, is not far from here

For an explanation see footnote 10 above.

20. Of course, we do not expect constituent NP's contained in an infinitival complement with an expressed subject to be sensitive either to Wh-Fronting or Relativization: viz.

(i)* For whom did Mary disapprove of my desire to pass the exam

21. It should be noted that we have ignored complementizers in both (54) and (55). However, we return to discuss the status of complementizers in 4.6. below.

22. The phrase structure rule in (1) is used for expository purposes only, for the grammar cannot have this rule as an independent one. It could possibly be amalgamated with other phrase structure rules that expand the category NP: viz.

(i) NP → { (Det) N }
 { S }

23. Again the two phrase structure rules in (3) and (4) are used for expository purposes. We are assuming that there are two types of headless complements: one generated with a head-noun that gets deleted and another generated without a head-noun.

24. In fact Perlmutter does not give any particular name to

his constraint, this terminology being mine: cf. Perlmutter, 1971: 100, 108-22.

25. For this terminology and the uses of the echo question see: Huddleston, 1971: 6-8.

26. What appears in the bibliography as: Ross (1969) appeared first in 1966: for this information see Ross, 1969: 288. On the other hand, what appears in the bibliography as: Ross (1968) was written in 1967.

27. Witness, on the other hand, the unacceptability of the following two sentences:

- (i) ?* The boy who she approves of the plan to visit is quite ill
- (ii) ?* Who does she approve of the plan to visit?

28. It has been convincingly argued by Lakoff (1968.a: 13-29) that Rosenbaum's (1967.a) handling of the Pronoun Replacement transformation is incorrect. He also notes that Rosenbaum's ordering of transformations is wrong.

29. We return to discuss the facts that emerge from the examples in (33-37) in Chapter V - cf. 5.7.

30. To some speakers, the sentences in (45) will be more acceptable if the extraposed nominal is separated from the rest of the sentence by a comma. This orthographic device might correspond to a pause in spoken language.

31. The term "copying" is also used by Kiparsky and Kiparsky (1970) and Langendoen (1969).

32. Fillmore (1966: 19-33) considers a locative expression to be an NP which simply happens to be introduced by a certain kind of preposition.

33. All through this section we will be referring to the Kiparskys' paper "Fact" (1970).

34. Sentences (67 a.), (67 b.) and (67 c.) occur in Rosenbaum (1967.a) on pages 34, 53 and 53 respectively. Sentence (67 d.) occurs in Robin Lakoff (1968) on page 45.

35. See Ross, 1968: 68. However, some speakers do not find the two sentences in (68) acceptable.

36. This statement is based on my general impression more than on any factual evidence.

37. The rule that relates (78 a.) to (78 b.) is referred to by Emonds (1970: 51-4) as Dative Movement.

38. The sentences in (81) occur in Jespersen (1940) and Jespersen (1933); those in (82) occur in Scheurweghs (1959); those in (83) occur in Zandvoort (1969); those in (84) occur in Bolinger (1968); those in (85) occur in Wigzell (1969); and the one in (86) occurs in Emonds (1970).

39. This is a summary of the views of Crystal (1969: 166-72) on this issue.
40. I am grateful to Mr. R.A.W. Bladon and Mr. K.H. Albrow for helping in the analysis of the results of this test.
41. Since writing this section, Huddleston (1971: 161-4) came to my attention. He also uses the term Object-Raising to refer to the same syntactic phenomenon. Postal (1971: 27-31) refers to this rule as Tough-Movement since it is operative on infinitivals that co-occur with a set of semantically related adjectives comprising: tough, easy, difficult, etc.
42. Notice that from (97 a.) we can get:
(i) This violin, it is easy to play sonatas on
and:
(ii) Sonatas, it is easy to play on this violin
What is involved here is a rule of Topicalization that applies after NP Copying has applied to the structure underlying:
(iii) To play sonatas on this violin is easy
On the other hand, the two sentences in (97 b.) and (97 c.) seem to derive from the structure underlying (iii) through the application of the rule of Topicalization where the embedded sentence has not undergone NP Copying. It seems that the rule of Topicalization is a late rule. For a discussion of this rule see: Emonds, 1970: 18.
43. Chomsky (1971: 209) is referring to Perlmutter's Ph.D. thesis "Deep and Surface Constraints in Syntax".
44. Under our analysis, (100 a.) would differ from (100 b.) in having that as a complementizer in deep structure. See 4.6. below.
45. Joan Bresnan (1970) and the author independently arrived at the conclusion that complementizers should be generated in deep structure. My arguments, however, differ from hers. Other linguists consider complementizers as semantically empty syntactic markers: cf. Rosenbaum, 1967.a; Lakoff, G., 1968.a; Lakoff, R., 1968; Ross, 1968; Wigzell, 1969.
46. This is the term used by Rosenbaum, 1967.a: 5.
47. We return to the question of presupposition and the role it plays in the semantics of gerundials and infinitivals in the following chapter: cf. 5.3.6.
48. This observation is due to Bresnan (1970: 297).
49. The reader is warned of the possible ambiguity in this sentence, for the sequence for her could be understood as belonging to the matrix sentence. We discussed this issue in Chapter II: cf. 2.2.
50. Bresnan is referring to Dougherty's Ph.D. thesis: "A Transformational Grammar of Coordinate Conjoined Structures", which has not been available to me.

51. This observation is due to Ross (1970: 244-5), however, the argument and the examples are mine.

52. These examples are borrowed from Chomsky (1970.a: 196).

CHAPTER V

INTRA-SENTENTIAL RESTRICTIONS

AND SEMANTIC INCOMPATIBILITY

V. Intra-Sentential Restrictions and Semantic Compatibility

5.1. Introductory:

So far we have been discussing the syntactic properties of gerundials and infinitivals, but any valid treatment should take account of the semantic aspects of the two types of nominal. Some of the semantic properties of gerundials and infinitivals have been notionally discussed in the traditional literature, but paradoxically the semantics of the two types of nominal has been almost ignored in the transformational literature. This does not mean, however, that no distinction has been drawn between the different senses that a gerundial or an infinitival can express. We have seen in Chapter I - cf. 1.4.3.1. - that Lees (1963) talks of "factive" nominals as opposed to "action" nominals and that Wigzell (1969) distinguishes between three senses that a gerundial or an infinitival may express: "factive", "action" and "non-factive". We have noticed, however, that the criteria adopted by Lees and Wigzell in enumerating the various senses expressed by a gerundial or an infinitival are notional and far from being conclusive or precise. On the other hand, some linguists (e.g. Rosenbaum 1967-a), George Lakoff (1968-a) and Robin Lakoff (1968)) say nothing about the semantics of NP complements. The only serious attempt to characterize the semantics of NP complements is by the Kiparskys (1970). Again, their treatment is erratic in most respects and, unfortunately, it deals only with gerundials and that-clauses.

The semantics of gerundials and infinitivals is best considered from two angles. First, the semantic contrast between gerundials and infinitivals occurring in the same context, as exemplified in the following two sentences:

(1) a. I like to eat apples

b. I like eating apples

It is this type of semantic contrast that the traditional grammarians dealt with, albeit notionally.¹ Secondly, the sense in which a gerundial or an infinitival may be employed. In other words, a gerundial may be employed in various senses, and so may an infinitival. This type of contrast shows up, for instance, in the underlined gerundials contained in the following examples:

(2) a. I regret his having lost the race

b. Rowing this boat tired me out

It also shows up in the underlined infinitivals contained in the following examples:

(3) a. It surprised us for John to have lost the race

b. I'd like to buy a house in Bangor

It is our aim in this chapter to explore the semantic properties of gerundials and infinitivals. To this end, we will first enumerate the various contexts in which gerundials and infinitivals may occur and see whether the sense that a gerundial or an infinitival may express is a function of the linguistic elements contained in the matrix sentence, or a function of those contained in the embedded sentence, or a function of both. Then we will see whether there is any sort of interrelationship

between the syntax and the semantics of each of the two types of nominal. Finally, we will briefly discuss the semantic contrast between gerundials and infinitivals that occur in the same context and see how this contrast may be handled in the grammar. We will also investigate the contexts in which an antecedent head-noun that precedes a gerundial and an infinitival may be deleted.

5.2. Contextual restrictions:

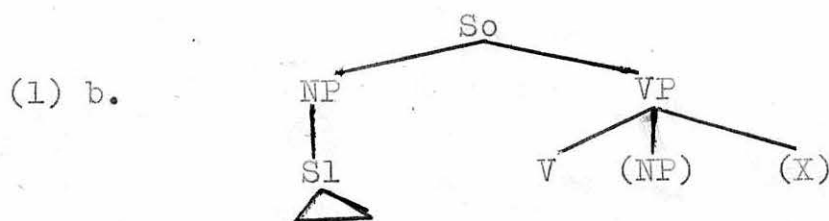
In this section we will enumerate the various contexts in which gerundials and infinitivals may occur. These contexts will be presented as formulas representing deep structure configurations. The various verbs, predicative adjectivals and predicative nominals that can appear in each formula with a gerundial or an infinitival or with both, will be listed in Appendix II. The lists in Appendix II are not claimed to be exhaustive, though I have included all cases that came to my attention during a thorough search through The Advanced Learner's Dictionary.

5.2.1. Formulas:

First Formula:

$$(1) a. \quad \left[\begin{array}{c} S \\ \hline NP \end{array} \right]_{NP} - \left[\begin{array}{c} V - (NP) - (X) \\ \hline VP \end{array} \right]_{VP^2}$$

Deep structure configuration:



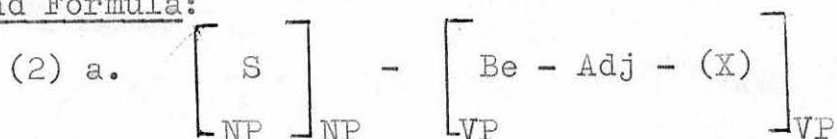
Examples:

- (1) c. (i) Abdul's winning the race pleased Magda
- (ii) For Ken to have refused the offer surprised her
- (iii) Losing a game so many times does annoy me
- (iv) John seems to be sick

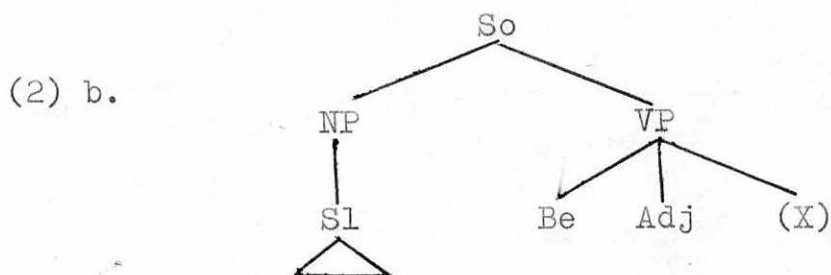
Remarks:

- (1) d. (i) The node (X) in (1 b.) is a string, possibly empty, of variables
- (ii) All the verbs that may occur in the formula in (1 a.) are listed in the List 1 in Appendix II.

Second Formula:



Deep structure configuration:



Examples:

- (2) c. (i) His being a linguist is irrelevant
- (ii) Your coming to Bangor is surprising for John
- (iii) It is annoying for Jean to have missed the train
- (iv) It was nice of you to have helped

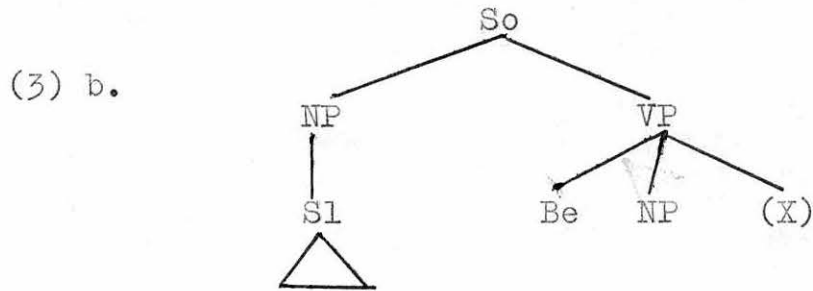
Remarks:

- (2) d. (i) The node (X) in (2 b.) is a prepositional phrase or a string of adverbials or both
- (ii) The adjectives that may occur in (1 a.) are listed in List 2 in Appendix II.

Third Formula:

$$(3) a. \left[\begin{array}{c} S \\ \hline NP \end{array} \right]_{NP} - \left[\begin{array}{c} Be - NP - (X) \\ \hline VP \end{array} \right]_{VP}$$

Deep structure configuration:



Examples:

- (3) c. (i) His being a doctor is an advantage
 (ii) It is fun to talk to her
 (iii) His saying that was a relief for us

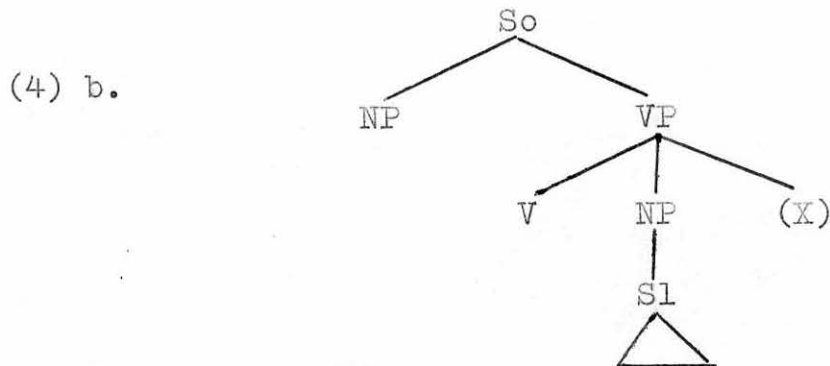
Remarks:

- (3) d. (i) The (X) in (3 a.) and (3 b.) is a prepositional phrase or a string of adverbials or both
 (ii) The nouns that occur in (3 a.) are listed in List 3 in Appendix II.

Fourth Formula:

$$(4) a. NP - \left[\begin{array}{c} V - \left[\begin{array}{c} S \\ \hline NP \end{array} \right] - (X) \\ \hline VP \end{array} \right]_{VP}$$

Deep structure configuration:



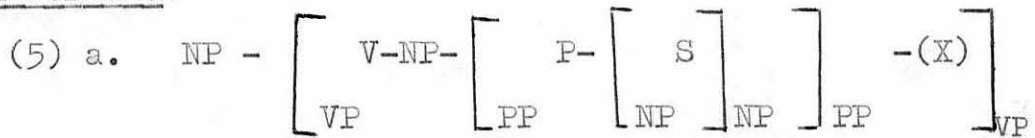
Examples:

- (4) c. (i) She regrets your losing the game
- (ii) Ken enjoys talking to her
- (iii) We assumed her to be innocent
- (iv) He'd like to meet her

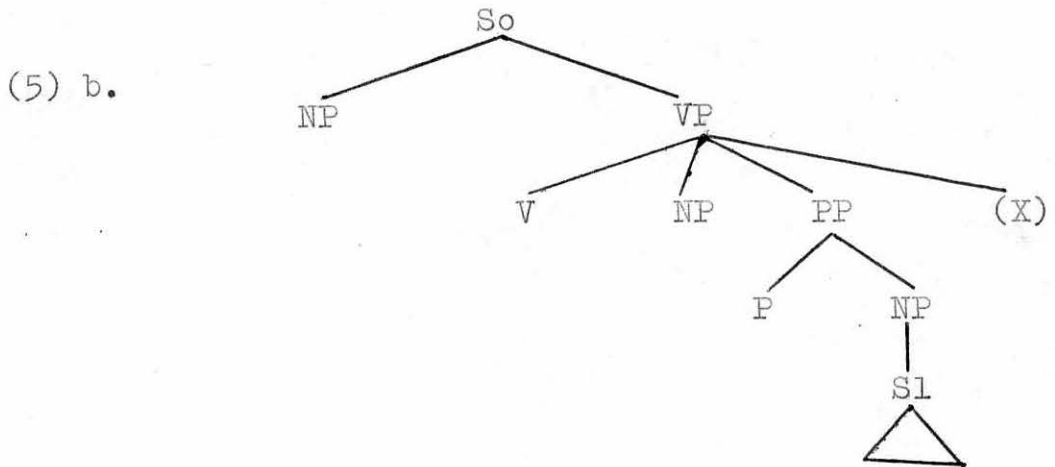
Remarks:

- (4) d. (i) The (X) in (4 a.) and (4 b.) is a string of variables
- (ii) The V in (4 b.) could be overtly followed by a preposition (e.g. object to, refrain from, etc.)
- (iii) All the verbs that occur in the formula (4 a.) are listed in List 4 in Appendix II.

Fifth Formula:



Deep structure configuration:



Examples:

- (5) c. (i) They accused Max of breaking the shelf
- (ii) They forced her to sign the cheque

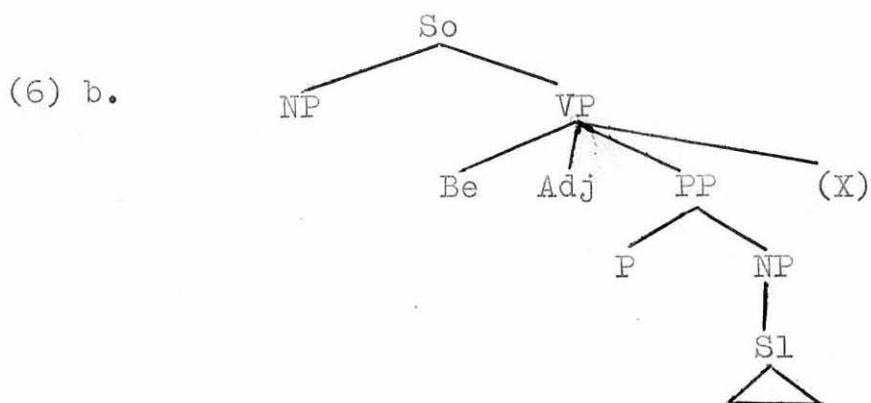
Remarks:

- (5) d. (i) The (X) in (5 a.) and (5 b.) is a string of variables
- (ii) The verbs that occur in this formula are listed in List 5 in Appendix II.

Sixth Formula:

(6) a. NP [Be - Adj - [P - [S] NP] PP - (X)] VP

Deep structure configuration:



Examples:

- (6) c. (i) John is keen on playing tennis
- (ii) Mary is ready to see you

Remarks:

- (6) d. (i) The (X) in (6 a.) is a string of variables
- (ii) The adjectives that occur in this formula are listed in List 6 in Appendix II.

5.2.2. Syntactic considerations:

A careful study of the matrix verbs, adjectives and nominals that may occur in the preceding formulas (cf. Appendix II) reveals that these lexical items could be subcategorized into

three groups according to the type of complementizer they co-occur with. First, those that co-occur with the gerundial but not with the infinitival complementizer: viz.

(7) He avoided meeting Sue

(8)*He avoided to meet Sue

Secondly, those that co-occur with the infinitival but not the gerundial complementizer: cf.

(9) We want to go to the pictures

(10)*We want going to the pictures

Thirdly, those that co-occur with both the gerundial and the infinitival complementizer: cf.

(11) a. Mike likes to meet girls

b. Mike likes meeting girls

In other words, the choice of the gerundial or the infinitival complementizer is governed by the main verb, the predicative adjective, or the predicative nominal in the matrix sentence. In a theory that generates complementizers in deep structure, these facts will be automatically accounted for in the phrase structure rules. The semantic contrast, if any, between gerundials and infinitivals that occur in the same context - cf. (11 a.) and (11 b.) - will be discussed in 5.8. below.

The second set of facts that emerges from the preceding formulas and the lists of lexical items in Appendix II has to do with the relation of the subject NP of the embedded S to the subject NP of the matrix S. In this respect we notice the following cases:

(i) Some lexical items require that the subject NP of the

associated gerundial/infinitival be identical to the subject NP of the matrix S: viz.

- (12) a. I failed to see the humour in the situation
b. *I failed (for) John to see the humour in the situation
- (13) a. John was active in reviewing books
b. *John was active in Mary's reviewing books

(ii) Some lexical items require that the subject NP of the embedded S be identical to the direct object in the matrix S: cf.

- (14) a. We persuaded John to commit himself
b. *We persuaded John for Sue to commit herself
- (15) a. Max addressed himself to solving the problem
b. *Max addressed himself to Mary's solving the problem

(iii) Some lexical items require that the subject NP of the embedded S should be different from the subject of the matrix S. This condition seems to be operative on infinitivals but not on gerundials: cf.

- (16) a. I screamed for John to commit himself
b. *I screamed for me to commit myself
c. *I screamed to commit myself

(iv) Some lexical items do not require any of the conditions in (i), (ii) and (iii) above: viz.

- (17) a. She regrets his having an accident
b. She regrets having shouted at you
- (18) a. I prefer her to stay here
b. I prefer to stay here

The conditions on the identity or non-identity of the subject NP of an embedded S to a preceding NP in the matrix S

are difficult to account for in terms of a theoretical framework like that presented in Chomsky (1965). In fact in that framework there would be no way of preventing the generation of ungrammatical sentences like those in (12 b.), (13 b.), (14 b.), (15 b.) and (16 b.), for Chomsky's strict subcategorization features and selectional features operate within a simplex S in a generalized phrase marker and they cannot be extended to determine the choice of a lexical item in the embedded S. In other words, there are no constraints on the insertion of lexical items in an embedded S imposed by any lexical item in the matrix S. However, it has been pointed out by Chomsky that since transformations have a filtering function, they will block the generation of certain ill-formed underlying structures. We have pointed out in the preceding chapter (cf. 4.4.3.) that Relativization would be blocked if the NP to be relativized in the embedded S is not identical with an NP in the matrix S, and that the resultant S would thus be characterized as ungrammatical. Thus the notion "well-formed deep structure" was not defined solely in terms of constraints on deep structures, but was a derivative notion, partly defined transformationally. Only those generalized phrase markers which passed through the transformational component with no transformations causing the derivation to 'block' would qualify as deep structures. To quote Chomsky (1965: 139), "The transformational rules act as a 'filter' that permits only certain generalized Phrase-markers to qualify as deep structures".

It has been subsequently argued by Perlmutter (1971: 4-9) that there exists in natural languages ill-formed generalized phrase markers generated by the base component which cannot be

characterized as such by means of blocking transformations.

Amongst these cases are:

(i) Sentences which manifest identity constraints between the subjects of certain verbs and the subject of their complement: cf. (12 b.) and (13 b.).

(ii) Sentences which manifest identity constraints between the object of certain verbs and the subject of the complement sentence: cf. (14 b.) and (15 b.). Perlmutter uses the term "Like-Subject" Constraint to refer to these two cases. To avoid confusion, we suggest that this term be retained to refer to the first case only (i.e. identity between the subject NP of the matrix S and the subject NP of the embedded S). On the other hand, we suggest that the cases of identity between the objects of certain verbs and the subject of the complement be referred to as "Object-Subject" Constraint.

(iii) Sentences which manifest a requirement of non-identity between the subjects of certain verbs and the subjects of their complements: cf. (16 a.). Perlmutter refers to this type of constraint as the "Unlike-Subject" Constraint.

It was such considerations that led Perlmutter to postulate that there exist deep structure constraints whose domain extends beyond the boundaries of the simplex S in generalized phrase markers. These constraints, Perlmutter maintains, could be regarded as an extension of the device of contextual features in Aspects (i.e. they would specify conditions on the insertion of particular verbs into deep structure). He has convincingly argued that the ungrammaticality of sentences like (12 b.), (13 b.), (14 b.), (15 b.) and (16 b.) cannot be accounted for

in terms of transformational constraints. Whether the ungrammaticality of such sentences is accounted for transformationally or in terms of a deep structure constraint is of no direct relevance here.³ What it is important to notice in this respect is that such cases as we have been discussing provide further evidence that there are numerous constraints on the presence of the gerundial/infinitival complementizer in deep structure, assuming as we do that complementizers are generated in deep structure. On the other hand, in a theory that introduces complementizers transformationally, these would be specified as constraints on the conversion of an embedded S into a gerundial/infinitival. In either case, these constraints should be added to the constraints we enumerated in Chapters II and III.

One final point needs to be mentioned before we close this subsection, namely: whereas the "Unlike-Subject Constraint" is operative on infinitivals, it is not operative on that-clauses: viz.

- (19) a. I screamed that I would go
b. *I screamed for me to go
c. *I screamed for myself to go

If complementizers were introduced transformationally, then there would be no way of accounting for these facts, assuming that the Unlike-Subject Constraint is a deep structure constraint. However, if complementizers are generated in deep structure, these facts will be accounted for automatically.

5.3. Notional criteria:

We have already suggested that gerundials and infinitivals may be employed in a number of different senses. To explain what is meant by the senses in which a gerundial or an infinitival may be used, let us consider the following two examples:

(1) His losing the race should make no difference

(2) Crossing the river tired me out

If a native speaker is asked to paraphrase sentence (1) he would possibly give the following sentence:

(3) The fact that he lost the race should make no difference

On the other hand, (2) could be notionally paraphrased by:

(4) The action of crossing the river tired me out

or, possibly, by:

(5) The process of crossing the river tired me out

Thus we could notionally speak of a gerundial that expresses a factive sense (i.e. indicates or refers to a fact), and of a gerundial clause that expresses an action sense. These are but two of the various senses that a gerundial clause can express. Similarly, an infinitival may be employed in a number of different senses. A sentence like:

(6) It is annoying to have to leave so soon

could be plausibly paraphrased by:

(7) The fact that $\left\{ \begin{array}{l} \text{I} \\ \text{we} \end{array} \right\}$ have to leave so soon is annoying

in which case the infinitival could be said to have a factive import. On the other hand, the infinitival in, say:

(8) It amused Jane to watch them

could be said to have an action import. However, it is not al-

ways possible to notionally characterize the sense that a gerundial or an infinitival may express. Consider, for instance, the following two sentences:

(9) John has been assumed to be in London⁴

(10) I would not mind losing my job

The infinitival in (9) does not seem to express either a 'factive' sense or an 'action' sense. This observation applies also to the underlined gerundial in (10).

It was such notional considerations that led some linguists to distinguish between 'action', 'factive', and 'non-factive' noun phrase complements (e.g. the infinitival in (9) and the gerundial in (10) would be considered 'non-factive'). However, we have seen in Chapter I that Lees' (1963) analysis of nominal constructions in terms of "factive" and "action" nominals is erratic. We have also seen that Wigzell's (1969) analysis of the senses expressed by a noun phrase complement is notional and ad hoc. We may note in passing that Wigzell postulates that each NP complement has in its deep structure a preceding lexical head-noun that specifies the sense of the complement regardless of whether this head-noun is overtly expressed or not. In this respect he talks of "factive", "non-factive" and "action" NP complements. In what follows we will examine in detail the Kiparskys' (1970) analysis of the semantics of NP complements, but before we do this, we will digress to discuss the possibilities of the deletion of lexical head-nouns in headed gerundials and infinitivals.

5.3.1. Head-noun deletion:

Following Chomsky (1965), we assume that only freely recoverable elements can be deleted and that transformations do not generally change meaning.⁵ Bearing these two points in mind, let us see whether or not an antecedent lexical head-noun that precedes a gerundial or an infinitival is susceptible to deletion. Consider the headed gerundials contained in the following examples:

- (11) a. The fact of his having killed the policeman annoyed us
b. The action of crossing the river was tiring
c. The idea of spending his life in prison terrified him
d. The news of his having resigned was released yesterday
e. We were not aware of the relevance of your reporting the accident
f. Evidence of his having stolen the money was given yesterday

The first thing to notice in this respect is that the deletion of certain lexical head-nouns in the examples in (11) impairs the grammaticality of the sentence within which the gerundial is embodied. For instance, the deletion of the head-noun evidence in (11 f.) yields the ungrammatical string:

- (12)* His having stolen the money was given yesterday

This observation also applies to sentence (11 d.), for witness the ungrammaticality of:

- (13)* His having resigned was released yesterday

Thus on syntactic grounds, the deletion of such head-nouns should be blocked. It is noteworthy in this respect that the

actual distribution of a gerundial does not coincide with that of the associated lexical head-noun, there being environments where the gerundial can occur but not the associated head-noun and vice versa. In the following examples, for instance, the matrix verb seems to accept a headed gerundial or a headless one, but it does not seem to accept the head-noun on its own:

- (14) a. The fact of his having read Chomsky is immaterial
b. His having read Chomsky is immaterial
c. ?The fact is immaterial
- (15) a. I hate the habit of smoking cigars
b. I hate smoking cigars
c. ?I hate the habit

Out of context, the (c) sentences in (14) and (15) would be unacceptable. At least, they would be semantically questionable unless they are properly contextualized, in which case the underlined NP's in (14 c.) and (15 c.) have to be marked [+mentioned] and are to be taken as referring back to some information in the given context. On the other hand, there are environments where a lexical head-noun is possible but not the associated gerundial: cf.

- (16) a. The possibility of your getting a grant is very slim
b. The possibility is very slim
c. *Your getting a grant is very slim
- (17) a. The news of his having resigned spread quickly
b. The news spread quickly
c. *His having resigned spread quickly

After this digression, let us continue our discussion of the deletion of the antecedent lexical head-nouns that precede

the gerundials in (11). The first thing we notice is that in certain contexts the deletion of an antecedent head-noun impairs the grammaticality of the sentence within which the gerundial is embodied and thus the deletion should not be allowed: cf. (11 d.) and (13), (11 f.) and (12). Secondly, in certain circumstances the deletion of the head-noun alters the sense of the associated gerundial. Consider, for instance, sentence (11 e.), where the deletion of the head-noun relevance produces a sentence which, although acceptable, does not have the meaning of the original: viz.

(18) We were not aware of your reporting the accident:

cf. (11 e.)

This observation also applies to the head-noun idea in (11 c.):

(19) a. The idea of spending his life in prison terrified him

b. Spending his life in prison terrified him

Thus on semantic grounds also, the deletion of the head-noun idea in (11 c.) and the head-noun relevance in (11 e.) is not possible. Thirdly, in certain circumstances the deletion of an antecedent head-noun does not impair either the grammaticality of the matrix sentence, nor the semantic reading of the accompanying gerundial, but the deleted head-noun would not be uniquely recoverable. This seems to be the case in (11 b.), which I repeat here for convenience:

(11) b. The action of crossing the river was tiring

The deletion of the head-noun action in (11 b.) would make the sense of the gerundial open to various, though similar, interpretations: cf.

(20) Crossing the river was tiring

If we try to recover the deleted head-noun in (20), we might say that it is an act, an activity, an action, or possibly a process: cf.

(21) The $\left. \begin{array}{l} \text{act} \\ \text{activity} \\ \text{action} \\ \text{?process} \end{array} \right\}$ of crossing the river was tiring

But under no circumstances could we, for instance, suggest the noun fact or idea as a head-noun for the gerundial in (20), since such a move would impair both the grammaticality of the whole sentence and the semantic reading of the gerundial:

- (22) a. *The fact of crossing the river was tiring
b. *The idea of crossing the river was tiring

It is worth noting in this respect that the head-nouns action, act, activity, and process are semantically related. Fourthly, there are contexts in which a deleted head-noun seems to be uniquely recoverable. This seems to be the case if the antecedent head-noun is fact. For instance, the deletion of the head-noun fact in (11 a.), which I repeat here as (23 a.), does not seem to distort the semantic reading of the accompanying gerundial, nor does it seem to impair the grammaticality of the whole sentence: cf.

- (23) a. The fact of his having killed the policeman annoyed us
b. His having killed the policeman annoyed us

Thus given the gerundial in (23 b.) we could reconstruct the headed gerundial in (23 a.). Thus very tentatively we might suggest that only the head-noun fact is susceptible to deletion. Before going into details for justifying this statement, let us

consider the susceptibility to deletion of head-nouns that introduce infinitivals.

Unlike certain head-nouns that precede gerundials, head-nouns that precede infinitivals are not sensitive to deletion. To illustrate the point under discussion, let us consider the following examples:

- (24) a. The plan to rebuild the school did not succeed
b. The opportunities for the boy to come early are non-existent
c. The proposal for the lecturers to meet the students is feasible

The deletion of the head-noun plan in (24 a.) impairs the grammaticality of the matrix sentence, and so does the deletion of the head-noun opportunity in (24 b.): cf.

- (25) a. *To rebuild the school did not succeed
b. *For the boy to come early are non-existent

The deletion of the head-noun proposal in (24 c.) yields a more acceptable sentence than (25 a.) or (25 b.), but it certainly obviates the sense expressed by the associated infinitival: cf.

- (25) c. ?For the lecturers to meet the students is feasible

In other words, from the infinitival in (25 c.) we cannot freely or uniquely recover the head-noun proposal. It is noteworthy in this respect that, unlike gerundials, infinitivals cannot be preceded by the head-noun fact in the surface structure, though it is notionally possible to characterize the sense expressed by an infinitival as "factive". For instance, the sense expressed by the infinitival in, say:

(26) a. For Sue to have refused to come surprised us
could be notionally characterized as "factive". However, the infinitival in (26 a.) cannot overtly combine with the head-noun fact: viz.

(26) b. *The fact for Sue to have refused to come surprised us

Notice also that infinitivals are unlikely to overtly combine with the head-noun action, though it is possible in certain contexts to notionally characterize the sense expressed by the infinitival as "action". We have argued that the infinitival in:

(8) It amused Jane to watch them

could be said to have an "action" import, but it is not possible for this infinitival to be preceded by the head-noun action in the surface structure: viz.

(27) a. *The action to watch them amused Jane

b. *Her action to watch them amused Jane

c. *The action for Jane to watch them amused her

It might be the case that the head-noun fact is generated in the deep structure of (26 a.), and that the head-noun action is generated in the deep structure of (8) and that these head-nouns are obligatorily deleted in the surface structure. We will return to discuss such a proposal in due course.

To summarize, we can say that head-nouns preceding infinitival clauses are not susceptible to deletion. On the other hand, head-nouns preceding gerundial clauses are not susceptible to this transformation unless the head-noun happens to be fact or, possibly, action. Nonetheless, it is possible in most cases ^{to}

notionally characterize the sense in which a gerundial or an infinitival is employed. So far we have shown that gerundials and infinitivals can express two senses, namely "factive" and "action". In what follows we will continue to discuss in more detail the various senses that gerundials and infinitivals can express. The treatment will, in the first instance, be purely notional. Later in this chapter we will see whether or not the classification of gerundials and infinitivals in terms of the sense they express has any syntactic significance. Before we proceed to discuss these points, we will briefly comment on the notion of "factivity" and the notion of "presupposition" and see whether there is any advantage in incorporating the latter concept in the grammar of NP complements in English.

5.3.2. The notion of "factivity":

The term "factive complement" is often understood to refer to complements that express a message (i.e. a proposition) that could be viewed or interpreted as a fact.⁶ Admittedly, the term is loosely and rather vaguely used. First, what do we mean by the term "fact"? Many native speakers do not seem to be aware of the logical and psychological implications of this term, though they might quite often use it in their speech in statements like:

- (28) a. The fact is I do not like Susan
b. The fact is John is a liar⁷

Nobody would dispute the truth value of the first sentence since it expresses a purely subjective judgement. The speaker may be lying or may be telling the truth, but certainly we cannot judge from this sentence whether the proposition:

(28) c. I do not like Susan
is true or false. Secondly, one could argue that the proposition in (28 c.) is true, if the behaviour of the speaker - possibly socially - reflects the truth of the proposition. On the other hand, one could argue that the proposition is false, and that the speaker does like Susan but he is forced for reasons that are non-linguistic to utter (28 a.), in which case he - i.e. the speaker - is aware that he is not telling the truth. A third possibility would be that the speaker is not lying and at the same time the proposition I do not like her is false, in which case (28 a.) could be accounted for in psychological terms as, for instance, that the speaker is depressed. All of these considerations are relevant for determining whether the proposition expressed by the underlined construction in (28 a.) is true or false. But one wonders whether such considerations should be dealt with by the linguist, indeed whether they could be ever incorporated in any linguistic theory. Nonetheless before we proceed to discuss what we have been referring to as "factive" complements, it is vital to try to characterize the term "fact".

Without any psychological or philosophical implications, we might say that there is one basic factor that determines the "factivity" of a proposition, namely, the speaker's presupposition or attitude. In what follows we will briefly discuss the notion of presupposition and see its relevance to the semantics of gerundials and infinitivals. Before we proceed to do so, let us consider in some detail the type of sentence exemplified in (29 a.) to see whether there are any restrictions on the occurrence of certain linguistic elements in it. Notice

first, that whereas (28 a.) sounds perfectly acceptable, the following sentence does not:

(29) a.? The fact is the earth is square

Sentence (29 a.) is anomalous and the anomaly seems to be due to the fact that the proposition:

(29) b.? The earth is square

is false, for it happens to be a fact, or at least we happen to know, that the earth is not square. In this respect it seems convenient to distinguish between three types of propositions. First, those that are necessarily true; secondly, those that are contingent; and thirdly, those that are necessarily false. A proposition is necessarily true if there are no conceivable circumstances in which it would be false or - as some philosophers put it - if it is true in all possible worlds. A proposition which is not necessarily true may be either contingent (true or false, but not necessarily so) or necessarily false (i.e. impossible). Thus:

(30) A big city is a city

is necessarily true, whereas:

(31) Britain is a monarchy

is contingent - it happens to be true, but we could imagine circumstances in which it would be false. On the other hand,

(32) All round objects are square

is necessarily false, for we could imagine no set of circumstances in which it would be true.⁸ The relevance of such distractions seems obvious when we discuss sentences like (28 a.) and (29 a.). It seems that if a proposition is culturally or

universally known to contradict a well-known fact - either scientific or logical - this proposition cannot be the predicate of the NP the fact in a copular sentence of the type instanced in (29 a.). Consider the anomaly of the following sentences:

(33) a.?The fact is London is the capital of India

b.?The fact is all round objects are square.

The anomaly in these two sentences arises from the fact that the two underlined propositions in (33 a.) and (33 b.) are false, at least at the time at which these sentences were uttered. Following Richard Garner and Charles Fillmore we will use the term "time of locutionary act (TLA)" to refer to the temporal and spatial coordinates of the speech act. A speech act, on the other hand, refers to the act of producing a linguistic utterance. The producer of a speech act will be called the "locutionary Source (LS)", the addressee will be referred to as the "locutionary target (LT)" (cf. Fillmore, 1971-b: 371). Having introduced the notion of (TLA), we might argue that for any sentence of the type instanced in (33 a.) and (33 b.) to be semantically acceptable, the proposition expressed by the predicate should be at TLA considered true, otherwise the sentence will be anomalous. A final point should be mentioned before we proceed to discuss the notion of "presupposition", namely whether the NP's that occur in the predicate in sentences like (33 a.) and (33 b.) should necessarily have an existential specific reference or not. To explain the point under discussion, consider the following examples:

(34) a. The fact is that ghosts are harmless

b. The fact is that ghosts appear in Shakespeare's plays

Sentence (34 a.) might be viewed as anomalous by a person who does not believe in the existence of ghosts, but it would not be viewed as such by one who believes in their existence. On the other hand, sentence (34 b.) would not be viewed as anomalous either by a person who believes in ghosts or by a person who does not since the proposition expressed by the underlined construction in this sentence is factually true. The type of anomaly in (34 a.) will be discussed under the heading "presupposition".

5.3.3. Presupposition:

The concept of "presupposition" has come of late to be the focus of discussion in various articles, both philosophical and linguistic.⁹ Lakoff (1971-b: 329), for instance, has suggested that the notion of presupposition should replace Chomsky's 'selectional restrictions', and that it has a strong bearing on the well-formedness of sentences. However, without going into the details and philosophical implications of the notion of presupposition, we will see whether this notion has any significance at all to the grammar, in particular the semantics of NP complements. At the outset it would be convenient to distinguish between two types of presupposition: sentence presupposition and word presupposition.

Katz and Postal (1964: 38) discuss the presuppositions of questions and argue that the presupposition of a question is in fact part of the underlying structure of the question. Thus:

(35) a. Where did John go?

presupposes, and has as part of its underlying structure:

(35) b. John went somewhere

This is why they suggest relating interrogative words to indefinite words, and this is why they represent the underlying structure of all questions in the following way:



On the other hand, Fillmore maintains that "sentences in natural language are used for asking questions, giving commands, making assertions, expressing feelings, etc." - cf. Fillmore, 1971-b: 380. He then defines the presupposition of a sentence as "those conditions which must be satisfied before the sentence can be used in any of the functions just mentioned": cf. p.380. He further argues that "if the presuppositional conditions are not satisfied, the sentence is simply not apt; only if these conditions are satisfied can a sentence be appropriately used for asking a question, issuing a command, making an apology, pronouncing a moral or aesthetic judgement,..." (cf. Fillmore, 1971-b: 381). Thus with regard to a sentence like:

(37) That Harry is still living with his mother proves
that he is a bad marriage risk

Fillmore maintains, that if we were to say (37) about somebody who is an orphan, nobody would say that we were speaking falsely, only that we were speaking inappropriately. If prove has a that-clause subject and a that-clause object, then the truth of the first that-clause is presupposed and the verb is used to assert a causal or logical connection between the two clauses and thus (when used affirmatively) to imply the truth of the

second clause. The notion of logical presupposition is defined by Keenan as follows: "A sentence S logically presupposes a sentence \bar{S} just in case S logically implies \bar{S} and the negation of S, $\sim S$, also logically implies \bar{S} ." (cf. Keenan, 1971: 45). The following sentence, for example:

(38) a. That Fred left surprised Mary

logically presupposes:

(38) b. Fred left

and so does the negative counterpart of (38 a.): cf

(38) c. That Fred left ~~did not surprise~~ Mary

It has been also argued that words have, as part of their meaning, presuppositional properties. Fillmore claims that the verb open in, say:

(39) Please do not open the door

presupposes that at TLA the door is closed. He further argues that a verb like criticize, for instance, has some built-in properties in the sense that the LS who uses this verb is presupposing that the person who is being criticized for doing something is the one who did this particular thing. For instance in:

(40) John criticized Mary for writing the editorial

the LS presupposes that John regarded Mary as the writer of the editorial and asserts that John claimed the "editorial-writing behaviour or its results as being 'bad'" (cf. Fillmore, 1971-b: 381). Another example of the presupposition of words is provided by Morgan (1969: 167), who argues that the verb know in, say:

(41) John knows that Mary is here

associates with it the speaker's presupposition that the complement Mary is here is true. George Lakoff (1971-b: 330-3) argues that the occurrence of the relative pronouns who and which is semantically determined and, in fact, involves presupposition. The antecedent NP of who must be presupposed to be human: cf.

- (42) a. I saw a creature who I knew was human
b. *I saw a creature who I knew was canine

However, Lakoff maintains that this is not the sole condition for there are other factors, which have to do with the presuppositions of the LS, involved in determining the choice of who or which. It is his contention that the distribution of the grammatical morpheme who cannot simply be determined by the syntactic feature [+ Human]; rather, the relative who requires, at least, that the person referred to be presupposed to be alive at the time referred to in the relative clause, or thought of as a human being. He cites the following two examples:

- (43) a. We have just found a good name for our child, who
we hope will grow up to be a good citizen after he
is born
b. *We have just found a good name for our child, who
we hope will be conceived tonight

He further argues that the acceptability of:

- (44) a. My cat, who believes that I am a fool, enjoys
tormenting me

depends on whether the person assumes that cats have minds or not. In other words, one's judgement of grammaticality seems to vary with one's assumptions and beliefs. Lakoff finds

(44 a.) both syntactically and semantically well-formed, whereas he considers (44 b.) ungrammatical: viz.

(44) b. *My cat, which believes that I'm a fool, enjoys tormenting me

These are just some of the various arguments that have been recently put forward by both philosophers and linguists for incorporating the notion of presupposition in linguistic theory. However, it has been recently argued by Hutchinson (1971: 134) that little profit has been gained from the huge expenditure of time and effort on the notion of presupposition.¹⁰

The reason for bringing up this topic is to see whether or not the notion of presupposition contributes to the factivity of complements. Before closing this section, it is convenient to note that it has been pointed out by various linguists and philosophers (e.g. Keenan, 1971; Fillmore, 1971-b; Kiparsky and Kiparsky, 1970) that the presuppositional conditions of a sentence are unaffected under negation. For example, (45 a.) presupposes (45 b.) and so does (45 c.): viz.

- (45) a. It is remarkable that Fred resigned
b. Fred resigned
c. It is not remarkable that Fred resigned

In what follows we will see whether the notion of presupposition has any significance at all in the study of the phenomenon of NP complementation.

5.4. Factive/non-factive gerundials:

In this section and the following one we will endeavour to specify the factors that determine the sense in which a gerundial or an infinitival might be employed. It should, however, be pointed out at the outset that the treatment is notional and it possibly represents subjective judgement more than factual information. This is mainly so because of the absence of solid and explicit syntactic and semantic criteria that could satisfactorily characterize the sense expressed by a gerundial or an infinitival. We have, however, touched slightly upon the notion of factivity in the preceding section. On such evidence we can tentatively define a factive complement as one that is presupposed by the matrix sentence within which it is contained, or more accurately, as one whose underlying proposition is presupposed to be true by the matrix sentence. This definition entails that the truth of the proposition expressed by the S underlying a factive complement is also presupposed if the matrix S is negated.

The gerundials contained in the following sentences all seem to be employed in a factive sense:

- (1) His wanting a meal at this time of night is odd
- (2) Your being the director's son is significant
- (3) I am surprised at his having lost the game
- (4) I regret having agreed to the proposal

That the underlined gerundials are factive is consistent with the observations we have made about factivity. First, in all of these sentences the **LS** presupposes that the proposition expressed by the gerundial is true. In other words, the speaker presupposes that the embedded S expresses a true proposition,

and makes some assertion about this proposition. Secondly, all the underlined gerundials in (1-4) could be overtly preceded by the head-noun fact without changing the sense they express and without impairing the grammaticality of the containing sentence. Thirdly, all the underlined constructions in (1-4) are logically implied by the sentence within which they are contained. Fourthly, the presuppositions of the sentences in (1-4) are preserved under negation.

Leaving aside questions of "good faith" in speech communication, in particular whether the LS is lying or speaking in jest or does not understand what he is saying (cf. footnote 10), we can adduce the following argument: in certain contexts gerundials may be understood to express a factive sense, in which case it seems possible to insert the head-noun fact in front of the clause without distorting the grammaticality of the matrix sentence or the semantic sense of the gerundial. The question to be decided is whether the factivity of a gerundial is a function of linguistic elements contained in the matrix S (i.e. external factors), or a function of linguistic elements contained in the embedded S (i.e. internal factors). Under the heading "external factors" we include: the main verb in the matrix S, its tense, and modal auxiliaries; and under the heading "internal factors" we include: morphological shape of the gerundial, main verb of the embedded S, and the specificity of the subject and object NP's of the gerundial.

5.4.1. Internal factors:

5.4.1.1. Morphological shape of the gerundial;

Have-gerundials with an expressed genitivized subject characteristically express a factive sense. The gerundials contained in the following examples seem to express a factive sense:

- (5) a. Their having refused the offer is surprising
b. She regrets your having agreed to the proposal

This evidence has led some linguists to claim that only factive predicates allow the full range of gerundial constructions and that the genitivized subject is the distinctive mark of a factive gerundial (cf. Kiparsky and Kiparsky, 1970: 144, and Wiggzell, 1969: 33, respectively). This claim is too strong, for in some contexts have-gerundials do not express a factive sense. All the following examples sound perfectly acceptable, though the have-gerundials do not seem to express a factive sense:

- (6) a. His having been a lecturer is a myth
b. His having been to Bangor is quite possible
c. His having kissed the secretary is impossible
d. Their having reached an agreement is doubtful¹¹

We have argued in Chapter II - cf. 2.3. - that the morpheme have is, in many cases, a marker of past reference and that it has nothing to do with the factivity of the gerundial within which it is embodied. There is, however, a test that can clearly distinguish between factive gerundials like those instanced in (5) and non-factive ones like those instanced in (6): the main verb in (5) but not in (6) may be preceded by the auxiliary will without impairing the grammaticality of the sentence. Witness the acceptability of the examples in (7) and the unacceptability of those in (8):

- (7) a. His having been a minister will be an advantage

- (7) b. Their having refused the offer will be surprising
c. She will regret your having agreed the proposal
- (8) a. *His having been a lecturer will be a myth
b. *His having been to Bangor will be quite possible
c. *His having kissed the secretary will be impossible
d. *Their having reached an agreement will be doubtful

Like have-gerundials with an expressed subject, have-gerundials with no expressed subject can be employed in both a factive and a non-factive sense. The gerundials in the following examples seem to express a factive sense:

- (9) a. Having failed the exam annoyed Bill
b. She regrets having agreed to the proposal

That the two gerundials in (9) are factive becomes obvious when we negate the two sentences containing them:

- (10) a. Having failed the exam did not annoy Bill
b. She does not regret having agreed to the proposal

Both (9 a.) and (10 a.) logically imply:

- (11) Bill (had) failed the exam

similarly, both (9 b.) and (10 b.) logically imply:

- (12) She (has) agreed to the proposal

On the other hand, in some of their occurrences, have-gerundials with no expressed subject may be interpreted as non-factive: cf.

- (13) a. I would regret having lost the race - if I had
b. Having lost his job would be annoying for John

Obviously, the two gerundials in (13 a.) and (13 b.) do not express a factive sense.¹²

Simple gerundials with an expressed subject can be employed in both a factive and a non-factive sense. Consider the following examples:

- (14) a. His coming on time is remarkable
b. Sue is sorry about your missing the concert

The two gerundials express a factive sense for the presupposition of the two sentences in (14) remains constant under negation. Thus like (14 a.), (15 a.):

- (15) a. His coming on time is not remarkable

logically implies:

- (16) a. He came/has come on time

and like (14 b.), (15 b.):

- (15) b. Sue is not sorry about your missing the concert

logically implies:

- (16) b. You (have) missed the concert

On the other hand, the following two gerundials with an expressed subject do not seem to express a factive sense:

- (17) a. Your coming on time is imperative
b. I am thinking of your getting a grant¹³

Simple gerundials with no expressed subject may be employed in different senses. What we are interested in is whether they can be employed in a factive sense or not. Prima facie evidence that they can comes from considering the following examples:

- (18) a. Losing his job upset Fred
b. I liked playing your piano

The gerundial in (18 a.) expresses a factive sense for the presupposition of the matrix sentence remains constant under negation. Like (18 a.), (19 a.):

(19) a. Losing his job did not upset Fred

logically implies:

(20) a. Fred (had) lost his job

These remarks also apply to the gerundial in (18 b.), for like (19 b.):

(19) b. I did not like playing your piano

it logically implies:

(20) b. I played your piano

On the other hand, simple gerundials with no expressed subject may be employed in a non-factive sense as in the following examples:

(21) a. Seeing the dean is necessary

b. I would not mind meeting her

In certain contexts a gerundial with no expressed subject may be understood to express an "action" sense though it passes the tests of factivity we have been using. Consider, for instance, the gerundial contained in the following sentence:

(22) a. Crossing the river tired Jane out

We have argued that the sense expressed by this type of gerundial may be notionally characterized as "action", but according to the tests of factivity the sense of this gerundial should be "factive". Sentence (22 a.) logically implies:

(22) b. Jane crossed the river

In other words, (22 a.) presupposes (22 b.) and this presupposition remains constant under the negation of the matrix sen-

tence, for like (22 a.), (22 c.) logically implies (22 b.):

(22) c. Crossing the river did not tire Jane out

We will be returning to this question - i.e. the duplication of the sense expressed by a gerundial - soon and shall not, therefore, pursue it in detail at this point.

Thus it becomes obvious for the examples cited in this subsection that the morphological shape of the gerundial does not determine the sense in which it is employed. Admittedly, have-gerundials seem to characteristically express a factive sense, but we have cited examples in which they do not. The conclusion to be drawn from the discussion in this subsection is that the morphological shape of the gerundial is not a necessary condition for the factivity of a gerundial.

5.4.1.2. The main verb of the embedded S:

It seems that the main verb in the embedded sentence underlying a gerundial has some bearing on the sense that a gerundial expresses. To see what is meant by this, let us compare the two gerundials in the following examples:

(23) a. Failing the exam upset Mary

b. Cleaning the place out upset Mary

The gerundial in (23 a.) seems to express a factive sense for notice that sentence (23 a.) is paraphraseable by:

(24) a. The fact of failing the exam upset Mary

Similarly, the gerundial in (23 b.) seems to express a factive sense, for (23 b.) is paraphraseable by:

(24) b. The fact of cleaning the place out upset Mary¹⁴

On the other hand, the gerundial in (23 b.) but not the one in (23 a.) may be notionally interpreted as expressing an action sense. Indeed sentence (23 b.) could be plausibly paraphrased by:

(25) b. The action of cleaning the place out upset Mary

Notice in this respect that (23 a.) is unlikely to be rephrased as:

(25) a.??The action of failing the exam upset Mary

Notice also that even if the gerundial in (23 b.) is interpreted as expressing an action sense, the presupposition of the sentence within which it is contained remains the same, namely:

(26) Mary cleaned the place out

It seems that the only distinction that could be drawn between the type of gerundial instanced in (23 a.) and that in (23 b.) would be in terms of the activity designated by the gerundial, in particular in terms of the type of verb that occurs in the embedded sentence underlying the gerundial. In this respect it seems necessary to draw a distinction between "controllable" activities and "non-controllable" ones. All the following sentences:

(27) a. John lost his job

b. Mary fell down

c. They had an accident

d. She failed the exam

designate non-controllable actions in the sense that in normal situations a person cannot control the actions referred to in these sentences. For instance, a person cannot control or pre-

dict the action of falling down unless he does it on purpose as in acting, for example. Similarly a person cannot predict or control the action of having an accident. Given these facts, it becomes obvious why these sentences do not seem to express an action sense when they are transformed into a gerundial of the type instanced in (23 a.) above. Gerundials of this type seem to designate "events" rather than "actions". It might prove profitable to draw a distinction between gerundials that designate "events" and those that designate "actions". We will be returning to deal with this question in due course. Now consider the following examples:

- (28) a. They crossed the river
- b. She drove the car
- c. I read Aspects twice
- d. He listened to me

All of these sentences designate "controllable" activities, and this is mainly why they seem to express an action sense when they are transformed into a gerundial of the type instanced in (23 b.).

Such a classification, if at all valid, gives rise to what we have notionally characterized as "action" gerundials and as "event" gerundials. This will be discussed in some detail in an ensuing section. Suffice it at the moment to note that the main verb of the sentence underlying a gerundial has some bearing on the sense expressed by the gerundial.

5.4.1.3. Specificity of the subject and object NP:

The definiteness of the subject and the object NP of a

gerundial seems to have some bearing on the sense expressed by the gerundial. We will discuss here gerundials whose subject NP is suppressed due to its being the generic pronoun one, or due to its being unspecified (cf. section 2.2.). It seems that a gerundial whose subject NP is suppressed due to its being the generic pronoun one is never employed in a factive sense. Consider the following examples:

- (29) a. Speaking a foreign language was an advantage those days
b. Looking after an invalid wife is a burden
c. Having no money is a nuisance

None of these gerundials seems to express a factive sense. It could be argued that the non-factivity of these gerundials is a function of the predicative adjective. In fact this is not the case, for if we substitute these adjectives with ones that can combine with factive complements, the sense expressed by these gerundials will still be non-factive. Adjectives like: exciting, annoying, depressing, relevant, etc., which might be referred to as "comment adjectives" - cf. Alexander and Matthews, 1964 - combine comfortably with factive complements: cf.

- (30) a. Speaking a foreign language is exciting
b. Looking after an invalid wife is annoying
c. Having no money is depressing

Again none of the gerundials in (30) seem to express a factive sense.

There are, however, certain contexts in which the type of gerundial instanced in (29) might be employed in a factive sense. This is particularly true if the object NP of the gerundial is

definite, as in the following examples:

(31) Getting the reward is encouraging

(32) Looking after this invalid wife is annoying

However, the deleted subject in these gerundials is not understood to be the generic pronoun one. In fact it is often understood to be the speaker (i.e. the locutionary source - LS).

Under this analysis, it is possible for the gerundial to receive a factive interpretation. It could be the case, however, that the deleted subject in (31) and (32) is the generic pronoun one, and it is being used by the speaker (LS) to refer to himself as, for instance, in:

(33) One has to do one's duty

This is a confused matter, however, and conclusions cannot be drawn with any confidence (cf. section 2.2. above).

5.4.2. External factors:

5.4.2.1. Tense of the matrix S:

It seems that tense specification in the matrix sentence has some bearing on the sense expressed by a gerundial clause. To explain what is meant by this, let us examine some sentences containing both a factive verb¹⁵ and a gerundial clause. In this respect we will examine both copulative and non-copulative matrix sentences to see whether changing the tense has any effect on the interpretation of the gerundial clause contained in the matrix sentence.

Consider first the gerundials in the following examples,

where the tense of the matrix sentence is in the present where the verb of the matrix sentence is "factive":

- (34) a. I regret his having lost the game
- b. I regret having lost the game
- c. I regret his losing the game
- d. I regret losing the game

All the gerundials in (34) express a factive sense regardless of whether or not the subject of the gerundial is expressed. By way of further exemplification, consider the following examples:

- (35) a. His having won the race pleases Mary
- b. Having won the race pleases Fred
- c. His winning the race pleases Mary
- d. Winning the race pleases Mary

Like the gerundials in (34 a-c.), the gerundials in (35 a-c.) are factive, but unlike the gerundial in (34 d.), the gerundial in (35 d.) does not seem to express only a factive sense; it seems to express both a factive and a non-factive sense, depending on whether the activity designated by the gerundial is specific or iterative. If we are talking about a specific act of winning, then (35 d.) could be plausibly paraphrased by:

- (35) e. The fact of winning the race pleases Mary

But if we are talking in general terms and not about a specific event, then (35 d.) could be compared to:

- (36) Smoking cigars pleases Mary

in which case the gerundial winning the race does not receive a factive interpretation.

Changing the tense of the verb in the matrix sentence in the examples in (34) does not seem to effect any semantic change with regard to the sense expressed by the gerundial. All the gerundials in the following examples are factive:

- (37) a. I regretted his having lost the game
- b. I regretted having lost the game
- c. I regretted his losing the game
- d. I regretted losing the game

This seems to be the case also with the examples in (35 a-c.). The gerundial in (35 d.) seems to express only a factive sense if the tense of the matrix sentence is in the past: cf.

- (38) a. Winning the race pleased Fred: cf. (35 d.)

However, one could in the absence of solid criteria argue that the gerundial in (38 a.) expresses also an action sense, in which case (38 a.) could be paraphrased by:

- (38) b. The action of winning the race pleased Fred

Now consider the gerundials contained in the following copulative sentences, where the tense of the main verb in the matrix sentence is in the past:

- (39) a. His having crossed the river was significant
- b. Having crossed the river was significant for us
- c. His crossing the river was significant
- d. Crossing the river was significant for us

The gerundials in (39 a-c.) express a factive sense, whereas the gerundial in (39 d.), though it could be interpreted in a factive sense, may also be interpreted in an action sense, for we could plausibly paraphrase it by:

- (40) The action of crossing the river was significant for us

Now let us see what happens if the tense of the main verb in the examples in (39) is changed into the present:

- (41) a. His having crossed the river is significant
- b. Having crossed the river is significant for us
- c. His crossing the river is significant
- d. Crossing the river is significant for us

Like the gerundials in (39 a-c.), the gerundials in (41 a-c.) seem to express a factive sense. The gerundial in (41 d.) could be interpreted in both a factive and a non-factive sense. That this is so can be demonstrated by expanding (41 d.) in two different ways:

- (42) a. Crossing the river is significant for us, and we should not regret it
- b. Crossing the river is significant for us, but who can cross it?

From the preceding examples we notice that changing the tense in the matrix sentence has some effect on the sense expressed by a gerundial. This is particularly true if the gerundial has an expressed subject. What we have said in this respect can be tentatively represented in the following table. We assume that the matrix S contains a factive verb. (F stands for "factive" and NF for "non-factive").

(43)

	Copulative sentences		Non-copulative sentences	
	past	present	past	present
1. <u>have</u> -gerundials expressed subj.	F	F	F	F
2. <u>have</u> -gerundials suppressed subj.	F	F	F	F
3. simple gerundials expressed subj.	F	F ?NF	F	F ?NF
4. simple gerundials suppressed subj.	F	? F NF	F	? F NF

5.4.2.2. Modal auxiliaries in the matrix S:

Unlike tense, modal auxiliaries incorporated in the matrix S seem to greatly affect the sense expressed by all forms of the gerundial. This becomes obvious when we compare the following two examples:

- (44) a. John's eating the pie amazes me
b. John's eating the pie would amaze me

The only difference between (44 a.) and (44 b.) is that the latter incorporates the auxiliary would. The gerundial in (44 a.) is obviously factive, whereas the gerundial in (44 b.) does not seem to express a factive sense, prima facie evidence that the inclusion of a modal auxiliary in the matrix sentence alters the sense expressed by a gerundial clause. In what follows we will briefly examine the various modal auxiliaries to see if they all have a bearing on the sense expressed by a gerundial.

Let us begin by comparing the following two sentences, which are similar except for the fact that the matrix sentence in the second contains the modal auxiliary will:

- (45) a. John's failing the exam upsets his parents
b. John's failing the exam will upset his parents¹⁶

Unlike the gerundial in (45 a.), which expresses a factive sense, the gerundial in (45 b.) seems to express more than one sense. On one reading, it could be interpreted in a factive sense, in which case (45 b.) is paraphraseable by:

- (46) a. The fact of John's failing the exam will upset his parents

If properly contextualized, (46 a.) can be expanded in a certain way to account for the factive sense of the gerundial: cf.

- (46) b. The fact of John's failing the exam will upset his parents when they come to know that he has failed
- c. The fact of John's failing the exam will upset his parents when they become aware of the consequences of his failing the exam

On another reading the gerundial in (45 b.) expresses a "hypothetical" sense, in which case (45 b.) may be plausibly paraphrased by:¹⁷

- (46) d. If it is a fact that John failed his exam, then this will upset his parents

Now compare the following two gerundials in the object position:

- (47) a. She does not mind your borrowing the book
- b. She will not mind your borrowing the book

The gerundial in (47 a.) expresses a factive sense, whereas the one in (47 b.) may be understood in two ways: factive and hypothetical. Under the factive interpretation (47 b.) may be paraphrased by:

(48) a. She will not mind the fact of your borrowing the book whereas under the hypothetical interpretation it may be paraphrased by:

- (48) b. Were it a fact that you borrowed this book, then she would not mind this

So far we have not discussed sentences incorporating both a have-gerundial and the modal auxiliary will. Compare the

following two examples:

- (49) a. His having resigned surprises his colleagues
- b. His having resigned will surprise his colleagues

To me the two gerundials in (49 a.) and (49 b.) express a factive sense.

The occurrence of the modal auxiliary would in a sentence that contains a gerundial seems to assign a hypothetical interpretation to the gerundial regardless of the morphological shape of the gerundial. Consider the following data:

- (50) a. I would regret your losing the race
- b. I would regret losing the race
- c. I would regret your having lost the race
- d. I would regret having lost the race
- (51) a. John's losing his job would upset them
- b. Losing his job would upset John
- c. Having lost his job would be upsetting for John
- d. John's losing his job would upset his family

From the examples in (50) and (51) we notice that the simple gerundials express not a factive sense, but a hypothetical sense: cf. (50 a.), (50 b.), (51 a.) and (51 b.). On the other hand, the have-gerundials in (50 c.), (50 d.), (51 c.) and (51 d.) can be interpreted in two different senses, depending on the situational or linguistic context.¹⁸ This could be shown by expanding the sentences that contain these gerundials in different ways. For instance, (50 c.) may be expanded in the following way:

- (52) a. I would regret your having lost the race if you had

in which case the gerundial can be interpreted as expressing a hypothetical sense. On the other hand, (50 c.) may be expanded in the following way:

- (52) b. I would regret your having lost the race if you weren't so nasty to me

in which case the gerundial receives a factive interpretation: viz.

- (52) c. I would regret the fact of your having lost the race if you weren't so nasty to me.

This type of analysis applies to all have-gerundials in (50) and (51): cf.

- (53) a. I would regret having lost the race if I had (hypothetical)
b. I would regret having lost the race if it hadn't been so unimportant (factive)
- (54) a. Having lost his job would be upsetting for John, if he had (hypothetical)
b. Having lost his job would be upsetting for John, if he didn't already have another job lined up (factive)
- (55) a. John's having lost his job would upset his family if they knew about it (factive)
b. John's having lost his job would upset his family, if he had (hypothetical)

Like will and would, other modal auxiliaries seem to partly determine the sense expressed by a gerundial. A few examples will help to exemplify the point under discussion:

- (56) a. John's losing his job annoys his parents

(56) b. John's losing his job $\left. \begin{array}{l} \text{can} \\ \text{could} \\ \text{may} \\ \text{might} \\ \text{should} \\ \text{must} \end{array} \right\}$ annoy his parents

The gerundial in (56 a.) expresses a factive sense, whereas those in (56 b.) seem to express more than one sense depending on which modal auxiliary occurs in the matrix S. If could is chosen, the gerundial may be understood in two ways: factive or hypothetical. This is also true of the other modal auxiliaries except perhaps may, which seems to admit of factive interpretation only. Now consider the following have-gerundials:

(57) a. John's having lost his job annoys his family
 b. John's having lost his job $\left. \begin{array}{l} \text{?can} \\ \text{could} \\ \text{may} \\ \text{might} \\ \text{should} \\ \text{must} \end{array} \right\}$ annoy his family

All the gerundials in (51 b.) seem to express a factive sense. In other words the inclusion of a modal auxiliary in the matrix S that contains a factive have-gerundial does not seem to affect the sense expressed by the gerundial. The information we have presented so far can be incorporated in the following table:

(58)

	will	would	can	could	may	might	should	must
1. Simple gerundials expressed subject	F NF	NF	F NF	F NF	F	F ?NF	F ?NF	F
2. Simple gerundials suppressed subject	F NF	?F NF	F NF	F NF	F NF	F NF	F ?NF	F ?NF
3. Have-gerundials expressed subject	F	F NF	?F	F ?NF	F	F ?NF	F ?NF	F
4. Have-gerundials suppressed subject	F	F NF	F	F ?NF	F	F ?NF	F ?NF	F

5.4.2.3. The main verb in the matrix S:

It will have been noticed that we have been using terms like 'factive verbs' and 'factive adjectives' in a rather imprecise and notional sense. In this subsection we will examine some verbs, predicative adjectives and predicative nominals that co-occur with gerundials to see whether the classification of these lexical items into factive and non-factive has any significance.

First, let us examine the adjective significant, which the Kiparskys (1970) treat as factive (i.e. the truth of the proposition of its complement is presupposed by the LS). It seems that there are no restrictions on the morphological shape of the gerundial that can combine with this adjective: cf.

- (59) a. His having passed the exam is significant
b. Having passed the exam is significant
c. His passing the exam is significant
d. Passing the exam is significant

If the adjective significant in (59) is inherently "factive", then all the gerundials in (59) should be factive; but while this is true of the gerundials in the first three sentences, certainly it is not true of the gerundial in (59 d.). In addition to expressing a factive sense, the gerundial in (59 d.), depending on the linguistic and/or the situational context, may be understood to express a hypothetical sense: viz.

- (60) It is significant if X (where X stands in for the suppressed subject of the gerundial) passes the exam

To further show that significant does not necessarily imply the factivity of its subject gerundial, consider these examples:

- (61) a. His passing the exam would be significant.
b. Cleaning the place out would be significant
c. Getting an award is significant
d. Refusing the offer might be significant

None of the underlined gerundials in (61) seems to express a factive sense. The gerundials in (61 a.), (61 c.) and (61 d.) seem to express a hypothetical sense, while the gerundial in (61 b.) seems to express an action sense.

Now consider the verb regret, which has been treated as a factive verb:

- (62) a. Everyone regretted John's being completely drunk
b. I would regret meeting such a stupid person
c. You might regret doing this

The gerundial in (62 a.) expresses a factive sense: cf.

- (63) a. Everyone regretted the fact of John's being completely drunk

whereas the two gerundials in (62 b.) and (62 c.) seem to express a hypothetical sense: viz.

- (63) b. Were it a fact that I met such a stupid person,
then I would regret it
c. If you do this, you might regret it¹⁹

From the examples cited above, we notice that the "factivity" of a gerundial clause is not solely a function of the main verb, the predicative adjective, or the predicative nominal in the matrix sentence. We have shown that there are various factors, both internal and external, that combine to-

gether to determine the sense of a gerundial. What it is important to note in this respect is that a verb might combine with a factive gerundial in one context and with a non-factive one in another. Suffice it at this point to note that in certain of their occurrences, gerundials might be notionally interpreted as expressing a factive sense.

Finally notice that there are certain lexical items, which may not under any circumstances, combine with a factive gerundial. Such lexical items are semantically incompatible with the head-noun fact. For instance, none of the following lexical items may combine with a factive gerundial: false, likely, impossible, imperative, necessary, think, envisage, exhaust, tire out, etc. We will return to discuss this issue in due course.

Before we comment on the inconsistent, often contradictory, findings of this section, we will briefly discuss whether or not infinitivals may be employed in a factive sense.

5.5. Factive/non-factive infinitivals:

Like gerundials, infinitivals may be employed, though less characteristically, in a factive sense.²⁰ The infinitivals contained in the following sentences all seem to be employed in a factive sense:

- (1) a. It surprised us for John to have refused to come
- b. For them to have been sacked is annoying
- c. I am proud to have known him
- d. It distressed Abdul to be accused of dishonesty

That the underlined infinitivals in (1) are factive is consist-

ent with the remarks we have made about the concept of factivity in general and about factive gerundials in particular. First, in all of these sentences the speaker takes it for granted that the proposition expressed by the infinitival is true. In other words, the speaker (LS) presupposes that the sentence underlying the infinitival expresses a true proposition. Secondly, each of the underlined constructions is logically implied by the sentence within which it is embedded. Thus (1 a.) logically implies:

(2) a. John refused the offer

and (1 b.), (1 c.) and (1 d.) logically imply (2 b.), (2 c.) and (2 d.) respectively:

(2) b. They were sacked

c. I knew him

d. Abdul was accused of dishonesty

Thirdly, the negation of the examples in (1) would not alter the logical implications of these sentences. Thus like (1 a.), (3 a.):

(3) a. It did not surprise us for John to have refused to come

logically implies (2 a.), and like (1 b.), (3 b.):

(3) b. For them to have been sacked is not annoying

logically implies (2 b.). This test applies also to (1 c.) and (1 d.).

However, unlike factive gerundials, factive infinitivals never actually appear as surface complements to the head-noun fact:²¹ we shall not, for instance, attest:

(4) * The fact for John to have refused to come surprised us
Nonetheless each of the infinitivals in (1) can perfectly well
be replaced by a factive headed gerundial or a factive headed
that-clause without distorting the acceptability of the entire
sentence:²² viz.

- (5) a. The fact of John's having refused to come surprised
us
b. The fact that John refused to come surprised us

Like gerundials, infinitivals can notionally express a
factive sense if certain conditions, both in the matrix and the
embedded sentence, are satisfied. In what follows we shall pro-
ceed to discuss briefly the internal and the external factors
that seem to determine the sense of factivity expressed by an
infinitival.

5.5.1. External factors:

5.5.1.1. The main verb in the matrix S:

We have seen that some verbs may combine with a factive
complement **if** certain conditions are met and that some verbs
may never combine with a factive complement. To exemplify the
point under discussion, consider the following data:

- (6) a. It surprised us for John to have come late
b. It surprised John to have failed the exam
c. It surprised us for John to fail the exam
d. It would surprise John to fail the exam
e. It would surprise us for John to come late

- (7) a. We assumed John to be in London
b. We assumed John to have been in London
c. We would assume John to be in London
- (8) a. It was wise of Fred to have refused the offer
b. It would be wise of Fred to refuse the offer

The infinitivals in (6 a.), (6 b.), and (6 c.) unmistakably express a factive sense, for notice that the presuppositions of those sentences are preserved under Negation. The infinitivals in (6 d.) and (6 e.) express a hypothetical sense, and hence are non-factive. On the other hand, none of the infinitivals in (7) seems to express a factive sense. The examples in (6) and (7) show that whereas the verb surprise may in certain circumstances combine with a factive infinitival, the verb assume may not. Now let us consider the two infinitivals in (8 a.) and (8 b.). The infinitival in (8 a.) passes the test of factivity. First, the proposition expressed by the infinitival is logically implied by the matrix sentence. Secondly, the logical implication of (8 a.) is preserved under Negation: cf.

- (9) It was not wise of Fred to have refused the offer

However, the adjective wise does not seem to be semantically compatible with the noun fact, for while we might attest:

- (10) a. This was a wise action

and:

- (10) b. This was a wise decision

we do not attest:

- (10) c. *This was a wise fact

we will return to discuss this issue in an ensuing section. Unlike the infinitival in (8 a.), the infinitival in (8 b.) does

not express a factive sense, it rather expresses a hypothetical sense.

From the examples in (6), (7) and (8) we notice that:

- (i) Some verbs and adjectives do not combine with a factive infinitival (e.g. assume, likely, etc.);
- (ii) Certain verbs and adjectives (e.g. surprise, annoying, etc.) may combine with a factive infinitival if certain conditions are satisfied;
- (iii) The complement of certain verbs and adjectives may notionally be interpreted as factive even if the verb or the adjective associated with the complement is semantically incompatible with the head-noun fact (e.g. wise, foolish, etc.).

5.5.1.2. Tense/modal auxiliaries in matrix S:

It seems that the tense of the main verb in the matrix sentence has more bearing on the sense expressed by an infinitival than it has on the sense expressed by a gerundial. Consider the following examples:

- (11) To have lost his job was upsetting for John
- (12) To lose his job was upsetting for John
- (13) To have lost his job is upsetting for John
- (14) To lose his job is upsetting for John

The two infinitivals in (11) and (12) express a factive sense. This is not, however, the case in (13) and (14), where the tense of the matrix verb is present and not past as in (11) and (12). Only the infinitival in (13) seems to express a factive sense. The infinitival in (14), though capable of expressing a factive sense, could also be understood as expressing a non-factive sense, in particular a hypothetical sense, evidence that the

tense of the verb in the matrix ~~space~~ contributes to determining the sense expressed by the associated infinitival.

These remarks also apply to infinitivals in non-copulative sentences. Consider the following examples:

- (15) a. It upset Bill to have missed the train
b. It upset Bill to miss the train
(16) a. It upsets Bill to have missed the train
b. It upsets Bill to miss the train

From these examples we notice that changing the tense of the matrix verb is likely to alter the sense expressed by a simple infinitival, but not a have-infinitival. The two infinitivals in (15 a.) and (16 a.) express a factive sense. This is not, however, true of the simple infinitivals in (15 b.) and (16 b.). Only the infinitival in (15 b.) seems to express a factive sense. On the other hand, the infinitival in (16 b.) does not seem to express a factive sense at all. Indeed sentence (16 b.) could be paraphrased by:

- (17) It upsets Bill if he misses the train

It should be born in mind, however, that the remarks in this section are not to be taken as applying to all occurrences of the infinitival. All that we mean to show is that it is not always easy to characterize, even notionally, the sense expressed by an infinitival, and that there are various factors involved in determining this sense.

The incorporation of a modal auxiliary in the matrix sentence has a great effect on the sense expressed by an infinitival. In fact most infinitivals contained in a sentence that

incorporates a modal auxiliary tend to express a non-factive hypothetical sense. A few examples will help to illustrate the point under discussion.

- (18) a. For John to have lost the keys upsets his wife
 b. For John to have lost the keys would upset his wife
- (19) a. It annoys Bill for John to divorce his wife
 b. It will annoy Bill for John to divorce his wife
- (20) a. To have lost the keys annoys John
 b. To have lost the keys might annoy John

If we compare the (a) sentences with the (b) ones in (18), (19) and (20), we notice that the incorporation of a modal auxiliary in the matrix sentence affects the sense of the infinitival.

5.5.2. Internal factors:

The internal factors that seem to determine the sense expressed by an infinitival are: the morphological shape of the infinitival, its main verb, and the specificity of the subject and object NP's of the clause. We will not discuss these factors in detail here but a few examples will be in order.

First, the sense of the infinitival is determined by (a) whether the infinitival is in the simple form or in the have-form, and (b) whether or not its subject is expressed. Consider the following examples:

- (21) a. It is annoying for John to have been sacked
 b. It is annoying to be sacked

Unlike the infinitival in (21 a.), which expresses a factive sense, the infinitival in (21 b.) expresses a hypothetical sense

though, like the first one, it combines with the same adjective. In other words the morphological shape of the infinitival determines the sense in which it is employed.

Secondly, the main verb in the sentence underlying an infinitival clause plays a role in determining the sense expressed by the infinitival. For instance, while the infinitival in, say:

(22) a. It annoyed John to lose the game

may be interpreted in a factive sense, the infinitival in:

(22) b. It annoyed John to clean the place out

may, in addition to expressing a factive sense, be interpreted in an action sense. These semantic discrepancies between the infinitival in (22 a.) and the infinitival in (22 b.) seem to correlate with co-occurrence restrictions, for whereas the infinitival in (22 b.) can combine with a verb like tire, the infinitival in (22 a.) cannot. Witness the acceptability of:

(23) a. It tired John to clean the place out

and the unacceptability of:

(23) b.?*It tired John to lose the game

It should be noted in this respect that no available analysis of gerundials and infinitivals can, as far as I know, predict the acceptability of (23 a.) and the unacceptability of (23 b.). This is mainly because the internal structure of gerundials and infinitivals has been completely ignored. We shall discuss this issue in 5.7. below.

Thirdly, the sense expressed by an infinitival seems also

to be determined by whether its subject NP is specific or is understood to be the generic pronoun one. Compare the following examples:

- (24) a. It was an advantage for her to learn a foreign language
b. In those days it was an advantage to learn a foreign language

The infinitival in (24 a.) may be interpreted as expressing a factive sense, whereas the one in (24 b.) may not.

5.6. Factive gerundials and infinitivals reconsidered:

So far we have been talking rather informally and notionally about the factivity of gerundials and infinitivals. Nonetheless we managed to specify some factors that count towards whether or not a complement is understood as factive. At this stage it would be convenient to state these factors briefly - let us call them 'factivity conditions' - and see whether or not they have any syntactic significance. The factivity conditions as formulated in the preceding two sections are:

(i) The speaker presupposes that the proposition expressed by the S underlying a gerundial or an infinitival is true. Excluded from this condition are cases where the speaker is lying, speaking in jest, or does not understand what he is saying (cf. footnote 10 above).

(ii) The proposition expressed by the sentence underlying a gerundial or an infinitival is logically implied by the matrix sentence within which the gerundial or the infinitival is incorporated.

(iii) The negation of the sentence containing the gerundial or

the infinitival also logically implies the truth of the complement.

These conditions are linguistically materialized through combining two sets of linguistic factors, which we have classified as "internal" and "external" factors. Most prominent amongst these factors is the main verb (the predicative adjectival, or the predicative nominal in the case of copulative sentences) in the matrix sentence. In this respect we have seen that there are lexical items which cannot, under any circumstances, combine with a factive complement. Amongst these are: false, seem, impossible, wish, unlikely, etc. On the other hand, there are lexical items which, if other conditions are satisfied, can combine with a factive complement. Amongst these are: regret, odd, significant, etc. Other external linguistic factors that determine the sense of a complement are the tense and the presence of a modal auxiliary in the matrix sentence. The internal factors that build up the sense expressed by a complement are: the morphological shape of the complement, its underlying main verb, and the specificity of its object and subject NP's. The question of how to incorporate these facts into the theory will depend first on whether there is any significance at all in drawing a distinction between two types of complement: factive and non-factive.

5.6.1. Syntactic criteria:

We have already mentioned that the only analysis of noun phrase complementation that endeavours to draw a syntactic distinction between factive and non-factive complements is that of the Kiparskys (Kiparsky and Kiparsky, 1970). However, we

have shown, on the other hand, that - in most respects - the Kiparskys' analysis is erratic - cf. 4.5.3. For expository purposes, I shall briefly discuss the claims made by the Kiparskys and show that they are wanting:

(i) The Kiparskys claim that in the case of factive complements Extraposition - in Rosenbaum's sense - is optional, whereas it is obligatory in the case of non-factive complements. This is certainly a false claim, for witness the perfectly acceptable sentence:

(1) That he might come late tonight is quite possible

(I am intentionally using that-clauses because in their article the Kiparskys do not seem to think that infinitivals can express a factive sense). According to the Kiparskys, sentence (1) is ungrammatical because the that-clause it contains is non-factive (the adjective possible is marked as non-factive by the Kiparskys), and thus it should be obligatorily extraposed. It is noteworthy in this respect that both non-factive gerundials and non-factive infinitivals can quite comfortably occur overtly in the subject position. Consider the following data:

(2) a. To cross this river is difficult

b. To suggest devaluation would anger the bankers

c. For John to fail the exam would be a pity

(3) a. Taking this exam is necessary

b. Meeting the students is of the utmost importance

c. His coming to Bangor is quite possible²³

None of the infinitivals in (2) or the gerundials in (3) expresses a factive sense, and yet none of them has undergone the Extraposition transformation. Indeed we have shown in Chapter IV - cf. 4.5.4. above - that Extraposition is never obligatory

in the case of subject gerundials and infinitivals which, under the Kiparskys analysis, entails that all instances of subject complements are factive. However, this is not the case for they themselves recognise that in certain of their occurrences, subject complements do not express a factive sense. The conclusion to be drawn from this argument is that the Kiparskys' claim mentioned above is false.

(ii) The Kiparskys argue - cf. p.146 - that gerundials can be objects of factive predicates, but not freely of non-factive predicates. Again this claim is false, for gerundials can quite comfortably, and in various contexts, co-occur with non-factive predicates. All the gerundials contained in the following examples express a non-factive sense:

- (4) a. I am afraid of mother hearing the news
- b. I am thinking of his marrying one of my daughters²⁴
- c. She first stopped the students' complaining about the food
- d. You would enjoy her being with us

Related to this argument is the Kiparskys' claim that "only factive predicates allow the full range of gerundial constructions" - cf. p.144. However, we have shown this claim to be false (cf. section 5.4.1.1. above).

(iii) Only non-factive predicates - the Kiparskys claim - allow the accusative and infinitive construction. They cite the following evidence (cf. p.146):

- (5) a. I believe Mary to have been the one who did it
- b. He fancies himself to be an expert in pottery
- (6) a. *I resent Mary to have been the one who did it
- b. *He comprehends himself to be an expert in pottery

In other words, the Raising transformation applies only to non-factive complements. In reply to this we can adduce the following arguments. First, there are certain non-factive infinitivals that occur in the object position and that do not allow Subject-Raising. The following two examples are borrowed from Perlmutter (1971: 116):

- (7) a. I hate it for Lucille to sing Dixie
b. I hate for Lucille to sing Dixie²⁵

That the subject NP of the embedded sentence beneath hate cannot be raised becomes obvious when we consider sentences like:

- (8) a. *Fred hates for himself to be nominated
b. *Fred hates himself to be nominated

Compare these two sentences to:

- (9) Fred expects himself to be nominated

The differential ability of reflexive pronouns to occur in (8) and (9) confirms that with expect the embedded subject is raised into the matrix sentence, but with hate it remains in the lower sentence, for the Reflexivization transformation applies only within a single S (cf. Lees and Klima, 1963: 21). Here are some more examples which clearly show that not all non-factive complements undergo Raising:

- (10) a. I mean for you to inherit the business
b. She prefers for you to stay here
c. I want for you to be happy

None of the infinitivals in (7) and (10) may be interpreted in a factive sense. Notice in passing that the appearance of the morpheme for in the embedded sentences in (7) and (10) cannot be accounted for by means of the Kiparskys' proposal, according to

which the infinitival complementizer appears when the subject has been removed from an embedded sentence. To quote them on this matter: "infinitives arise regularly when the subject of an embedded sentence is removed by a transformation, or else placed into an oblique case, so that in either case agreement between subject and verb cannot take place" (cf. p.160). Returning to the main theme, we have shown that not all non-factive complements are sensitive to Raising, and since this is the case one wonders whether the fact that some non-factive complements undergo Raising could be used as a syntactic criterion to distinguish between factive and non-factive complements. By way of further exemplification consider the following two examples:

- (11) a. It is possible that he will arrive on time
b. It is likely that he will arrive on time

The two complements in (11 a.) and (11 b.) are, under the Kiparskys' analysis non-factive, but notice that only the structure underlying the that-clause in (11 b.) but not in (11 a.) can undergo Subject-Raising: viz.

- (12) a. *He is possible to arrive on time
b. He is likely to arrive on time

Related to this point is the fact that Subject-Raising does not apply to that-clauses regardless of whether they co-occur with factive or non-factive predicates. Similarly, this transformation (i.e. Subject-Raising) does not apply to gerundials, regardless of whether they combine with a factive or a non-factive predicate.

Secondly, there are some verbs that co-occur with a fact-

ive gerundial or a factive that-clause, and which when combined with an infinitival allow Subject-Raising. Consider, for instance, the following complements that combine with the verb recognise:

- (13) a. He recognised that she had deserted him
- b. He did not recognise that she had deserted him
- c. He recognised her to have deserted him²⁶

The verb recognise is obviously used in a factive sense, for notice that both the affirmative sentence in (13 a.) and its negative counterpart (13 b.) logically imply:

- (13) d. She had deserted him

In (13 c.) Subject-Raising has applied to the structure underlying the infinitival, evidence that the Kiparskys' claim is false. By way of further exemplification consider the following three examples which give further support to our argument in this paragraph:

- (14) a. He realized that she had tricked him
- b. He did not realize that she had tricked him
- c. He realized her to have tricked him

Thirdly, notice that the verbs which the Kiparskys use to exemplify their point (i.e. resent and comprehend: cf. (6 a.) and (6 b.)) do not co-occur with any form of the infinitival regardless of whether its subject is raised or not.²⁷ Since these two verbs do not co-occur with the infinitival complementizer in deep structure, it is odd to base an argument on the inadmissibility of sentences like (6 a.) and (6 b.). In other words the verbs resent and comprehend are not subcategorized for the infinitival complementizer, and since they are not, how could

we expect them to co-occur with an infinitival whose subject has been raised?

(iv) The Kiparskys claim that Negative-Raising applies only to non-factive complements but not to factive ones. Thus while:

(15) a. It is not likely that he will come
is derived from the structure underlying:

(15) b. It is likely that he will not come
through the application of the Negative-Raising transformation, the Kiparskys maintain that we cannot derive:

(16) a. I do not regret that he can help doing things like that
from the structure underlying:

(16) b. I regret that he can't help doing things like that
This seems to be true, but, as we have pointed out, Neg-Raising is a minor transformation whose application is limited to a handful of verbs and adjectives like: seem, appear, likely, possible, think and a few others. In addition we have pointed out that there are semantic discrepancies between a sentence like (15 a.) and its allegedly transformationally related sentence (15 b.): cf. 2.8.2. Notice further that this transformation is not operative on all instances of non-factive complements: cf.

(17) a. I prefer you not to stay here \Rightarrow
b. I do not prefer you to stay here

(18) a. She is considering not applying for a job \Rightarrow
b. She is not considering applying for a job

(v) The Kiparskys distinguish between a factive it and an expletive it, the first of which occurs only with factive comple-

ments. We discussed this issue in detail in the preceding chapter and saw that such a distinction is superficial and unmotivated (cf. 4.5.3.).

(vi) The Kiparskys argue that Ross's Complex NP Constraint is operative on factive complements but not on non-factive ones. We discussed this question in the preceding chapter and we very tentatively suggested that the distinction between factive and non-factive complements in terms of the applicability of this constraint is not highly motivated. We shall be returning to elaborate on this soon, but before we do, we will show that the Kiparskys' analysis suffers from serious shortcomings other than those we have already pointed out.

It is the Kiparskys' contention that infinitivals cannot be employed in a factive sense regardless of the type of predicate they combine with. In other words, it is the Kiparskys' contention that the gerundial contained in, say:

(19) a. His having left the door open is odd

is factive, whereas the infinitival in:

(19) b. For him to have left the door open is odd

is non-factive. We have shown in the preceding section that if the gerundial in (19 a.) is interpreted in a factive sense, then the infinitival in (19 b.) should be interpreted in the same way. We based our argument on the conditions of factivity, two of which are mentioned by the Kiparskys. First, like (19 a.), (19 b.) logically implies:

(20) He left the door open

Secondly, like the implication of (19 a.), the implication of (19 b.) is preserved under negation. Thus, like (19 a.) and (19 b.),

(21) a. His leaving the door open is not odd
implies (20) and so does:

(21) b. For him to have left the door open is not odd
Thirdly, like (19 a.), (19 b.) would be said by a person who presupposes that the proposition expressed by the complement is true.

In the light of these data one could argue that if we insist on classifying gerundials as factive and non-factive, infinitivals should be classified in the same way. In fact we do not gain anything from treating the gerundial in (19 a.) as factive and the infinitival in (19 b.) as non-factive. After all, in the absence of supporting syntactic evidence, we are inclined to view the two types of complement instanced in (19 a.) and (19 b.) as factive. In other words, the factivity of the action in both (19 a.) and (19 b.) is unquestionable. It sounds as if we are suggesting that (19 a.) and (19 b.) are synonymous and that they have an identical deep structure. In fact this is not the case, for there are quite subtle semantic discrepancies, still dimly understood, between the two sentences. This is of course due to the presence of different complementizers in the structures underlying (19 a.) and (19 b.). The difference between (19 a.) and (19 b.) could be possibly compared to the difference between (22 a.) and (22 b.): viz.

(22) a. I like driving this car

b. I like to drive this car

This issue will be discussed in 5.8. below. Suffice it at this point to mention that in certain of their occurrences infinitivals express a factive sense.

Now let us return to discuss the Complex NP Constraint to see whether or not it is operative on factive gerundials and factive infinitivals. The Kiparskys claim that this constraint is operative only on factive complements. Under this constraint, only elements in a non-factive complement can be questioned or relativized. Now let us see whether this is true or not. Consider the following examples:

- (23) a. His visiting the city is odd
b. His visiting the city is quite possible²⁸
- (24) a. For you to have visited the city is odd
b. For you to visit the city is quite possible

According to the Kiparskys, the gerundial in (23 a.) is factive, whereas that in (23 b.) is non-factive, so it would be possible for instance, to relativize the NP the city in the former but not in the latter.²⁹ In fact the application of this transformation would result in awkward sentences in both cases: viz.

- (25) a.?*The city which his visiting is odd is not far from here
b.?*The city which his visiting is quite possible is not far from here

However, the unacceptability of these two sentences could be accounted for on independent grounds, namely in terms of the Sentential Subject Constraint - cf. Ross, 1968, 134 (see also 4.4. above). What it is important to note in this respect is that (25 b.) is not better than (25 a.), prima facie evidence that the unacceptability of (25 a.) is not a function of the factivity of the gerundial in (23 a.). However, before we jump to conclusions, let us see whether or not the NP the city in

the infinitival contained in (24 a.) and (24 b.) is relativizable (cf. footnote 29). Notice that the infinitival in (24 a) is factive whereas the one in (24 b.) is non-factive. It seems that neither occurrence of the NP the city in (24 a.) and (24 b.) may be relativized for witness the unacceptability of the following two sentences:

(26) a.?*The city which for you to have visited is odd
is not far from here

b.?*The city which for you to visit is quite possible
is not far from here

Again sentence (26 b.) is not better than (26 a.), further supporting evidence that it is not the factivity of the complement that erects a barrier against the relativization of the constituent NP's contained in the complement. We have discussed this topic in detail in Chapter IV (cf. 4.4.) and there would be no point in discussing it again. Suffice it at this point to note that:

A. NP's contained in a subject gerundial or infinitival are immune to Relativization irrespective of whether or not the gerundial or the infinitival is factive. This phenomenon is, however, accounted for in terms of the Sentential Subject Constraint.

B. The subject NP of an object gerundial or an infinitival may not be relativized regardless of the sense expressed by the gerundial or the infinitival. This phenomenon is accounted for in terms of Perlmutter's Subjectless Sentence Constraint (cf. Perlmutter, 1971: 100, 108-22; see also 4.4. above).

C. The object NP of an object gerundial or an infinitival is sensitive to Relativization regardless of whether the gerundial

or the infinitival is factive or non-factive.

Before we close this subsection, however, let us consider some further evidence that the Kiparskys' analysis is ad hoc and insufficiently motivated. Consider the that-clause contained in the following example:

(27) a. Sue said that the students had burnt the office
Obviously, the that-clause in this sentence is non-factive, for (27 a.) does not presuppose:

(27) b. The students had burnt the office
nor does the negative counterpart of (27 a.) presuppose (27 b.):

(27) c. Sue did not say that the students had burnt the office

Thus according to the Kiparskys, the that-clause in (27 a.) is the sole constituent of the dominating NP and that it is not preceded by a lexical head-noun in deep structure. In other words, NP's contained in this clause are not subject to Ross's Complex NP Constraint. In fact this is not the case, for in accordance with Perlmutter's Subjectless Sentence Constraint, the NP the students in (27 a.) is insensitive to Relativization and Wh-Fronting, and so it is: cf.

(27) d.*The students who Sue said that had burnt the office
came from Lancaster University

e.*Who did Sue say that had burnt the office?

Under the Kiparskys' analysis, both (27 d.) and (27 e.) should be grammatical. It could be argued, however, that (27 d.) and (27 e.) will be acceptable if the complementizer that is deleted. In fact this is true: cf.

(27) f. The students who Sue said had burnt the office
came from Lancaster University

g. Who did Sue say had burnt the office?

However, this does not seem to be a piece of supporting evidence for the Kiparskys' analysis, for there are contexts in which the complementizer that contained in certain non-factive that-clauses may not be deleted. The verb quip, for instance, is not likely to be used in a factive sense, and yet the subject NP of its complement is immune to Relativization: viz.

(28) a. Mike quipped that the girl never drove the car

b. *The girl who Mike quipped that never drove the
car is a cousin of mine

The deletion of the complementizer that in (28 b.) does not produce an acceptable sentence: viz.

(28) c. *The girl who Mike quipped never drove the car is
a cousin of mine

To sum up, we have shown in this subsection that there are no syntactic criteria that can distinguish between complements that we have been notionally characterizing as factive and those that we have been characterizing as non-factive. After all, it is not clear at all whether we gain anything from classifying complements in terms of the categories: factive and non-factive. In what follows we will argue that there is nothing to gain from classifying complements as factive or non-factive. Instead we suggest that complements should be assigned certain semantic features that would account for their external relations and co-occurrence restrictions.

5.6.2. Recapitulation:

We have seen in the preceding sections that though gerundials and infinitivals may be notionally classified as factive and non-factive, it is not possible to draw a syntactic distinction between the two types. We have also seen that the factivity conditions which we enumerated at the beginning of this section are, in addition to being notional, determined by various linguistic factors contained both in the matrix and in the embedded sentence. However, it is not clear whether these factors could be treated with precision in a theory that purports to state a small number of generalizations rather than an endless list of rules and constraints. This is not to say, however, that the ~~senses~~ senses expressed by gerundials and infinitivals should not be handled in such a theory. On the contrary, for any theory to be descriptively and explanatorily adequate, it should explicitly state the semantic interpretation of each occurrence of the gerundial and the infinitival. However, before we proceed to see how the grammar would handle the question of the semantics of gerundials and infinitivals, it would be convenient to discuss some related issues which clearly show that we do not gain anything from classifying gerundials and infinitivals into the categories: factive and non-factive.

(i) It has been pointed out by Matthews (1972: 128) that there is no real difference between an "act" and the "fact of an act". Archibald Hill, on the other hand, maintains that for him "factive and non-factive predicates behave in most respects alike and that even the word fact in his speech has lost its literal meaning and can head clauses for which no presupposition of truth is made" (cf. Kiparsky and Kiparsky, 1970: p.147,

footnote 3). In fact consideration of sentences like:

(29) You would regret the fact that you had been dishonest shows that what Archibald Hill says is true. Notice in this respect that though the that-clause in (29) is preceded by the head-noun fact, sentence (29) does not presuppose:

(30) You had been dishonest

As we pointed out in 5.3.2. not many native speakers seem to be aware of the logical and psychological implications involved in the use of the noun fact, though they might quite often use it in their speech - cf. footnote 7.

(ii) The conditions which we have been referring to as "factivity conditions" are in fact closely related, if not identical, to the conditions of "logical consequence" (cf. Keenan, 1971: 45), which seems to be a basic issue in both philosophy and linguistics. In fact by insisting that the grammar, at least that of NP complementation, should incorporate a set of "factivity conditions", we not only lose generalization but we duplicate the grammatical description since the notion of "presupposition" that underlies "logical consequence" has to be included in the grammar to account for other linguistic phenomena. Thus it sounds reasonable to argue that all instances of what we have been referring to as factive complements are in fact a function of the notion of presupposition. Admittedly, at the present stage of linguistic research there does not seem to be general agreement among linguists as to the treatment of "presupposition" in linguistic description (cf. footnote 9). However, all the types of gerundial and infinitival that we have been referring to as factive will be automatically accounted for in terms of "logical consequences" if we concede that the

presupposition of sentences and lexical items should be incorporated in the theory. On these bases, we would suggest that the distinction between factive and non-factive complements is superfluous and serves no purpose either syntactic or semantic. Added to this is the fact that such a distinction involves duplication in linguistic description, and thus on grounds of generality and simplicity it should be abandoned. Our claim is strengthened by the fact that it is the main verb (the predicative adjectival or the predicative nominal in copulative sentences) in the matrix sentence that basically determines the presupposition of a sentence. For instance, the verb want has no presuppositional properties, whereas the verb regret entails that something undesirable has taken place or is to take place. This accords with the fact that only the latter but not the former can combine with what we have been referring to as factive complements.

To sum up, the notion of "factivity" has no proper place in linguistic description since its conditions are those of the more basic and general notion "presupposition". In what follows we will cite further evidence that supports our claim that the notion of factivity in linguistic description is superfluous.

(iii) The third point we wish to raise in this respect is related to derived nominals like: arrival, death, destruction, etc., and to certain non-derived nouns marked [- concrete] like: accident, disaster, intelligence, etc.³⁰ To begin with, let us consider the following data:

- (31) a. I am sorry about your mother's death
b. The destruction of the city is regrettable

(31) c. The arrival of John on time surprised us

(32) a. I am sorry about this mess

b. The accident on the M1 is regrettable

c. His intelligence surprised us

On careful scrutiny, we would not fail to recognise that each of the underlined nominals in (31) and (32) expresses a factive sense - in the sense in which we have been using the term "factive". For instance, the proposition expressed by the nominal in (31 a.) is presupposed by the sentence that contains it. In other words, (31 a.) logically presupposes:

(33) Your mother died

Moreover the negation of (31 a.): viz.

(34) I am not sorry about your mother's death

also logically presupposes (33). These remarks also apply to the nominals in (31 b.) and (31 c.). Similarly, each of the underlined nominals in (32) is logically presupposed by the sentence that contains it, and the presupposition of each sentence is preserved under Negation. For instance, (32 b.) logically implies:

(35) $\left\{ \begin{array}{l} \text{There was an accident on the M1} \\ \text{An accident happened on the M1} \end{array} \right\}$

Notice further that (35) is also logically implied by:

(36) The accident on the M1 is not regrettable

On these grounds, it seems that derived nominals and certain non-derived nouns can be employed in a factive sense. In fact it would not be far fetched to paraphrase (31 a.) as:

(37) I am sorry about the fact of your mother's death
and to paraphrase (32 b.) as:

(38) The fact of the accident on the M1 is regrettable

However, a careful study of the various contexts in which nominals of the type instanced in (31) and (32) occur reveals that the sense of factivity is not an inherent semantic property of these nominals. In fact it is a function of the main verb, the predicative adjectival, or the predicative nominal in the sentence that contains the nominal. Consider, for instance, the following examples:

- (39) a. Your mother's death was untimely
b. The accident on the M1 took place at 6.30 p.m.

Neither of the underlined nominals in (39) seems to be capable of being incremented by addition of a sequence of the type:
Det + fact + of: cf.

- (40) a. *The fact of your mother's death was untimely
b. *The fact of the accident took place at 6.30 p.m.

Notice again that like (31 a.), (39 a.) logically implies (33); similarly, like (32 b.), (39 b.) logically implies (35).

The question to be decided is whether there is anything to be gained from classifying derived nominals in terms of "factive" and "non-factive". In fact there is nothing to gain. On the contrary, such an analysis will give rise to endless problems, problems that have to do with the contextual restrictions holding between a nominal and its linguistic environment. For example, in addition to enumerating the contextual restrictions in terms of the syntactic and semantic features that the noun carries, we would have - under the proposed analysis - to take into account the contextual restrictions associated with the

allegedly deep structure head-noun, namely fact (cf. examples (37) and (38) above). Thus on syntactic grounds this postulation is not desirable.

The relevance of this argument to the issue under discussion is this: If we retain our analysis of NP complements in terms of the categories "factive" and "non-factive", then a priori, this analysis should be extended to derived nominals and certain non-derived nouns. On the contrary, such an analysis complicates the grammatical apparatus and gives rise to endless problems. Semantically, on the other hand, the difference between the type of nominal instanced in (31) and (32) and those instanced in (39) would be accounted for in terms of the presuppositions associated with verbs and adjectives. Alternatively, it could be the case that the type of nominal instanced in (31) and (32) has certain semantic features that determine its sense in the various contexts in which it might occur. We return to elaborate on this suggestion in the following subsection.

(iv) The "factivity conditions", if they are ever to be incorporated into the theory, do not always give correct predictions. To explain the point under discussion consider the following examples:

- (41) a. Crossing the river tired John out
- b. Meeting the students was wise of you
- c. It was awkward of you to hit the girl .
- d. It is kind of him to have accepted your invitation

If we were to take the "factivity conditions" seriously, then all of the underlined complements in (41) would be factive. Let us consider, for example, the gerundial in (41 a.). First,

sentence (41 a.) logically implies:

(42) John crossed the river

Secondly, the negative counterpart of (41 a.) logically implies (42): viz.

(43) Crossing the river did not tire John out

However, none of the underlined complements in (41) may be intuitively understood as expressing a factive sense. Witness, for instance, the oddity of the following two examples:

(44) a. *The fact of crossing the river tired John out

b. *The fact of meeting the students was wise of you

After all, adjectives like wise, kind and awkward are semantically incompatible with the head-noun fact, evidence that the noun fact does not exist in the deep structure of the complements in (41).

All these arguments point to the logical conclusion that the classification of gerundials and infinitivals in terms of the two categories "factive" and "non-factive" is an unnecessary complication of the grammar. Nonetheless, the grammar of NP complementation should have a device that could characterize sentences like the following as ungrammatical:

(45) a. *Rowing the boat was unfortunate

b. *His having passed the exam is exhausting

As far as I know no available analysis of noun phrase complementation can account for, or even predict, the ungrammaticality of these two sentences. In what follows we will address ourselves to this question. Suffice it at this point to mention that such a question has never been raised in the literature.

5.7. Semantic incompatibility:

Let us begin this section by examining the following data:

- (1) a. His arrival on time surprised us
b. *His arrival on time exhausted us
- (2) a. Your mother's death is distressing
b. *Your mother's death is boring
- (3) a. The removal of the garbage surprised us
b. The removal of the garbage tired us
- (4) a. *That fact exhausted John
b. That action exhausted John
- (5) a. This action is urgent
b. *This fact is urgent
- (6) a. This fact appears in his report
b. *This action appears in his report
- (7) a. This fact is significant
b. This action is significant
- (8) a. This fact surprised us
b. This action surprised us

Examples (4-8) show us that although there are contexts in which it is possible for both fact and action to occur, there are contexts in which one but not the other can occur. For instance, the verb surprise can co-occur with either of these two nouns, whereas the adjective urgent can co-occur with the noun action; the verb appear can co-occur with the noun fact only. It should be noted that though the two nouns carry the feature [+ abstract], they do not seem to share all the selectional restrictions. Now let us consider examples (1-3). The oddity of (1 a.) and (2 a.) could perhaps be compared to the oddity of

(4 a.) and (5 b.). What is meant by this is that there are certain lexical items like exhaust, bore, urgent, etc. that do not combine with nominals that designate "facts" or "events", they rather combine with ones that designate "actions." This is a purely semantic issue, for a "fact" or an "event" cannot be "exhausting", but an "action" can. The two nominals in (1 b.) and (2 b.) refer to "events", and this explains the oddity of these two sentences. On the other hand, the nominal in (3 b.) refers to an "action" or an "activity", which is semantically compatible with a verb like tire. It was such considerations that led us to distinguish in a preceding section between sentences that designate an "action" and those that designate an "event" (cf. 5.4.1.2. above).

It is in fact in such terms only that the grammar can block the generation of sentences like (1 b.) and (2 b.). If we assume that each derived nominal of the type instanced in (1-3) is assigned a feature that semantically characterizes its sense, then we could possibly argue that the oddity of (1 b.), for instance, arises from the fact that the feature which the nominal in this sentence carries is incompatible with the verb exhaust (how and where these features are attached to the nominal is of no direct relevance to this work). As a first approximation we suggest that each derived nominal be positively marked with one of the following features: $[\pm \text{ act}]$; $[\pm \text{ event}]$, and $[\pm \text{ state}]$ ³¹: cf.

- (9) a. His arrival $[+ \text{ event}]$
- b. The removal of the garbage $[+ \text{ act}]$
- c. His intelligence $[+ \text{ state}]$

Thus by assigning the feature [+ act] to the nominal in (3 b.) we can predict the acceptability of this sentence, and by assigning the feature [+ event] to the nominal in (1 b.) we can predict the unacceptability of this sentence.

Now let us see the relevance of the preceding argument to the grammar of gerundials and infinitivals. Consider the following data:

- (10) a. His arriving on time surprised Jane
b. *His arriving on time exhausted Jane
- (11) a. *His crossing the river exhausted us
b. Crossing the river exhausted us
- (12) a. Your breaking the window is unfortunate
b. *Breaking the window is unfortunate

We have pointed out at the end of the preceding section that no presently available analysis of NP complementation can predict the unacceptability of sentences like (10 b.), (11 a.) and (12 b.). Thus we need machinery to predict the ungrammaticality of such sentences and consequently to block their generation. Let us address ourselves first to the question of characterizing sentences like (10 b.), (11 a.) and (12 b.) as ungrammatical.

It is worth noting at the outset that the ungrammaticality of these sentences is due to the semantic incompatibility of the embedded sentence with the main verb or the predicative adjective in the matrix sentence, for there are no restrictions on the occurrence of the gerundial complementizer in these sentences. In other words, this phenomenon is an instance of

intra-sentential restriction. The question is: how does the grammar predict the non-occurrence of such sentences? The postulation of semantic features in the deep structure of complement sentences seems to be the most feasible answer. In other words, complement sentences should be assigned certain features, possibly semantic, similar to the features assigned to derived nominals. However, there is one basic difference between derived nominals and embedded sentences underlying an NP complement, namely, that derived nominals are introduced in the phrase structure rules of the grammar through expanding the category NP - i.e. they are not transformationally derived from an underlying embedded sentence³² - whereas NP complements (excluding headed complements) derive from an underlying embedded sentence that does not share the constituency of the dominating category (Comp under our analysis) with a preceding N or NP. Thus it would be possible in the former case (i.e. derived nominals) to assign the features to the category N, whereas in the latter case it is not clear where these features should be located. We return to discuss this question below.

Now let us consider the type of semantic features which we need to recognise in the grammar of NP complementation and the bases for setting up these features. It seems that, like derived nominals, gerundials and infinitivals refer to "actions" "events" and "states". Thus, for instance, the gerundial in (10 a.) refers to an "event", whereas the gerundial in (11 b.) refers to an "action" or to an "activity" (this is a tentative statement which will be modified below). If this is so, we should be able to account for the unacceptability of (10 b.),

(11 a.) and (12 b.), and to account for the acceptability of (10 a.), (11 b.) and (12 a.). This seems to be quite possible. First, the gerundial in (10 a.) refers to an event, which is semantically compatible with the verb surprise, but it is semantically incompatible with the verb exhaust.³³ This explains why sentence (10 a.) is acceptable and why sentence (10 b.) is not. Secondly, the gerundial in (11 a.) designates an "event" and this is semantically incompatible with the verb exhaust, whereas the gerundial in (11 b.) designates an "activity", which is compatible with this verb. This explains the acceptability of (11 b.) and the unacceptability of (11 a.). Thirdly, the gerundial in (12 a.) refers to an "event", which is compatible with the adjective unfortunate, whereas the gerundial in (12 b.) refers to an "activity", which is incompatible with this adjective.

How could the grammar incorporate these semantic features in the embedded sentence underlying a gerundial or an infinitival? The best way of doing this, it seems, is to create a node N under the category that dominates the embedded sentence. In other words, the embedded sentence will share the constituency of the dominating category with a preceding N. This created node will consist solely of semantic features. In other words, the N will be phonetically realized as zero in surface structure. The creation of this node is justified on independent grounds, namely that it will carry the feature [+singular] and this would, for instance, predict the non-occurrence of such sentences as:

(13) a. *His coming late are a nuisance

In other words, the presence of an N before the embedded sentence is necessary for subject-verb concord. Secondly, this node (i.e. N) will carry the feature [+ abstract] and this would preclude the generation of sentences such as:

(13) b.* His coming late drank the beer

Thirdly, this node will be positively specified for one of the following features: [act], [state] and [event]. It is in terms of co-occurrence restrictions between such features and the main verb (or the predicative adjectival or the predicative nominal in copulative sentences) in the matrix sentence that we can predict the occurrence of grammatical sentences and the non-occurrence of ungrammatical ones. Our postulation that certain embedded sentences are preceded by a non-lexical category that solely dominates features is possible on theoretical grounds. In fact it has been pointed out by Chomsky that "certain features should also be associated with non-lexical phrase categories" (cf. Chomsky, 1970-a: 207). Such a position, Chomsky maintains, has been argued for by both McCawley and Weinreich (cf. Chomsky, 1970-a: 220, footnote 31).

The question to be decided now is what embedded sentences are assigned the feature [+ event] and what embedded sentences are assigned the feature [+ act] or [+ state]. Very tentatively, we might make the following suggestions. First, every embedded sentence whose main verb or predicative adjectival is [+ stative] is to be assigned the feature [+ state]. Secondly, every sentence that is not marked either [+ state] or [+ act] designates an "event". In what follows we will attempt to

characterize sentences that should be assigned the feature [+ act]. Very tentatively again, we suggest that a sentence be assigned the feature [+ act] in the following circumstances:

A. If the subject NP is the generic form one, which gets deleted through the application of Equi-NP-Deletion (cf. 2.2.1.) and if the verb or predicative adjectival in the embedded sentence is [- stative]. All the gerundials and infinitivals contained in the following sentences should be assigned the feature [+ act] in deep structure:

- (14) a. It is difficult to cross the river
b. Shouting at ladies is impolite
c. Talking to foreigners is pleasant
d. It is irritating to mark registers

B. If the subject NP of the embedded sentence is co-referential with an NP in the matrix sentence (the embedded subject gets deleted by Equi-NP-Deletion) and if the main verb in the embedded sentence is [- stative]:

- (15) a. Cleaning the place out exhausted Jane
b. It tired her to look after five children
c. Locking the door was wise of you
d. She was anxious to go home

However, before we elaborate on the aforementioned suggestions, let us consider the following data:

- (16) a. I tried to open the door
b. *I tried to know the answer
- (17) a. She condescended to be polite
b. *She condescended to be ashamed

- (18) a. I persuaded John to eat the apples
b. *I persuaded John to like the apples
- (19) a. Fred is keen on playing tennis
b. *Fred is keen on appreciating music

Let us see whether the proposed analysis can account for the acceptability of the (a) sentences in (16-19) and the unacceptability of the (b) ones. The infinitival in (16 a.) should be marked, under the proposed analysis, [+ action], which is semantically compatible with a verb like try and this explains the acceptability of (16 a.). On the other hand, the main verb of the embedded sentence in (16 b.) is [+ stative] and thus the infinitival cannot be assigned the feature [+ action]. Under the proposed analysis, it should be assigned the feature [+ state], which is semantically incompatible with try, and this automatically accounts for the unacceptability of (16 b.), evidence that the proposed analysis is correct. The proposed analysis can also account for the fact that (17 a.) is acceptable and (17 b.) is not. Under the proposed analysis, the infinitival in (17 a.) should be assigned the feature [+ act] whereas that in (17 b.) should be assigned the feature [+ state] and this explains the acceptability of (17 a.) and the unacceptability of (17 b.) Thus it seems that our characterization of the sense expressed by a gerundial or an infinitival in terms of the features: [+ state], [+ action] and [+ event], is adequate. However, a careful analysis of the examples in (18) and (19) shows us that it is not. The unacceptability of (18 b.) is due to the presence of the verb like, which is [+ stative], in the embedded sentence. Such an explanation would also account for the unacceptability of (19 b.), where the em-

bedded sentence contains the stative verb appreciate. These examples show that the restriction is on the occurrence of stative verbs in the embedded sentence. In fact this is not the case, for consider the following data:

- (20) a. I intend to resign next week: [- stative]
b. *I intend to hate you: [+ stative]
c. I intend to understand what is going on by next week:³⁴ [+ stative]
- (21) a. John tried to grow tomatoes: [- stative]
b. John tried to grow a beard: [- stative]
c. *John tried to grow feathers on his chest:
[- stative]
- (22) a. John promised his wife to have a new suit:
[- stative]
b. *John promised his wife to have a heart attack:
[- stative]

A careful study of these examples shows us that the unacceptability of (20 b.), (21 c.) and (22 b.) cannot be accounted for in terms of a co-occurrence restriction between the main verb in the matrix sentence and the main verb in the embedded sentence. The only way to account for this phenomenon is to make use of the distinction that we made in a previous section (cf. 5.4.1.2.) between "controllable" and "non-controllable" activities. Applying such a distinction to these examples we could adduce the following argument: certain verbs in the matrix sentence cannot combine with complements that designate a non-controllable activity. This is the case in (20 b.),

(21 c.) and (22 b.). The infinitival in (22 b.), for instance, designates a non-controllable activity, whereas its counterpart in (22 a.) designates a controllable one. In other words, one can control having a new suit but certainly one cannot control having a heart attack.

It becomes obvious from the preceding examples that though the distinction between "stative" and "non-stative" verbs and adjectives helps in determining the sense of a gerundial or an infinitival, such a distinction should be supplemented by such notions as "controllable" and "non-controllable" activities. Such notions are determined by the various linguistic factors incorporated in the embedded sentence and not by the verb only. It is not clear at all how such notions can be incorporated in the theory, but if the speakers of the language make such a distinction in their speech, then the grammar should be able to handle this distinction. As a first approximation we suggest that the analysis of the features assigned to gerundials and infinitivals, which we suggested above, be modified in the following ways:³⁵

(i) The feature [+ act] requires that its complement S meet the following two conditions: (a) its main verb or predicative adjectival be marked [- stative], and (b) the activity it designates should be within the control of its deep structure subject NP. All the gerundials and infinitivals contained in the following examples satisfy these conditions:

- (23) a. It is difficult to cross this river
b. Rowing this boat tired me out

- (23) c. She condescended to mark the register
d. He was absorbed in reviewing books
- (24) a. She agreed to be cautious
b. Being cautious all the time gets on my nerves
c. They tried to be pleasant
d. She enjoys being rude to others

Such an analysis would automatically preclude the sentences in (25) and (26):

- (25) a.* He was absorbed in appreciating music
b.* She condescended to know the answer
- (26) a.* She agreed to be intelligent
b.* Being intelligent exhausts Ken
c.* Being ashamed gets on my nerves
d.* They tried to be fortunate

However, there is one point to be noted in this respect. Consider the following two examples:

- (27) a. Ken's sitting on her knees exhausted Jean
b.* Ken's lying on the floor exhausted Jean

The gerundial in (27 a.) is, under our analysis, the complement of the feature [+ act] and so is the gerundial in (27 b.). Notice in this respect that the verb exhaust and the feature [+ act] are semantically compatible, but whereas (27 a.) is acceptable (27 b.) is not. It seems to be the case that verbs like exhaust, tire, tire out, weaken, etc., when followed by an object NP require that the subject NP of the embedded S be co-referential with the direct object NP in the matrix S

in which these verbs occur: viz.

- (28) a. Crossing the river tired Jean out
b. *Jean's crossing the river tired Jean out

However, (27 a.) shows that it is a non-subject NP in the embedded S that is co-referential with the object NP in the matrix S. Thus it seems that verbs like tire and exhaust require that the subject or a non-subject ^{NP} in their sentential subject be identical to a non-subject NP in the matrix S: viz.

- (29) a. [X beat Y] exhausted $\begin{Bmatrix} Y \\ X \end{Bmatrix}$: cf.
b. Ken's beating her exhausted Jean
c. Beating Jean exhausted Ken

(ii) The feature [+ state] requires that its complement S meet one of the following two conditions: (a) its main verb or predicative adjectival should be marked [+ stative], (b) it should be a copular S incorporating a predicative nominal. Each of the gerundials and infinitivals contained in the following examples satisfies one of these two conditions:

- (30) a. She likes being intelligent
b. Being poor is a humiliation
c. It is frustrating to be a student
d. Not knowing such a simple answer is embarrassing
e. She would like to be a secretary

In this respect it seems convenient to draw a distinction between controllable and non-controllable states. The first could be exemplified by the sentences in (31) and the second

by the sentences in (32):

- (31) a. Being a student is frustrating
b. Being a teacher exhausts me
- (32) a. Being a drug-addict is humiliating
b. Being a { hypochondriac } is a tragedy for
 { schizophrenic } a young person

The distinction between controllable and non-controllable states has a syntactic justification, namely that gerundials and infinitivals which designate controllable states have the same co-occurrence privileges as those designating controllable activities. The following examples are self-explanatory:

- (33) a. She agreed to be a secretary
b. *She agreed to be a hypochondriac
- (34) a. Being a teacher exhausts Ken
b. *Being rich exhausts Ken³⁶

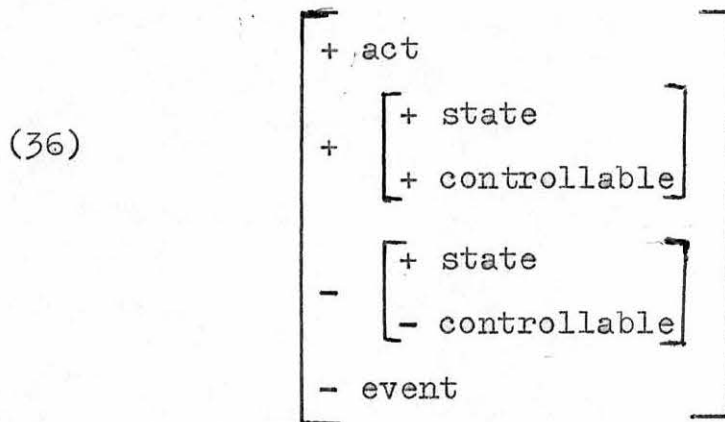
(iii) The feature [+ event] requires that its complement S should not satisfy any of the conditions specified for S's generated as complements to the feature [+ act] or to the feature [+ state].³⁷

If these remarks are valid, the grammar should be able to characterize the sense of any embedded S underlying a gerundial or an infinitival. The question that faces us now is: how does the grammar block the generation of unacceptable sentences like those in (25), (26), (33 b.) and (34 b.)? We

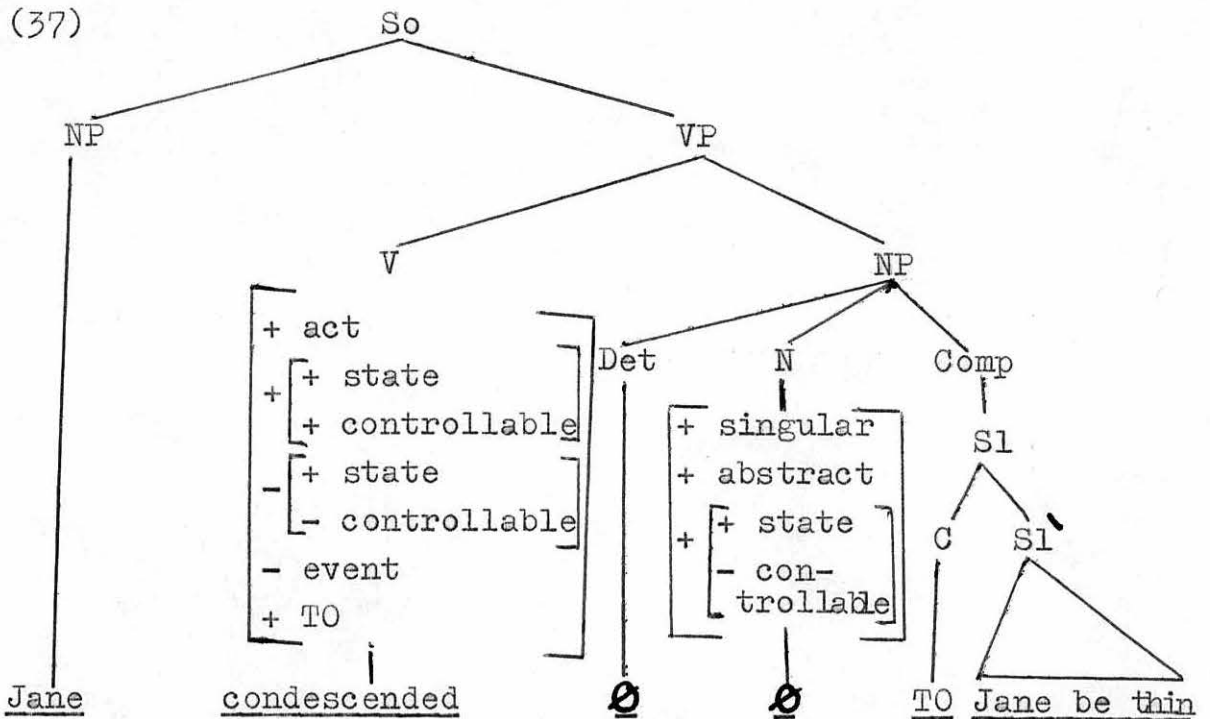
have argued that the oddity of these sentences is due to semantic and not syntactic reasons, in particular semantic incompatibility between the sense of the gerundial or the infinitival and the main verb in the matrix sentence. It seems in this respect that the main verb (also the predicative adjectival/nominal in copular sentences) should be positively marked for certain semantic features and negatively marked for others. For instance, the verb exhaust combines with a gerundial that designates an action or a controllable state but it does not combine with one that designates an event or a non-controllable state: viz.

- (35) a. Crossing the river exhausted Jane
- b. Being a teacher exhausted Jane
- c.* Being wise exhausted Jane
- d.* Winning the game exhausted Jane

Thus the verb exhaust will carry the following features:



Now let us see what happens if we have a deep structure configuration like, say:



Notice that the verb condescend is positively marked for an action infinitival and for an infinitival that designates a controllable state and since the embedded S is adjoined to the features [+ state], [- controllable], the derived S should be ungrammatical. In fact it is: viz.

(38) *.Jane condescended to be thin

One problem that our analysis encounters is that while it is possible to match the features that the main verb carries and those which the node N (that immediately precedes the node Comp) carries, it is not possible to prevent the generation of a complement that designates an activity or a state which does not accord with the features assigned to the node N. If such a complement is, however, generated, then all the grammar can do is to characterize the resultant derivation as ungrammatical. It is noteworthy in this respect that, as has been pointed out by Chomsky, not all phrase markers generated by the base will underlie actual sentences and thus qualify as deep structures.

Thus (37) is not the deep structure of any sentence. Chomsky further maintains that only those generalized phrase markers which passed through the transformational component with no transformations causing the derivation to block would qualify as deep structures, cf. Chomsky, 1965: 138-9. Applying this principle to (37) we notice that since the complementizer TO is generated in the deep structure, we cannot account for the unacceptability of (38) transformationally (there are no co-occurrence restrictions between the complementizer TO and the verb condescend (cf. she condescended to take the job). In fact, it has been convincingly argued by Perlmutter (1971: 1-17) that there are certain syntactic phenomena like the Like-Subject Constraint and the Unlike-Subject Constraint that cannot be accounted for transformationally, but which could be accounted for in terms of deep or surface structure constraints. It seems that the present case could be accounted for in terms of a deep structure constraint. Thus very tentatively we suggest that there is a deep structure constraint on the co-occurrence of certain embedded sentences and certain verbs, predicative adjectivals and predicative nominals. It is a constraint imposed upon the derivation of an embedded sentence by linguistic elements in a higher sentence, i.e. intra-sentential constraint. In the present theory there is no way of preventing elements in an embedded sentence from being generated by the phrase structure rules of the grammar. All that the grammar can do is to characterize certain generalized phrase markers as ill-formed. This is of course a serious shortcoming of the present theory, i.e. the Standard Theory, for it is possible for the phrase structure rules of the grammar to generate endless generalized phrase markers that do not qualify as deep structures. Finally, it should be borne in mind that all our proposals in this section are tentative and not conclusive.

In fact, it is not certain whether the proposals we have made could account for all instances of semantic incompatibility in the grammar of gerundials and infinitivals.

5.8. Complementarity of gerundials and infinitivals:

We have shown at the beginning of this chapter that gerundials and infinitivals share a good many grammatical functions. However, we have pointed out that some lexical items combine with a gerundial, some with infinitivals only, while others combine with a gerundial or an infinitival. It is the last set of lexical items that we are interested in here. The question to be decided in this respect is whether there are any differences between a gerundial and an infinitival that occur in the same context, and how to handle these differences, if any, in the grammar.

Traditional grammarians always noted, albeit in notional terms, that there are semantic discrepancies between a gerundial and an infinitival that occur in the same context. Jespersen (1940: 192), for instance, states that "with some verbs which allow both constructions a distinction in meaning is made, though it is sometimes difficult to see why one of the constructions is preferred". However, he adds that "the infinitive seems more appropriate than the gerund to denote the imaginative (unreal)". Kruisinga (1932: 166) maintains that "the difference of meaning between the constructions, though sometimes clear enough, is not easy to define even then, and very often the difference seems too small to be real in ordinary spoken English. And yet, there can be no doubt that

there is a difference". On the other hand, Curme (1931: 295) argues that "actual usage knows nothing of this distinction" though he concedes that "in certain categories the one or the other form is preferred". Paradoxically, the transformational literature, apart from a few remarks by Bresnan (1970: 302), ignores this issue completely.

However, we have indicated that gerundials and infinitivals do not seem to be in free variation, and that although in certain contexts either form is possible, the choice of the one rather than the other seems to be semantically determined. In what follows we will examine representative samples of the contexts in which either construction is possible and see whether or not the choice between the two is semantically significant. For convenience we will base our discussion on the formulas enumerated in the second section of this chapter (cf. 5.2.1.)

(i) First Formula (cf. 5.2.1.): e.g.

- (1) a. John's having refused the offer surprised us
b. For John to have refused the offer surprised us
- (2) a. Crossing the river exhausted John
b. To cross the river exhausted John
- (3) a. Being a secretary pleased Mary
b. To be a secretary pleased Mary

Let us first compare the gerundial in (1 a.) with the infinitival in (1 b.). Notice first that under the conditions of factivity (cf. 5.4. and 5.5. above) both types of complement are factive. This seems to suggest that (1 a.) and (1 b.) are synonymous and that they have an identical deep structure. In fact this is not the case. On careful scrutiny, we recognise

that there is some semantic discrepancy between the two. This discrepancy, it seems, is best viewed in terms of the speaker's (LS) interest. It seems that a person who chooses to use the gerundial in (1 a.) instead of the infinitival in (1 b.) is interested in, or possibly 'focussing' on, the event referred to by the whole gerundial and not the person initiating the event (i.e. John). In other words, the focus is the 'event' itself rather than the 'actor' initiating, participating in, or causing this event. On the other hand, it seems that a person who chooses to use the infinitival in (1 b.) instead of the gerundial in (1 a.) is focussing not on the 'event' but on the person initiating or causing the event.

The contrast between the gerundial in (2 a.) and the infinitival in (2 b.) cannot, it seems, be accounted for in terms of the speaker's interest or attitude. According to the analysis proposed in the preceding section the two types of complement are assigned the feature [+ action], but this does not necessarily entail that (2 a.) and (2 b.) are stylistic variants, for there seems to be some difference between the two. Notice first that the infinitival in (2 b.) refers to a single act of crossing the river or, to be more specific, it refers to a particular or specific act. The gerundial in (2 a.), on the other hand, does not necessarily refer to a single specific act. It rather refers to the act in general and it could be the case that John crossed the river more than once. In fact this statement is very strong, for one can think of contexts where the gerundial in (2 a.) may be employed to refer to a single specific act. For instance, in the following two examples:

(4) a. Crossing the river yesterday exhausted John

(4) b. To cross the river yesterday exhausted John

both the gerundial and the infinitival seem to refer to a particular act. It is not clear at all whether there is any semantic contrast between these two sentences. Nonetheless one feels that there is a difference, though slight, in focus. It seems that the focus in (4 a.) is on the act of crossing the river itself, whereas in (4 b.) it is on the fact that John was exhausted. Such a distinction might be forced for some speakers do not perceive of this distinction at all.

The gerundial in (3 a.) seems to refer to a general state, whereas the infinitival in (3 b.) seems to refer to the initiation of a state. Indeed (3 b.) might be paraphrased by:

(5) It pleased Mary to become a secretary

This contrast becomes more clear in the following two examples:

(6) a. Being a secretary will please Mary

b. To be a secretary will please Mary

where the gerundial in (6 a.) refers to something actual whereas the infinitival in (6 b.) refers to something projected or hypothetical.

(ii) Second Formula (cf. 5.2.1.): e.g.

(7) a. His having refused the offer is odd

b. For him to have refused the offer is odd

(8) a. Playing with explosives is dangerous

b. To play with explosives is dangerous

(9) a. Taking the exam is necessary

b. To take the exam is necessary

The gerundial in (7 a.) and the infinitival in (7 b.) express a factive sense, but there is still some difference between (7 a.) and (7 b.). This difference, it seems, is best accounted for in terms of the speaker's interest or attitude, for whereas in (7 a.) the focus seems to be on the event as such, in (7 b.) the focus seems to be on the person initiating the event. On the other hand, the contrast between (8 a.) and (8 b.) though very slight indeed, is better viewed in terms of general versus specific acts. The gerundial in (8 a.) refers to the act of playing with explosives in general, whereas the infinitival in (8 b.) may be interpreted as referring to a specific occasion where the subject of the infinitival is interpreted as being the addressee (LT) rather than the generic pronoun one. In fact in certain contexts (8 b.) might be paraphrased by:

(10) For you to play with explosives is dangerous

Admittedly, some speakers do not see this difference. Notice further that the gerundial in (8 a.) may be employed to refer to a specific incident and that the infinitival in (8 b.) might be employed to refer to such actions in general.

The contrast between (9 a.) and (9 b.) could be compared to the contrast between (4 a.) and (4 b.) above. In other words, in (9 a.) the focus seems to be on the action itself, whereas in (9 b.) it seems to be on the necessity of the action. Another type of contrast shows up in interrogative sentences:

(11) a. Was taking the exam necessary?

b. Was it necessary to take the exam?

where (11 a.) but not (11 b.) presupposes that "one did take the exam".

(iii) Third Formula (cf. 5.2.1.): e.g.

- (12) a. His being a doctor is an advantage
b. For him to be a doctor is an advantage

- (13) a. Playing golf in the rain is fun
b. To play golf in the rain is fun

The gerundial in (12 a.) and the infinitival in (12 b.) contrast in two ways. First, they differ with regard to focus. In this respect the contrast between these two sentences is similar to the contrast between (7 a.) and (7 b.): i.e. the focus in (12 a.) is on the 'state' designated by the gerundial, whereas the focus in (12 b.) seems to be on the person initiating the 'state'. Secondly, whereas the gerundial in (12 a.) is likely to be interpreted in a factive sense, the infinitival in (12 b.) is likely to be interpreted in a hypothetical sense. This type of contrast could be viewed as a contrast between two aspects of a 'state', namely 'reification' versus 'hypothesis' or 'potentiality' (cf. Bolinger, 1968: 124).

It has been pointed out by Bolinger (1968: 124) that a normal situation for (13 a.) is an observation made by someone actually playing golf in the rain, whereas (13 b.) suits an observation made in general terms. While this remark might be true of these two sentences, it does not seem, however, to be true of the following two sentences:

- (14) a. Playing golf in the rain was fun
b. To play golf in the rain was fun

(iv) Fourth Formula (cf. 5.2.1.): e.g.

- (15) a. I don't like the boy's coming here so often

- (15) b. I don't like the boy to come here so often
- (16) a. I like his being nice to you
b. I like him to be nice to you
- (17) a. I don't like disturbing him
b. I don't like to disturb him
- (18) a. She prefers watching television
b. She prefers to watch television

Object gerundials and infinitivals that occur in the same context may in certain circumstances show a considerable contrast of meaning. Consider the following two examples:

- (19) a. Will you remember putting it on the shelf?
b. Will you remember to put it on the shelf?

Sentence (19 a.) may, according to Bright (1970: 41), be paraphrased by:

- (20) a. Aren't you likely to forget where you put it?

whereas (19 b.), according to him, may be paraphrased by:

- (20) b. Please put it on the shelf later on

The contrast between (19 a.) and (19 b.), it seems, is best viewed as one between something actually done - i.e. (19 a.) - and something that is projected - i.e. (19 b.). Other pairs of examples that show a considerable semantic contrast are the following:

- (21) a. I forgot leaving the money in the drawer
b. I forgot to leave the money in the drawer
- (22) a. She tried locking the door
b. She tried to lock the door

The contrast between (21 a.) and (21 b.) is quite obvious and so is the contrast between (22 a.) and (22 b.). Let us now con-

sider the examples in (15), (16), (17) and (18).

The contrast between (15 a.) and (15 b.) seems to be between something actually done - in (15 a.) - and something hypothetical or projected - in (15 b.). This analysis can also account for the contrast between (16 a.) and (16 b.): the gerundial in (16 a.) refers to actual behaviour, whereas the infinitival in (16 b.) expresses a wish (cf. Bolinger, 1968: 123). Gerundials and infinitivals instanced in (17) and (18) have been discussed by various traditional grammarians, and there seems to be general agreement amongst these grammarians that whereas the type of gerundial instanced in (17 a.) and (18 a.) occurs in statements of general validity or habit, the type of infinitival instanced in (17 b.) and (18 b.) expresses reference to a particular occasion.³⁸ Other grammarians, notably Jespersen (1940: 193) and Schibsbye (1969: 28), point to the possible variation in the "logical subject of gerund or infinitive" as illustrated by the following two examples:

- (23) a. I hate to lie (I hate that I lie)
b. I hate lying (I hate that people lie)

Significantly, this example is the same and only one in both grammars. In the case of Hornby (1966: 49) and Jespersen (1940: 193) refinement is added to the effect that if the main verb in the matrix sentence is preceded by should or would, only the infinitival may be used. At this point we may note that a gerundial may follow a verb that is preceded by would: viz.

- (24) Would you like flying home?

Secondly, the ambiguity of the subject of the embedded sentence in (23 b.) arises from the fact that the underlined construction

is ambiguous as between a gerundial and an action nominal.

The following sentence, for instance:

(25) I hate lying to you

is not ambiguous, for the subject of the gerundial is understood to be coreferential with the subject of the matrix sentence (i.e. I). Thirdly, it has been pointed out by Bladon (1968: 7) that the distinction between gerundials and infinitivals in terms of 'general statement' and 'particular occasion' may account for cases such as:

- (26) a. But I didn't like to tell her the details (particular)
b. I don't like being away from home (general)

but is worthless when faced with:

- (27) a. Men never like to be thought cowards (particular??)
b. I didn't like eating my first French meal (general??)

In discussing gerundials and infinitivals that co-occur with verbs like: prefer, love, hate, like and dislike, Bladon (1968) first excludes the verb dislike from this group since, he argues, it cannot co-occur with an infinitival: cf.

(28)* I dislike to eat this kind of fish

He also argues that prefer does not fit into this group, for while we attest (29) we are unlikely to attest (30): viz.

(29) He will prefer to learn languages

(30)*He will like to learn languages

After this he tries to argue that the choice between the gerundial or the infinitival after the verbs like, love and hate is determined semantically and possibly syntactically. On the whole he seems to suggest that gerundials express 'enjoyment' either 'actual' or 'conditional', whereas infinitivals charact-

eristically express 'desire' either 'fulfilled' or 'unfulfilled'. He represents notions such as 'enjoyment' and 'desire' as features, but it is not obvious at all whether these features are assigned to the matrix verb or to the embedded sentence as a whole. His analysis is unfortunately limited to subjectless gerundials and infinitivals and it is very doubtful whether it could be extended to account for the contrast between the type of gerundial instanced in (15 a.) and the type of infinitival instanced in (15 b.).

It seems that there is some truth in what the traditional grammarians have said, though it is not easy to draw generalizations about object gerundials and infinitivals that occur in the same context. The contrast between, say, the following two examples:

- (31) a. I didn't like staying with them
- b. I didn't like to stay with them

seems to be quite obvious, for whereas (31 a.) implies:

(32) I stayed with them

(31 b.) does not.

(v) Fifth Formula (cf. 5.2.1.): e.g.

- (33) a. They forced him into signing the cheque
- b. They forced him to sign the cheque
- (34) a. We reminded John of visiting his mother
- b. We reminded John to visit his mother
- (35) a. They coaxed Mary into writing to Ken
- b. They coaxed Mary to write to Ken

There is a clear semantic contrast between the gerundial in

(34 a.) and the infinitival in (34 b.) which could be accounted for in terms of something actually done (in 34 a.) and something projected (in 34 b.). However, there does not seem to be a clear semantic contrast between the (a) and the (b) sentences in (33) and (35). Nonetheless there is a slight difference between (33 a.) and (33 b.) which brings the action more sharply in focus in the case of the gerundial. This seems to be also the case with the two sentences in (35).

(vi) Sixth Formula (cf. 5.2.1.): e.g.

(36) a. He is keen on playing tennis

b. He is keen to play tennis

(37) a. She was afraid of meeting him

b. She was afraid to meet him

Both the gerundial in (36 a.) and (37 a.) express a general statement, whereas the infinitivals in (36 a.) and (36 b.) refer to a particular occasion. However, it is possible to think of contexts in which a gerundial of the type instanced in (36 a.) and (37 a.) may be employed to refer to a particular occasion.

It should have been noted from the examples cited in this section that the contrast between gerundials and infinitivals that occur in the same context is not always easy to establish. Secondly, such a contrast seems to vary from one context to another, depending partly on the tense of the main verb in the matrix sentence, partly on the presence of modal auxiliaries in the matrix sentence, and partly on the type of subject that the embedded sentence has. Thirdly, it would not

seem possible to state any generalizations with precision, especially when the contrast is viewed in terms of the focus of the main sentence. However, for any theory to be descriptively and explanatorily adequate, these contrasts should be stated and incorporated in the theory. Very tentatively we might state the contrast between gerundials and infinitivals in terms of the following criteria:

A. Characteristic vs. non-characteristic: This type of contrast would account for distinguishing between the gerundial and the infinitival contained in the following two examples:

- (38) a. Crossing this river is difficult
b. It is difficult to cross this river

Notice that (38 a.) indicates that the nature of the river, possibly its width, its depth, etc. makes the crossing difficult. This is what is meant by the term "characteristic". On the other hand, (38 b.) indicates that the existing circumstances makes the crossing difficult, and this is what is meant by the term "non-characteristic".

B. Actual vs. hypothetical: This type of contrast would account for the following pair of sentences:

- (39) a. I like his being nice to you
b. I like him to be nice to you
(40) a. John's losing the race is annoying
b. It is annoying for John to lose the race

where the two gerundials in (39 a.) and (40 a.) refer to actual events, whereas the infinitivals in (39 b.) and (40 b.) refer to a hypothesis or a potentiality.

C. Actual + focus vs. actual-focus: This would account for the contrast between the following two sentences:

- (41) a. His leaving so soon surprised us
b. It surprised us for him to leave so soon

Admittedly, these descriptive labels are not adequate to characterize all the types of contrast that gerundials and infinitivals which occur in the same context exhibit, but it seems that such labels are capable of accounting for many of the contexts where gerundials and infinitivals are both possible. The incorporation of these remarks in the grammar could be done by assigning certain features to the complementizer preceding the embedded sentence. These features are semantic and they have an interpretive function. In a theory that introduces complementizers transformationally such a contrast between gerundials and infinitivals would be difficult to handle even if we assumed that there were surface structure semantic rules. The difficulty resides in the fact that transformations operate not on sentences but on abstract phrase markers, and, as has been pointed out by Partee (1971: 5), it is not obvious that we do have any "direct semantic intuitions about these abstract structures", in particular any notion of synonymy between them.

Before closing this section, let us see whether there are any semantic differences between gerundials with a genitivized subject and those with a non-genitivized one. Consider the gerundials contained in the following two examples:

- (42) a. I don't like his coming
b. I don't like him coming

Most traditional grammarians have treated the difference between the two constructions underlined in (42) as one between

the "gerund" (i.e. noun) and the "present participle" (i.e. an adjective), the former being preceded by the genitive form of a noun or pronoun, the latter by the unmarked form of a noun or pronoun. However, we have shown in Chapter III - cf. 3.5. - that, apart from the morphological difference, the two constructions belong to the same syntactic category and that their behaviour under transformations is identical. On semantic grounds, it is not clear whether or not the two constructions are to be interpreted as synonymous.

Under most analyses, the genitive marker 's has been assumed to be semantically insignificant. Rosenbaum, (1967-a), Robin Lakoff (1968) and Wigzell (1969) treat the distinction as a purely surface structure phenomenon by introducing the complementizer 's-ing transformationally and by allowing the genitive marker 's to be deleted by an optional deletion rule, namely the Complementizer Deletion transformation. It should be pointed out, however, that, under all of these analyses, complementizers have been assumed to be semantically empty syntactic markers, so the question of whether the deletion of the genitive marker 's is semantically significant has not arisen. In fact neither Rosenbaum nor Robin Lakoff has given this issue any thought since they assumed complementizers to be semantically insignificant. On the other hand, although it is Wigzell's contention that a complementizer is "a semantically empty structural marker" (cf. Wigzell, 1969: 1), he arrives at the conclusion that "There seems to me to be a subtle difference in meaning between say:

(43) I don't mind his going
and:

(44) I don't mind him going

the former suggesting that he does, in fact, go (or is going), the latter suggesting that the going is a possibility merely" - Wigzell, 1969: 52-5. Obviously Wigzell is contradicting himself, for he explicitly states that "transformational rules contribute nothing to the semantic interpretation assigned to the deep structures they operate on" - cf. Wigzell, 1969: 1. However, not many speakers can conceive of the distinction that Wigzell draws between (45) and (44), indeed some speakers feel that such a distinction is forced. After all, we have seen in 3.5. that for some speakers the two types of gerundial instanced in (45) and (44) are not in free variation in the sense that they tend to use one form but not the other. Indeed some speakers do not accept the genitivized form at all and some speakers do not accept the non-genitivized form. Admittedly, there are speakers who admit of the two forms, although they would prefer one to the other.

Returning to our main theme, notice that if there is any difference between the type of gerundial instanced in (45) and that instanced in (44), then such a difference is to be ascribed to case marking. Obviously case markers are a surface structure property, for if we were to assign case markers to deep structure constituents, then we should expect a sentence like:

(45) He kissed her

to yield under Passivization:

(46)*Her was kissed by him

In fact it was such considerations that led us to treat the genitive marker as a surface structure phenomenon (cf. 4.6.3.)

and not as part of the gerundial complementizer. In fact it has been pointed out by Lyons (1966, p.218) that "case" in the languages in which the category is to be found, is not present in deep structure at all, but is merely the inflectional realization of particular syntactic relationships. The syntactic relationship in question, Lyons argues, may in fact be defined in the surface structure, as when the surface subject of a sentence has appeared as the result of the application of the Passive transformation, or when the genitive marker is introduced as an accompaniment to a nominalization transformation. In Chomsky, 1965 (cf. p.221, footnote 35) case forms are assigned to English pronouns and nouns late in the grammar. The question to be decided is whether case assignment is semantically significant or not. In fact this is not any easy question to answer, in particular in such cases as the one under discussion. First, the genitive marker in (47) doesn't exist in deep structure and thus there is no direct relationship between the genitivized and the unmarked forms. Secondly, it has been pointed out by Partee (1971: 5), we do not have any direct semantic intuitions about abstract phrase markers that incorporate the unmarked form of the noun or pronoun. However, if we insist that there is a semantic contrast between the type of gerundial instanced in (42 a.) and that instanced in (42 b.), it would not be impossible to account for such a contrast in the grammar. Such a contrast could be accounted for in terms of surface structure semantic interpretation rules of the type proposed by Chomsky (1971).

As mentioned above not many speakers see any semantic contrast between sentences of the type instanced in (42 a.) and

those like (42 b.). Nonetheless, though the two sentences in (42) express identical propositions, they are slightly different. This difference is best viewed in terms of the interest of the speaker (LS), in particular whether he is concerned with a person engaged in an activity as in (42 b.) or with the activity itself as in (42 a.). However, this is still a confused matter and it is not clear at all whether such a suggestion could be satisfactorily incorporated into the theory. After all, as has been pointed out by Palmer (forthcoming) there are examples in which the distinction between the type of gerundial instanced in (46 a.) and the one instanced in (46 b.) is not clear enough.

Footnotes to Chapter V

1. Amongst the traditional grammarians that discussed this question are: Jespersen (1940: 86-341); Curme (1931: 448-96); Kruisinga (1932: 251-78); Poutsma (1923: 142-4).

2. Some of the verbs that occur in this formula can be used both intransitively and transitively. Amongst these are verbs like: begin, commence, continue, start, etc. It has been argued by Perlmutter (1970), for instance, that the verb begin can be used both transitively and intransitively. First, begin is intransitive, with a sentential subject. This structure will give us, Perlmutter maintains, sentences such as the following:

- (i) a. There began to be a commotion
- b. It began to rain

In the second structure begin is generated in the base as a transitive verb with a sentential object. This structure is intended to account for the following sentences:

- (ii) a. Zeke began to work
- b. I tried to begin to work

Perlmutter cites various arguments to support his analysis, but his analysis has been subsequently criticized by Newmeyer (1969), Fischer and Marshall (1969) and F.R. Palmer (forthcoming). However, it seems convenient to retain Perlmutter's analysis with respect to some but not all of the verbs of temporal aspect (e.g. begin, start, continue, but not cease, or quit).

3. Lakoff (1965: II-I and V-A) accounts for the ungrammaticality of sentences like (12 b.), (13 b.), (14 b.) and (15 b.) transformationally in the lexicon. He does this through postulating the notions of "absolute exceptions" and "simple exceptions" to transformations. Perlmutter (1971: 4-9) has shown evidence that Lakoff's analysis is wrong and has argued for the necessity of setting some deep structure constraints (e.g. Like-Subject constraint and Unlike-Subject constraint) to account for the ungrammaticality of sentences like (12 b.), (13 b.), (14 b.), and (15 b.). However, two or three points need to be mentioned here with regard to Perlmutter's analysis. First, his ordering of transformations does not seem to accord with the findings of recent research in the theory of NP complementation (we will return to discuss this issue in due course). Secondly, there are counterexamples to the Like-Subject constraint. Consider, for instance, the following example, which, according to Perlmutter, should be ungrammatical:

- (i) I intend for you to go

Newmeyer (1969: 199) cites the following sentence:

- (ii) I tried to be arrested

and Fischer and Marshall (1969: 7) cite the following two sentences:

- (iii) I condescended to be beaten by the mob
- (iv) I tried to be beaten by the mob

as counterexamples to Perlmutter's Like-Subject constraint. Thirdly, one can cite counterexamples to Perlmutter's Unlike-Subject constraint: cf.

(v) I screamed that I would go

4. To some speakers sentence (9) is paraphraseable by:

(i) It has been assumed to be a fact that John is in London
However, we return to discuss this issue in section 5.5. below.

5. Recent research has shown that not all transformations are meaning-preserving. We touched upon this topic in Chapter IV while discussing Subject-Raising and Object-Raising - cf. 4.5.5. and 4.6.2. However, it seems reasonable to argue that "most transformational rules preserve meaning; those of such-and-such a form, however, do not, and their effect on meaning is predictable in such-and-such a way from their form": cf. Partee, 1971: 8. On the other hand, following Chomsky (1971), we might argue that all meaning connected with the basic grammatical relations between major lexical categories is determined at the deep structure level, but that connected with reference and with logical relations such as quantification, negation, topic, comment, and presupposition are determined at the surface level by means of surface structure semantic interpretation rules: cf. Chomsky, 1971. Partee proposes that "all those parts of meaning that have to do with truth-value (in all possible worlds) are determined at the deep structure level and preserved by transformational rules; what can change in the course of a transformational derivation are just those subtler aspects of 'meaning' which are suggested by terms such as 'topicalization', 'focus/presupposition', or other equally ill-understood notions": cf. Partee, 1971: 9. However, in accordance with Chomsky (1965), it is our contention that "only recoverable deletions are permitted": cf. Chomsky, 1965: 138.

6. The term "factive" is used by many linguists to characterize the sense expressed by certain sentential complements. For this terminology see: Kiparsky and Kiparsky, 1970; Lees, 1963; Wigzell, 1969; Karttunen, 1970; Wilkinson, 1970; Fraser, 1970; Newmeyer, 1970.

7. Apparently the use of the NP fact in declarative sentences of the type instanced in (28) is meant to assert something and thereby the truth of it. Most probably it is semantically empty.

8. The classification of propositions and the terminology here are borrowed from Hughes and Londey (1965: 4-5).

9. For a detailed discussion of the notion of "presupposition" see: Lakoff, 1971-b; Lakoff, 1971-c; Fillmore, 1971-a; Fillmore, 1971-b; Garner, 1971; Keenan, 1971; Horn, 1969; Morgan, 1969; Langendoen, 1971; Langendoen and Savin, 1971.

10. In fact there are various problems associated with the notion of "presupposition". First, a speaker need not believe the presupposition of what he is saying, if he is speaking with an intent to deceive, or speaking in jest. Secondly, lies introduce another problem, but even then it seems that the speaker must at least represent himself as having some grounds for saying what he does. Thirdly, it has been argued by Austin that "often there are things you cannot state - have no right

to state - or not in a position to state. You cannot now state how many people there are in the next room, if you say: there are fifty people in the next room, I can only regard you as guessing or conjecturing": cf. Austin, 1962: 137. Fourthly, it might be the case that the speaker "does not understand very well what he is saying, even if he believes it. That is, one can believe what one is saying without realizing that what one has said has certain presuppositions": cf. Keenan, 1971: 51. Fifthly, it has been pointed out by Keenan that there are many instances in which one accepts something for the "sake of argument", to show that it is false. This way of reasoning, Keenan argues, occurs frequently in natural languages (cf. Keenan, 1971: 51).

11. It could be the case that the gerundials in (6) are instances of "direct quote", where the LS is reacting, possibly, to a false statement. Imagine the following situation, which gives rise to the following conversation. First speaker (to the audience) says:

(i) I am proud of having been a lecturer

If there is a person in the audience who does not believe what has been said by the speaker, he might say:

(ii) But your having been a lecturer is a

{	myth
	big lie

Alternatively, it has been suggested to me, that a sentence like (6 b.) could possibly be paraphrased by:

(iii) It is quite possible that it is a fact that he has been to Bangor

This type of paraphrase would also apply to (6 c.) and possibly to (6 d.) but not to (6 a.). However, apart from the artificiality of such an analysis, it would not be easy to handle with any degree of accuracy, particularly in the syntactic component of the grammar.

12. However, we do not rule out the possibility that (13 a.) could be paraphrased by:

(i) I would regret the fact that I had lost the race if it were a fact that I had lost the race

and (13 b.) by:

(ii) Were it a fact that John had lost his job, then it would be annoying for John

We return to discuss this type of analysis below.

13. Sentence (17 b.) is possibly ambiguous for the gerundial may be interpreted in a factive sense.

14. Some speakers do not understand (24 b.) as a paraphrase of (23 b.).

15. I use the term "factive verb" or "factive adjective" in the sense employed by: Klima, 1964; Kiparsky and Kiparsky, 1970; Karttunen, 1970; Wilkinson, 1970.

16. Sentence (45 a.) is ambiguous, for it can refer to a specific event or to a habitual or iterative action. It is in the first sense that we are using it here.
17. It could be the case that on this reading of (45 b.) the speaker is not hypothesizing so much as assuming that something (i.e. John's failing the exam) is true before it actually is.
18. In particular whether the event referred to by the gerundial has taken place or not.
19. Notice that instead of the gerundials in (62 b.) and (62 c.) we could have a that-clause preceded by the head-noun fact: cf.
- (i) I would regret the fact that I met such a stupid person
 - (ii) You might regret the fact that you did this
- However, it does not seem to be the case that (i) is a paraphrase of (62 b.) and that (ii) is a paraphrase of (62 c.).
20. The Kiparskys maintain that infinitivals cannot be employed in a factive sense. In this section we argue that in certain contexts, it is possible for infinitivals to express a factive sense.
21. There are contexts in which gerundials that are understood to express a factive sense cannot be overtly preceded by the head-noun fact. The gerundial in the following sentence, for instance, is semantically factive but it cannot be preceded by the head-noun fact: cf.
- (i) a. I enjoyed playing your piano
 - b. *I enjoyed the fact of playing your piano
- We return to this matter below.
22. There might be subtle semantic differences between factive gerundials and factive infinitivals that occur in the same context: viz.
- (i) His having refused the offer surprised us
 - (ii) For him to have refused the offer surprised us
- We will discuss this issue in section 5.8. below.
23. Notice in passing that the Kiparskys consider sentences like (3 c.) ungrammatical for it is their contention that gerundials cannot combine with non-factive predicates like possible. However, to many speakers this sentence is perfectly acceptable.
24. To some speakers the gerundial in (4 b.) is factive. Most probably it is ambiguous between a factive and a non-factive sense.
25. To some speakers the following sentence is perfectly acceptable:
- (i) I hate Lucille to sing Dixie
- If this is so, then our claim that the infinitival in (7 b.) does not allow Subject-Raising is false.
26. The two sentences in (13 c.) and (14 c.) are borrowed from: Hudson, 1971: 322, 216. Some speakers, however, do not find these two sentences acceptable.

27. To some speakers the following sentence is acceptable:

(i) I resent for you to say that

However, compare this sentence to:

(ii)*I comprehend for you to say that

It is Hornby's contention, and I think that he is right, that the verb resent can take a gerundial but not an infinitival as its object. (cf. Hornby, et al., 1965: 855).

28. In fairness to the Kiparskys, sentence (25 b.) would, under their analysis, be ungrammatical. However, to many native speakers this sentence is perfectly acceptable. Our argument in this paragraph does not crucially depend on its acceptability.

29. Of course Relativization applies to the embedded sentence and not to a particular NP in this sentence. However, Relativization affects a constituent NP in this sentence, in the sense that such an NP moves out of the embedded sentence.

30. It should be pointed out that we are using the term "derived nominal" in a rather informal way to refer to nouns that have a corresponding verbal or adjectival counterpart. This is not to say, however, that we believe that these nominals originate in deep structure as verbs or adjectives. It is Chomsky's contention that "derived nominals" do not originate in deep structure as either verbs or adjectives but as nouns proper. For a detailed discussion see: Chomsky, 1970-a. Notice further that the nouns in (32) have corresponding adjectives (e.g. accidental, intelligent) and that the noun mess in (32 a.) is likely to be marked [+ concrete].

31. These features reflect, of course, the semantic type of the associated verb. For instance, if the associated verb is [+ stative], then the nominal receives this feature. On the other hand, if the associated verb is [- stative], then the nominal is assigned either the feature [+ action] or [+ event], depending on whether the activity designated is [+ controllable] or [- controllable]. If it is [+ controllable], the nominal is [+ action], and if it is [- controllable], the nominal is [+ event].

32. This is the position taken by Chomsky (1970-a). See also 4.2.3.

33. Under this tentative proposal the following sentence:

(i) Arriving on time exhausted us

should be unacceptable, which it is not. We return to discuss this type of sentence below.

34. This sentence is borrowed from Newmeyer (1969: 202), who briefly mentions the distinction between "controllable" and "non-controllable" activities. It should be noted, however, that the present author has independently arrived at this conclusion. Returning to sentence (20 c.), one could argue that the acceptability of this sentence might be due to the fact that the verb understand may be interpreted as non-stative meaning

get to understand.

35. It should be borne in mind that the features [+ act], [+ event] and [+ state] are generated in deep structure and not assigned to embedded sentences in the surface structure. In other words, each S underlying a gerund or an infinitival will share the constituency of the dominating category with an N that is realized by features.

36. The following sentence, which is acceptable to some speakers, constitutes a counter-example to our analysis:

(i) Being ill exhausts me

37. It should be borne in mind that the feature [+ event] requires that the activity designated by its complement should be non-controllable.

38. See Zandvoort, 1969: 28-9; Hornby, 1966: 49; Schibsby, 1969: 27; Scheurweghs, 1958: 205.

CHAPTER VI

SUMMARY

VI. Summary

This thesis is an attempt to provide the theory of NP complementation in general, and the grammar of gerundials and infinitivals in particular, with more adequate notions of syntactico-semantic constraints, constraints that have hitherto been neglected or imperfectly understood. In addition to defining the various syntactic and semantic constraints operative on structures underlying gerundials and infinitivals, a generative machinery has been proposed to account for the form and meaning of the two types of nominal, and it is hoped that this machinery could be extended to account for other instances of NP complements, both headed and headless.

In what follows we will endeavour to briefly enumerate and define the various phrase structure rules and transformational rules that we have shown to be relevant to the grammar of gerundials and infinitivals.

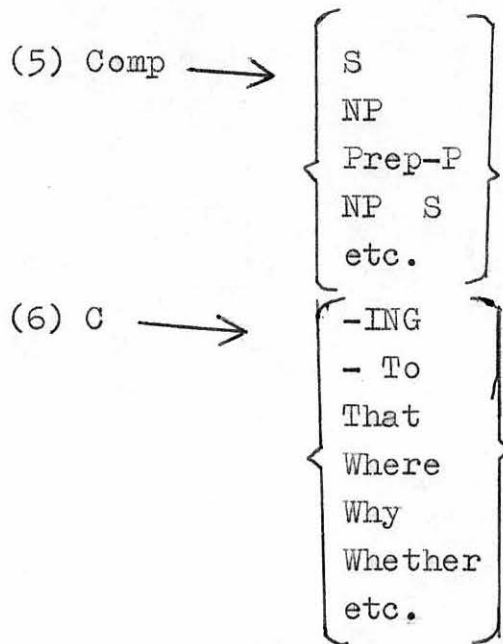
6.1. Phrase structure rules:

Operating in conjunction with the following three basic phrase structure rules:

- (1) $S \longrightarrow C \sim \bar{S}$
- (2) $\bar{S} \longrightarrow NP \sim VP$
- (3) $VP \longrightarrow V \sim NP^1$

the three phrase structure rules that are central to the complement system under discussion can be stated as follows:

- (4) $NP \longrightarrow (Det) \sim N \sim Comp$



These three phrase structure rules allow for the generation of all surface structure nominal constructions, both complex and non-complex. For instance, all the following nominals are capable of being generated by these phrase structure rules:

- (7) The boy, the Nile, Bangor, rumours
- (8) John's deeds, the author of the book, the prospects for peace, his attitude of defiance
- (9) That he came late, how he fooled them, his refusing the offer, for her to have won the game, where he met her
- (10) The possibility that he might resign, the fact of his coming late, the chances for him to leave, the question whether he will come

The justification for postulating each of the phrase structure rules in (1), (4), (5) and (6) was given in Chapter IV (cf. 4.7.) and there would be no point in repeating what we said there. Notice in passing that phrase structure rule (4) could generate both headed and headless gerundials and infinitivals. In the generation of headless gerundials and infiniti-

vals N is realized as features, that is it is phonetically realized as zero, whereas in the generation of headed gerundials and infinitivals it has a phonetic realization (cf. 5.7.).

In addition to the above-mentioned phrase structure rules, the grammar of noun phrase complementation should incorporate in the lexicon the subcategorizational information relevant to both the N that appears in phrase structure rule (4) and the main verb in the matrix sentence containing a noun phrase complement. This could be done straightforwardly by means of a notation similar to that proposed by Chomsky (1965: 94, 100). Since we have chosen to generate complementizers in deep structure, then these complementizers should subcategorize both nouns and verbs. Thus, for instance, the verb know in:

(11) I know that she is a linguist

will appear in the lexicon with the following information:

(12) know, [+ V, + _____ NP, + _____ that \sim S]

Similarly, the verb condescend in:

(13) She condescended to take the job

will appear in the lexicon with the following information:

(14) condescend, [+ V, + _____ ^{NP} NP, + _____ To \sim S]

The verb recollect in:

(15) She recollects meeting such a person

will have the following information:

(16) recollect, [+ V, + _____ NP, + _____ ING \sim S]

Nouns that are followed by a complement would appear in the lexicon with information as to which complementizer they could

co-occur with. Thus the lexicon might contain the following items (cf. Chomsky, 1965: 100):

- (17) a. action, [+ N, + Det _____, + _____ of \sim ING \sim S]²
 b. eagerness, [+ N, + Det _____, + _____ To \sim S]
 c. question, [+ N, + Det _____, + _____ Whether \sim S]

Finally each of the complementizers generated by the phrase structure rule (6) will carry certain semantic features. In this respect we have very tentatively suggested (cf. 5.8.) that the complementizer -ING should carry the following features:

- (18) [+ characteristic
 + actual
 + focus]

In contradistinction to the -ING complementizer, the TO complementizer, we have suggested, should carry the following features:

- (19) [- characteristic
 - actual
 - focus]

6.2. Transformations:

The phrase structure rules in the preceding section suffice to generate the structures underlying noun phrase complements. The transformational rules necessary to the generation of surface structure gerundials and infinitivals are defined in this section. In this respect it is worth noting that the transformations that apply to both gerundials and infinitivals are in the minority indeed, there being various

transformations that apply to infinitivals but not to gerundials. The transformations that operate on embedded sentences underlying noun phrase complements have been extensively discussed in the literature,³ and there would be no point in presenting a detailed study of these transformations here. However, in what follows we will informally define these transformations together with the contexts in which they may or may not apply.

6.2.1. Local transformations:

The term local transformation is used in Chomsky's (1965: 99, 215) sense to refer to a transformation that affects only a substring dominated by a single category symbol. In this respect we can distinguish three local transformations operating on underlying sentences incorporating the complementizer TO or ING: (i) For-Insertion, (ii) 's-Insertion, and (iii) Tense Realization. In what follows we will briefly define each of these transformations.

(i) For-Insertion: This rule applies to an underlying S that incorporates the complementizer TO to insert the morpheme for immediately before its subject NP: cf.

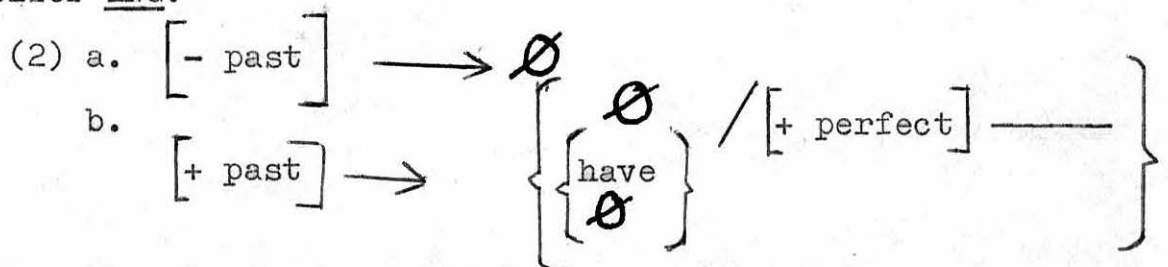
- (1) a. [John to have refused the offer] is surprising \implies
b. For John to have refused the offer is surprising

This rule is obligatory, but there are contexts in which it cannot apply. First, this rule does not apply if the subject of the infinitival is deleted. Secondly, it does not apply if the subject of the infinitival has been raised to the higher S through the application of Subject-Raising. Obviously this is a very late transformation that has to be ordered after the

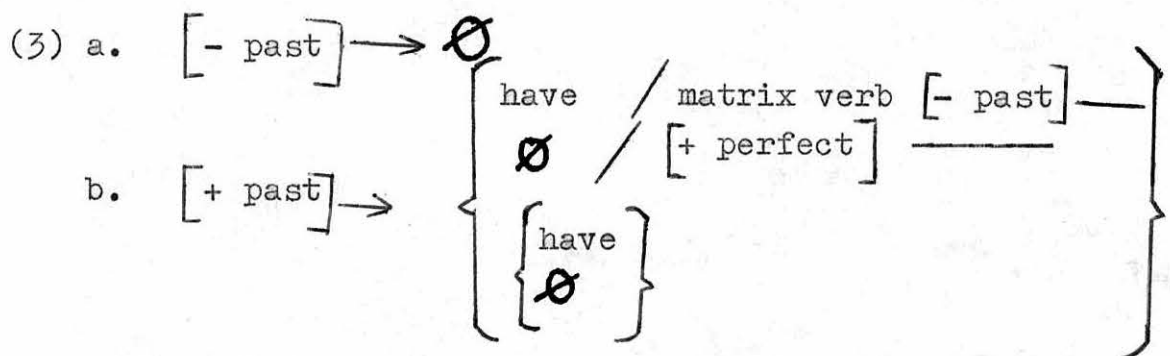
following transformations: Subject-Raising, Equi-NP-Deletion, and Passive.

(ii) 's-Insertion: This rule operates on an underlying S that incorporates the complementizer ING to attach the genitive marker 's to its subject NP on condition that the subject may appear in the genitivized form (cf. 3.5.2). The application of this rule is optional for some dialects and obligatory for others. However, its application is blocked if the subject NP is of the type that does not allow genitivization. Like For-Insertion, 's-Insertion is a very late rule that applies after both Equi-NP-Deletion and Passive.

(iii) Tense Realization: The necessity for generating tense features in underlying sentences incorporating the complementizer To and those incorporating the complementizer ING was discussed in Chapter II - cf. 2.4.3. The following two rules are required if the underlying sentence incorporates the complementizer ING:



On the other hand, the following two rules are required if the underlying sentence incorporates the complementizer To:



6.2.2. Minor transformations:

These are optional rules that apply to a minority of

lexical items but not to ordinary underlying structures. In this respect we could distinguish three minor rules that apply to structures underlying gerundials and infinitivals: Negative Raising, Modal Raising, and Object-Raising. Below is a definition of each of these rules:

(i) Negative Raising: This is an optional rule that moves the element Neg from an embedded sentence to the matrix sentence: viz.

- (4) a. She expects [it] [not to happen] \implies
b. She does not expect [it] [to happen]

The mechanics of this transformation have been discussed in Chapter II - c.f. 2.8.2. It was suggested, however, that the existence of this transformation is suspect⁴ since it operates on only a handful of verbs and adjectives that co-occur with noun phrase complements (e.g. think, believe, anticipate, expect, want, seem, likely), and since some speakers do not interpret the two sentences in (4) as synonymous. Unlike Modal-Raising and Object-Raising, Negative Raising is not an idiosyncratic property of the infinitival complementizer, for it applies to underlying sentences incorporating the that complementizer and to those incorporating the -ING complementizer: cf.

- (5) a. I think that they will not leave \implies
b. I do not think that they will leave

- (6) a. I anticipated not deriving much instruction from the lecture \implies
b. I did not anticipate deriving much instruction from the lecture

(ii) Modal-Raising: This is a minor transformation whose application is limited to embedded sentences co-occurring with

the verb seem. Its application depends on the prior application of two other transformations, namely Subject-Raising, and Negative Raising (cf. 2.5.1.). However, it is a minor transformation and obviously it is an idiosyncratic property of the verb seem and it operates only on the two auxiliaries can and could: viz.

- (7) a. [Mary not to can understand the problem] seems ⇒
- b. [Mary] seems [not to can understand the problem] ⇒
- c. [Mary not] seems [to can understand the problem] ⇒
- d. [Mary cannot] seem [to understand the problem]

(iii) Object-Raising: This rule optionally applies to certain underlying sentences incorporating the complementizer TO and co-occurring with one of the following predicative adjectivals and nominals: hard, tough, easy, difficult, impossible, simple, breeze and snap.⁵ It moves a non-subject NP from the embedded S to function as the surface structure subject NP of the matrix S: viz.

- (8) a. [To solve this problem] is simple ⇒
- b. [This problem] is simple [to solve]
- (9) a. [To play sonatas on this violin] is easy ⇒
- b. [Sonatas] are easy [to play on this violin]

Object-Raising is an idiosyncratic property of the complementizer TO, for it does not operate on an underlying S incorporating ING: cf.

- (10) a. [Solving this problem] is easy ⇏
- b.* This problem is easy solving

6.2.3. Cyclical Transformations:

The only transformations relevant to the grammar of NP

complementation that seem to apply cyclically are Subject-Raising and NP Copying.⁶ Of course, Passive and Reflexivization are cyclical transformations but these have a wider application than Subject-Raising. However in what follows we will define the contexts in which Subject-Raising and NP Copying apply.

(i) Subject-Raising: This transformation applies to an underlying S incorporating the complementizer TO to move its subject NP to the subject or object position in the higher S. In other words, the raised subject, depending on the grammatical function of the embedded sentence, functions as the surface structure subject or object NP of the matrix sentence: viz.

- (11) a. She expected [he to be punctual] \Rightarrow
b. She expected him [to be punctual]

The application of this rule is obligatory in most cases, but there are contexts in which its application is optional: viz.

- (12) a. We prefer [she to stay here]
b. We prefer [for her to stay here]
c. We prefer her [to stay here]

Subject-Raising is also a characteristic of certain subject infinitivals that co-occur with an intransitive verb or with certain adjectives like likely: viz.

- (13) a. [John to have had an accident] seems \Rightarrow
b. [John] seems [to have had an accident]

Notice that the application of this transformation to the structure underlying (13 a.) is obligatory for we are unlikely to attest either of the following two sentences:

- (14) a.* For John to have had an accident seems

(14) b.* It seems for John to have had an accident

It should be pointed out in this respect that not all higher verbs or predicative adjectivals allow Subject-Raising: cf.

(15) a. [Tom to have resigned yesterday] is likely \Rightarrow

b. Tom is likely [to have resigned yesterday]

(16) a. [Tom to have resigned yesterday] is surprising \nRightarrow

b.* Tom is surprising to have resigned yesterday

It seems to be the case that infinitivals that are sensitive to Subject-Raising are insensitive to NP Copying and vice-versa. The following data are self-explanatory:

(17) a. [John to have lost the game] appears

b. John appears [to have lost the game]

c.* It appears [for John to have lost the game]

(18) a. We thought [he to be in London]

b. We thought him [to be in London]

c.* We thought it [for him to be in London]

(19) a. [He to have lost the game] is surprising

b.* He is surprising [to have lost the game]

c. It is surprising [for him to have lost the game] ?

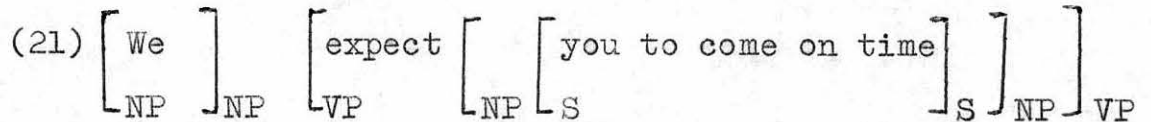
There are contexts, however, in which underlying sentences incorporating the complementizer To seem to be sensitive to both NP Copying and Subject Raising. Witness the possibility of the following two sentences:

(20) a. We expect [him] [to come on time]

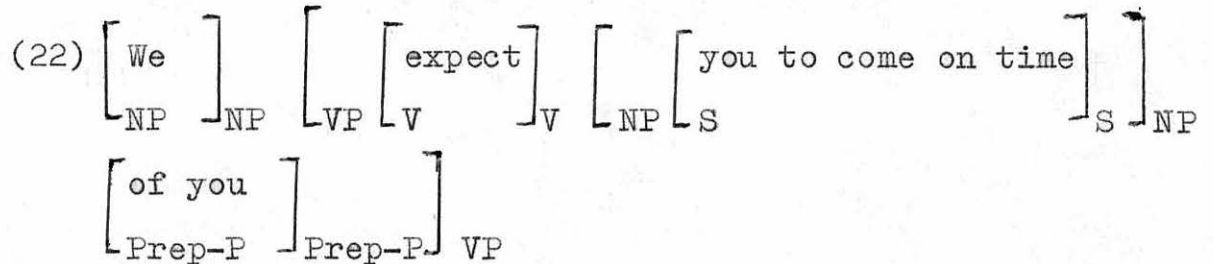
b. We expect it of him [to come on time]

However, it is not clear whether these two sentences derive from a common deep structure, most probably they do not. Sen-

tence (20 a.), it seems, derives from a deep structure like:



through Subject-Raising. On the other hand, sentence (20 b.) seems to derive from the following deep structure:



through the application of Equi-NP-Deletion and NP Copying. It could be argued, however, that sentence (20 a.) derives from (22) and not (21) by moving the NP you that appears in the Prepositional Phrase (a subsequent rule will delete the preposition of) to the object position in the matrix sentence, and by deleting the subject NP of the embedded sentence (i.e. you) through applying Equi-NP-Deletion. However, there is no motivation whatsoever for adopting such an ad hoc analysis when we could account for the derivation of (20 a.) from (21) in a straightforward manner.

Finally, it should be noted that Subject-Raising is an idiosyncratic property of the complementizer To, for it does not apply to underlying sentences incorporating either the complementizer ING, or the complementizer that.

(ii) NP Copying: We discussed this rule in some detail in Chapter IV (cf. 4.5.) where we showed that it copies a gerundial or an infinitival at the end of the containing sentence with a subsequent rule that obligatorily pronominalizes its original occurrence: viz.

- (23) a. [For John to have refused the offer] is surprising \Rightarrow
 b. * [For John to have refused the offer] is surprising
 [for John to have refused the offer] \Rightarrow
 c. [It] is surprising [for John to have refused the offer]
- (24) a. [John's refusing the offer] is surprising \Rightarrow
 b. * [John's refusing the offer] is surprising [John's
 refusing the offer] \Rightarrow
 c. [It] is surprising [John's refusing the offer]

This transformation is never obligatory in the case of gerundials and infinitivals that occupy the subject position, and it is blocked in the case of object gerundials and infinitivals except in a few cases of object infinitivals where its application is obligatory. This is the case if the infinitival is generated as the direct object of some member of a small set of transitive prepositional verbs including: expect (of), require (of), and possibly one or two others (cf. 4.5.): viz.

- (25) a. We expect [you to do your best] of you \Rightarrow
 b. We expect [it] of you [to do your best]⁸

(iii) Equi-NP-Deletion: We discussed this transformation in some detail in Chapter II (cf. 2.2.1.) where we showed that this transformation deletes an NP in the embedded S under co-referentiality with another NP in the matrix S. This transformation was assumed to be cyclical,⁹ but it has since been shown by Postal (1970) to be post or last-cyclical. Postal presents a large body of impressive evidence which points to the conclusion that Equi-NP-Deletion cannot be cyclical. First, he shows that Pronominalization must follow some last-

cyclical or post-cyclical rules and must therefore itself be post-cyclical. Then he enumerates some constraints that hold for both Pronominalization and Equi-NP-Deletion, and concludes that an important generalization would be missed if a large number of constraints were repeated twice in the grammar. As it would not be possible to constrain Equi-NP-Deletion after it has applied, the conclusion that NP's that are eventually deleted must be first pronominalized in order to participate in the constraints seems rather inevitable. Therefore Equi-NP-Deletion must follow Pronominalization. In this respect Postal proposes to break down Equi-NP-Deletion into two parts: a cyclical rule called Doom Marking will mark the NP's that will eventually be deleted, then another rule called Doom Erasure will delete only those NP's that are marked both [+ Doom] and [+ Pro]. Of course, a host of problems remain to be solved. First, the precise statement of Doom Marking and Doom Erasure is no simple matter. Secondly, this analysis is built on the assumption that Pronominalization is non-cyclical, when there does not seem to be general agreement among linguists as whether it is cyclical or not.¹⁰ However, be this as it may, Postal's evidence suggests rather strongly that the deletion of complement subjects cannot be handled by one rule, and that at least two are required. Finally notice that whereas the application of Equi-NP-Deletion is usually obligatory, there are a few contexts where its application is optional (cf.2.2.1.).

6.2.4. Other transformations:

(i). TO BE - Deletion: This rule operates on an underlying copular sentence incorporating the complementizer TO to delete

both the complementizer TO and the immediately following copular verb BE. It relates pairs of sentences like the following:

- (26) a. They proved themselves to be innocent
b. They proved themselves innocent

Let us now consider some of the contexts in which this rule applies. First, it applies to underlying sentences of the form:

- (27) NP + TO + BE + Adj

Prior to the application of this rule, the underlying sentence should obligatorily undergo Subject-Raising. Consider the following data:

- (28) a. He likes [his coffee to be strong] ⇒
b. He likes [his coffee] [to be strong] ⇒
c. He likes [his coffee] [strong]

The application of this transformation is not restricted to object infinitivals, for there are contexts in which it operates on subject infinitivals: viz.

- (29) a. [The situation to be quite hopeless] seemed ⇒
b. [The situation] seemed [to be quite hopeless] ⇒
c. [The situation] seemed [quite hopeless]

Secondly, To Be - Deletion applies to embedded sentences of the form:

- (30) NP + TO + BE + NP: cf.

- (31) a. Everyone reported [she to be a student of a friendly disposition] ⇒
b. Everyone reported [her] [to be a student of a friendly disposition] ⇒
c. Everyone reported [her] [a student of a friendly disposition]

The application of this rule depends mainly on the type of the main verb in the matrix sentence. The following data are self-explanatory:

(32) a. They knew Nixon to be honest

b. *They knew Nixon honest

(33) a. I believe Nixon to be president of the U.S.A.

b. *I believe Nixon president of the U.S.A.

Finally, it should be noted that TO BE - Deletion is an optional transformation, for witness the acceptability of (28 b.), (29 b.) and (31 b.).

(ii). Prep-P-Deletion: It was argued in Chapter II (cf. 2.2.) that the type of infinitival instanced (34) and the type of gerundial instanced in (35) contain in their deep structure a prepositional phrase that consists of the sequence: for + one:

(34) It is amusing to talk to foreigners

(35) Speaking a foreign language is an advantage

Under this analysis (34) derives from a deep structure like (36) and (35) from one like (37):

(36)
$$\left[\begin{array}{l} \left[\begin{array}{l} \left[\text{one to talk to foreigners} \right] \\ \text{S} \end{array} \right] \\ \text{NP} \end{array} \right] \left[\begin{array}{l} \left[\text{is} \right] \\ \text{VP} \end{array} \right]$$

$$\text{amusing} \left[\begin{array}{l} \left[\text{for one} \right] \\ \text{Prep-P} \end{array} \right] \left[\begin{array}{l} \left[\text{VP} \right] \\ \text{Prep-P} \end{array} \right]$$

(37)
$$\left[\begin{array}{l} \left[\begin{array}{l} \left[\text{One speaking a foreign language} \right] \\ \text{S} \end{array} \right] \\ \text{NP} \end{array} \right] \left[\begin{array}{l} \left[\text{is} \right] \\ \text{VP} \end{array} \right]$$

$$\text{an advantage} \left[\begin{array}{l} \left[\text{for one} \right] \\ \text{Prep-P} \end{array} \right] \left[\begin{array}{l} \left[\text{VP} \right] \\ \text{Prep-P} \end{array} \right]$$

Sentence (34) derives from (36) through the application of: NP Copying, Equi-NP-Deletion and Prep-P-Deletion, whereas (35)

derives from (37) through the application of: Equi-NP-Deletion and Prep-P-Deletion. The application of this rule is optional and it is ordered after Equi-NP-Deletion, and is thus a non-cyclical transformation.

(iii). S-Pruning: Strictly speaking S-Pruning is not a transformation, it is rather a convention or - to use Ross's (1968: 26) terminology - a meta-rule. This rule applies to an S that underlies a subjectless infinitival (subjectless in surface structure). In other words, the pruning of the node S under whose domination the infinitival is created gets pruned if the subject NP of an object infinitival has been deleted or has been raised to the matrix sentence. The justifications for this assumption were given in Chapter IV (cf. 4.4.3.). Under this assumption, the infinitivals contained in the following two examples are not dominated by the node S:

- (38) a. She wanted [to meet the students]
 b. She wanted [him] [to meet the students]

Finally, it is hoped that the grammar we have presented in this thesis could account for all the grammatical sentences incorporating gerundials and infinitivals as well as for the ungrammatical ones. I close this thesis with the following quotation from Chomsky (1965: v): "the tentative character of any conclusions that can now be advanced concerning linguistic theory, or, for that matter, English grammar, should certainly be obvious to anyone working in this area".

Footnotes to Chapter VI

1. It should have been noted that the phrase structure rules in (1-3) do not account for matters like: Tense, Aspect, Negation, Modal Auxiliaries, etc. Such matters have been, however, discussed extensively in the literature. A particularly interesting analysis is to be found in Emonds (1970), where he treats Tense, Modals and Negation as immediate constituents of the topmost S. On the other hand, he views Aspect as a property of the category V and like Tense it is generated in the base as features. For a detailed discussion see: Emonds, 1970: 3-4.
2. It is not clear whether the morpheme of is to be generated by the phrase structure rules of the grammar or is to be introduced transformationally.
3. See Rosenbaum, 1967-a; Lakoff, R., 1968; Lakoff, G., 1968-a; Kiparsky and Kiparsky, 1970; Postal, 1970.
4. It has been argued by Jackendoff (1969) that there is no rule of Neg-Raising; rather, the element Neg, he claims, is introduced in deep structure just where it occurs in surface structure, and a rule of semantic interpretation associates the element Neg with the sentence that it logically negates. He further argues that the verbs that allow Neg-Raising form a natural semantic class, and that it would never be the case that there would exist two synonymous such that one participated in Neg-Raising and the other did not.
5. Postal (1971: 27-31) refers to this rule as Tough-Movement since it is operative on infinitivals that co-occur with a set of semantically related adjectives comprising: tough, easy, difficult, etc.
6. Robin Lakoff (1969) argues that Neg-Raising is cyclical. On the other hand, there does not seem to be general agreement among linguists as to whether NP Copying is cyclical or not. Rosenbaum (1967-a) and Robin Lakoff (1968) argue that it is cyclical whereas Ross (1968) argues that it is not. Object-Raising has been shown by Postal (1971: 27-31) to be cyclical: cf. footnote 5 above.
7. In fact there are certain matrix verbs which when followed by an object infinitival allow both NP-Copying and Subject-Raising: viz.
 - (i) We prefer [she to stay here]
 - (ii) We prefer it for her to stay here
 - (iii) We prefer her to stay here
8. There are a few matrix verbs, however, which when followed by an object infinitival allow NP Copying: viz.
 - (i) I hate it for you to say things like thatSee also footnote 7 above.
9. See Rosenbaum, 1967-a; Lakoff, G., 1968-a; Lakoff, R., 1968.
10. Ross (1968: 180-203) gives evidence that Pronominalization is a cyclical rule, while Lakoff proposes that it be partly stated as output conditions: see Postal, 1970 and his reference to Lakoff's work.

APPENDIX I

Genitivization of the subject NP of the gerundial

This appendix is meant to show how 13 speakers reacted to the question of the genitivization of the subject NP of gerundial clauses - cf. 3.5. Each sentence is followed by three numbers: the first number shows the number of informants who consider the sentence perfectly acceptable, the number following the asterisk * shows the number of the informants who consider the sentence unacceptable, and the number following the question mark ? shows the number of the informants who would not consider the sentence as either acceptable or unacceptable (i.e. doubtful):

1. John's coming late surprised Bill: 13, *-, ?-.
2. I don't mind John's coming late: 12, *1, ?-.
3. I was not aware of Mary's being in Bangor: 10, *2, ?1.
4. John coming late surprised Bill: 8, *3, ?2.
5. I don't mind John coming late: 13, *-, ?-.
6. I was not aware of Mary being in Bangor: 13, *-, ?-.
7. Howard's coming to live with us disturbed the routine of our household: 13, *-, ?-.
8. We regret Bill's failing the exam: 12, *1, ?-.
9. They don't object to Susan's going there: 12, *1, ?-.
10. Howard coming to live with us disturbed the routine of our household: 9, *2, ?2.
11. We regret Bill failing the exam: 9, *2, ?2.
12. They don't object to Susan going there: 13, *-, ?-.
13. Mary's failing the exam is odd: 13, *-, ?-.
14. She dislikes John's getting up late: 11, *-, ?2.
15. She always boasts about John's being a doctor: 9, *3, ?1.
16. Mary failing the exam is odd: 7, *3, ?3.
17. She dislikes John getting up late: 13, *-, ?-.
18. She always boasts about John being a doctor: 13, *-, ?-.
19. Mr. Smith's being a doctor is an advantage: 12, *-, ?1.
20. I don't like Mary's wasting her money on luxuries: 7, *1, ?5.
21. She is thinking of John's marrying one of her daughters: 6, *3, ?4.
22. Mr. Smith being a doctor is an advantage: 8, *3, ?2.
23. I don't like Mary wasting her money on luxuries: 13, *-, ?-.
24. She is thinking of John marrying one of her daughters: 12, *1, ?-.
25. Mrs. Lakoff's having published a book is immaterial: 13, *-, ?-.
26. He could not understand Mr. Heath's being able to spare time for that: 10, *1, ?2.
27. They rejoiced at Mary's passing the exam: 8, *2, ?3.
28. Mrs. Lakoff having published a book is immaterial: 6, *4, ?3.
29. He could not understand Mr. Heath being able to spare time for that: 12, *-, ?1.
30. They rejoiced at Mary passing the exam: 12, *1, ?-.
31. Miss Nelson's being a secretary should make no difference: 13, *-, ?-.
32. We cannot excuse John's shouting at the secretary: 11, *1, ?1.
33. Miss Nelson being a secretary should make no difference: 8, *2, ?3.
34. We cannot excuse John shouting at the secretary: 11, *1, ?1.

35. John's and Mary's being students is irrelevant: 2, *10, ? 1.
36. They can't bear John's being away: 11, *-, ?2.
37. John and Mary's being students is irrelevant: 7, *3, ?3.
38. They can't bear John being away: 13, *-, ?-.
39. John and Mary being students is irrelevant: 11, *1, ?1.
40. You can't defend John's hitting her on the head: 12, *1, ?-.
41. You can't defend John hitting her on the head: 10, *-, ?3.
42. We must consider William's getting a job: 8, *3, ?2.
43. We must consider William getting a job: 8, *2, ?3.
44. The boy's coming late annoyed Mary: 13, *-, ?-.
45. The boy coming late annoyed Mary: 9, *3, ?1.
46. I can't bear the student's coming late: 5, *3, ?5.
47. I can't bear the student coming late: 13, *-, ?-.
48. I don't object to the student's coming late: 9, *2, ?2.
49. I don't object to the student coming late: 13, *-, ?-.
50. The student's failing the exam is odd: 13, *-, ?-.
51. The student failing the exam is odd: 7, *5, ?1.
52. They can't imagine the child's doing that: 4, *5, ?4.
53. They can't imagine the child doing that: 13, *-, ?-.
54. They complained about the child's breaking the window: 7, *4, ?2.
55. They complained about the child breaking the window: 13, *-, ?-.
56. The girl's being a secretary is an advantage: 13, *-, ?-.
57. The girl being a secretary is an advantage: 8, *3, ?2.
58. I could not understand the boy's breaking the window: 7, *3, ?3.
59. I could not understand the boy breaking the window: 13, *-, ?-.
60. The child's breaking the window yesterday is a nuisance: 13, *-, ?-.
61. The child breaking the window yesterday is a nuisance: 6, *5, ?2.
62. The girls' singing loudly disturbed the professor: 11, *2, ?-.
63. The girls singing loudly disturbed the professor: 8, *3, ?2.
64. I regret the girls' having an accident: 6, *4, ?3.
65. I regret the girls having an accident: 8, *4, ?1.
66. We did not know about the women's refusing to work: 6, *5, ?2.
67. We did not know about the women refusing to work: 13, *-, ?-.
68. The children's coming late infuriated the headmaster: 12, *-, ?1.
69. The children coming late infuriated the headmaster: 11, *2, ?-.
70. I did not mind the women's shouting at me: 5, *4, ?4.
71. I did not mind the women shouting at me: 13, *-, ?-.
72. She relied on the men's cleaning the place out: 5, *5, ?3.
73. She relied on the men cleaning the place out: 13, *-, ?-.
74. The women's having refused to come is a problem: 12, *-, ?-.
75. The women having refused to come is a problem: 8, *4, ?1.
76. We didn't like the children's being late: 6, *4, ?3.
77. We didn't like the children being late: 13, *-, ?-.
78. A student's coming late yesterday annoyed the professor: 8, *4, ?1.
79. A student coming late yesterday annoyed the professor: 11, *1, ?1.

80. I can't understand a man's behaving so badly: 3, *8, ?2.
81. I can't understand a man behaving so badly: 13, *-, ?-.
82. A stranger's sharing the trip was bad enough: 7, *2, ?4.
83. A stranger sharing the trip was bad enough: 10, *1, ?2.
84. She can't imagine a child's speaking so fluently: 4, *9, ?-.
85. She can't imagine a child speaking so fluently: 13, *-, ?-.
86. A boy's kissing his girl-friend is no sin: 6, *3, ?4.
87. A boy kissing his girl-friend is no sin: 8, *2, ?3.
88. Women's driving buses in London is immaterial: 4, *9, ?-.
89. Women driving buses in London is immaterial: 10, *3, ?-.
90. Guests' arriving late yesterday was a nuisance: 4, *7, ?2.
91. Guests arriving late yesterday was a nuisance: 9, *3, ?1.
92. We don't mind women's driving buses: 1, *11, ?1.
93. We don't mind women driving buses: 10, *2, ?1.
94. He doesn't regret the children's breaking the window: 8, *5, ?-.
95. He doesn't regret the children breaking the window: 10, *2, ?1.
96. The dog's barking at Susan terrified her mother: 11, *-, ?2.
97. The dog barking at Susan terrified her mother: 12, *1, ?-.
98. I can't bear the dog's barking all night: 5, *3, ?5.
99. I can't bear the dog barking all night: 13, *-, ?-.
100. She does not object to the dog's sleeping in her room: 6, *2, ?5.
101. She does not object to the dog sleeping in her room: 13, *-, ?-.
102. The cat's dying last night is surprising: 11, *1, ?1.
103. The cat dying last night is surprising: 12, *1, ?-.
104. She complained about the cat's eating her cheese: 5, *3, ?5.
105. She complained about the cat eating her cheese: 13, *-, ?-.
106. The bird's being black should make no difference: 11, *-, ?2.
107. The bird being black should make no difference: 11, *2, ?-.
108. The dogs' attacking the children last night terrified Mary: 9, *1, ?3.
109. The dogs attacking the children last night terrified Mary: 12, *1, ?-.
110. He cannot envisage the dogs' attacking his son: 4, *6, ?3.
111. He cannot envisage the dogs attacking his son: 13, *-, ?-.
112. Your cats' eating the cheese is a nuisance: 8, *2, ?3.
113. Your cats eating the cheese is a nuisance: 9, *3, ?1.
114. A dog's attacking the children annoyed their mother: 6, *5, ?2.
115. A dog attacking the children annoyed their mother: 12, *1, ?-.
116. I cannot understand a dog's attacking its master: 6, *6, ?1.
117. I cannot understand a dog attacking its master: 13, *-, ?-.
118. He is afraid of a dog's biting his son: 2, *7, ?4.
119. He is afraid of a dog biting his son: 12, *-, ?1.
120. A dog's killing his owner is surprising: 7, *4, ?2.
121. A dog killing his owner is surprising: 12, *-, ?-.
122. Mice's eating our cheese was bad enough: 2, *11, ?-.
123. Mice eating our cheese was bad enough: 12, *1, ?-.
124. Dogs' barking at night annoys my mother: 8, *5, ?-.

125. Dogs barking at night annoys my mother: 6, *7, ?-.
126. Birds' singing in the morning cheers me up: 9, *4, ?-.
127. Birds singing in the morning cheers me up: 6, *7, ?-.
128. The room's being dark depressed Mary: 11, *-, ?2.
129. The room being dark depressed Mary: 10, *1, ?2.
130. She doesn't mind the room's being dark: 3, *6, ?4.
131. She doesn't mind the room being dark: 13, *-, ?-.
132. She is terrified of the room's being dark: 4, *4, ?5.
133. She is terrified of the room being dark: 13, *-, ?-.
134. The window's being broken made me sick: 11, *-, ?2.
135. The window being broken made me sick: 10, *1, ?2.
136. He is not aware of the door's being open: 5, *4, ?4.
137. He is not aware of the door being open: 13, *-, ?-.
138. The ring's falling into the river was a shock to Mary:
10, *-, ?3.
139. The ring falling into the river was a shock to Mary: 9,
*2, ?2.
140. The desks' being old did not please the students: 7, *3,
?3.
141. The desks being old did not please the students: 10, *2,
?1.
142. I cannot envisage the houses' being rebuilt: 2, *9, ?2.
143. I cannot envisage the houses being rebuilt: 12, *-, ?1.
144. The cups' being dirty was a disadvantage: 8, *2, ?3.
145. The cups being dirty was a disadvantage: 7, *6, ?-.
146. The schools' having been rebuilt is immaterial: 9, *2, ?2.
147. The schools having been rebuilt is immaterial: 7, *6, ?-.
148. A car's passing by should not disturb you: 9, *2, ?2.
149. A car passing by should not disturb you: 11, *-, ?2.
150. He still remembers a car's rushing into his garden: 2,
*11, ?-.
151. He still remembers a car rushing into his garden: 13, *-,
?-.
152. She is afraid of a car's rushing into his house: 5, *6, ?2.
153. She is afraid of a car rushing into his house: 13, *-, ?-.
154. A watch's being stolen has nothing to do with this: 7,
*4, ?2.
155. A watch being stolen has nothing to do with this: 11, *1,
?3.
156. A door's being locked was by no means odd: 7, *2, ?4.
157. A door being locked was by no means odd: 12, *1, ?-.
158. Doors' being locked is by no means odd: 8, *3, ?2.
159. Doors being locked is by no means odd: 9, *4, ?-.
160. I hate doors' being locked all the time: 13, *-, ?-.
161. I hate doors being locked all the time: 13, *-, ?-.
162. The Guardian's being a British paper should not make you
biased: 10, *-, ?3.
163. The Guardian being a British paper should not make you
biased: 10, *2, ?1.
164. I dislike London's being so crowded: 7, *4, ?2.
165. I dislike London being so crowded: 12, *-, ?1.
166. The Catholics object to Ireland's being part of Britain:
10, *2, ?1.
167. The Catholics object to Ireland being part of Britain:
13, *-, ?-.
168. The Nile's drying up would be a disaster for Egypt: 12,
*-, ?1.
169. The Nile drying up would be a disaster for Egypt: 10, *2,
?1.

170. I can't think of Bangor's being a city: 6, *4, ?3.
 171. I can't think of Bangor being a city: 12, *1, ?-.
 172. London's getting dirty worries Mr. Heath: 10, *- , ?3.
 173. London getting dirty worries Mr. Heath: 8, *2, ?3.
 174. Honesty's being their emblem does not mean that they are honest: 5, *8, ?-.
 175. Honesty being their emblem does not mean that they are honest: 13, *- , ?-.
 176. He hates friendship's being exploited: 2, *10, ?1.
 177. He hates friendship being exploited: 13, *- , ?-.
 178. He was talking about honour's being abused: 2, *10, ?1.
 179. He was talking about honour being abused: 13, *- , ?-.
 180. Honour's being interpreted in this way is odd: 4, *8, ?1.
 181. Honour being interpreted in this way is odd: 13, *- , ?-.
 182. I can't understand honour's being interpreted in this way: 3, *8, ?2.
 183. I can't understand honour being interpreted in this way: 13, *- , ?-.
 184. No one objects to friendship's being honoured: 2, *10, ?1.
 185. No one objects to friendship being honoured: 13, *- , ?-.
 186. Water's being rare here depressed the students: 5, *6, ?2.
 187. Water being rare here depressed the students: 12, *1, ?-.
 188. We can't bear sugar's being so expensive: 3, *9, ?1.
 189. We can't bear sugar being so expensive: 13, *- , ?-.
 190. The workers complained about sugar's being expensive: 4, *8, ?1.
 191. The workers complained about sugar being expensive: 13, *- , ?-.
 192. Sugar's becoming expensive displeased the workers: 7, *4, ?2.
 193. Sugar becoming expensive displeased the workers: 12, *1, ?-.
 194. She was not aware of water's being salty here: 3, *8, ?2.
 195. She was not aware of water being salty here: 13, *- , ?-.
 196. They could not understand water's being rare: 3, *9, ?1.
 197. They could not understand water being rare: 13, *- , ?-.
 198. His coming late annoyed Mary: 13, *- , ?-.
 199. Him coming late annoyed Mary: 6, *3, ?4.
 200. He coming late annoyed Mary: -, *12, ?1.
 201. She does not mind his coming late: 12, *- , ?1.
 202. She does not mind him coming late: 13, *- , ?-.
 203. I don't object to his borrowing my book: 13, *- , ?-.
 204. I don't object to him borrowing my book: 13, *- , ?-.
 205. His failing the exam is odd: 13, *- , ?-.
 206. Him failing the exam is odd: 7, *3, ?3.
 207. He failing the exam is odd: -, *13, ?-.
 208. I don't like his wasting money on luxuries: 13, *- , ?-.
 209. I don't like him wasting money on luxuries: 13, *- , ?-.
 210. She insists on his staying here: 13, *- , ?-.
 211. She insists on him staying here: 13, *- , ?-.
 212. His being a doctor is an advantage: 13, *- , ?-.
 213. Him being a doctor is an advantage: 6, *3, ?4.
 214. He being a doctor is an advantage: 1, *9, ?3.
 215. We can't excuse your shouting at the secretary: 12, *- , ?1.
 216. We can't excuse you shouting at the secretary: 9, *- , ?4.
 217. She keeps boasting about your winning the race: 13, *- , ?-.
 218. She keeps boasting about you winning the race: 13, *- , ?-.

219. My having failed the exam is irrelevant: 13, *-, ?-.
220. Me having failed the exam is irrelevant: 6, *5, ?2.
221. I having failed the exam is irrelevant: -, *12, ?1.
222. She didn't mention your having been to Liverpool: 13, *-, ?-.
223. She didn't mention you having been to Liverpool: 10, *-, ?3.
224. She is sorry about your being sick: 12, *1, ?-.
225. She is sorry about you being sick: 11, *1, ?1.
226. Your having been to America means nothing to me: 13, *-, ?-.
227. You having been to America means nothing to me: 6, *4, ?3.
228. You must excuse my being late: 13, *-, ?-.
229. You must excuse me being late: 9, *1, ?3.
230. They were pleased about my passing the exam: 12, *1, ?-.
231. They were pleased about me passing the exam: 11, *2, ?-.
232. Your refusing the offer surprised us: 12, *1, ?-.
233. You refusing the offer surprised us: 6, *3, ?4.
234. They will consider my getting a job: 12, *1, ?-.
235. They will consider me getting a job: 9, *1, ?3.
236. He was furious at my refusing his offer: 13, *-, ?-.
237. He was furious at me refusing his offer: 11, *1, ?1.
238. Our going there displeased John: 13, *-, ?-.
239. Us going there displeased John: 5, *5, ?3.
240. She regrets our losing the race: 12, *1, ?-.
241. She regrets us losing the race: 7, *4, ?2.
242. They rejoiced at our arriving safely: 12, *-, ?1.
243. They rejoiced at us arriving safely: 9, *2, ?2.
244. Our having seen the accident does not count: 13, *-, ?-.
245. Us having seen the accident does not count: 6, *4, ?3.
246. We having seen the accident does not count: -, *12, ?1.
247. They don't mind our staying here: 12, *1, ?-.
248. They don't mind us staying here: 13, *-, ?-.
249. Their winning the race is immaterial: 13, *-, ?-.
250. Them winning the race is immaterial: 6, *3, ?4.
251. They winning the race is immaterial: -, *12, ?1.
252. We don't like their being Irish: 11, *1, ?1.
253. We don't like them being Irish: 12, *-, ?1.
254. I was pleased about their coming to Bangor: 12, *1, ?-.
255. I was pleased about them coming to Bangor: 10, *2, ?1.
256. Its being Sunday today should make no difference: 12, *-, ?1.
257. It being Sunday today should make no difference: 9, *3, ?1.
258. I don't mind its being Sunday today: 10, *2, ?1.
259. I don't mind it being Sunday today: 11, *2, ?-.
260. She was not aware of its being there: 11, *-, ?2.
261. She was not aware of it being there: 13, *-, ?-.

Appendix II

Lists of Verbs, Adjectives and Nouns

The following lists complement the formulas enumerated in Chapter V (cf. 5.2.1.). They are not claimed to be exhaustive, though I have included all cases that came to my attention during a thorough search through The Advanced Learner's Dictionary. In the course of this work I have also extracted information from: The Concise Oxford Dictionary, Alexander and Kunz (1964), Bridgeman (1965.a, 1965.b, 1965.c), Bright (1970), Alexander and Matthews (1964), Kiparsky and Kiparsky (1970), Scheurweghs (1959), Wigzell (1969), Hornby (1966), Rosenbaum (1967.a). (Words in every list are arranged in an alphabetical order).

List 1: (See First Formula: 5.2.1.)

 underlined verbs occur only with infinitivals, whereas verbs placed in brackets occur only with gerundials.

Affect, aggravate, alarm, amaze, amuse, anger, annoy, appall, appeal, appear, arouse, astonish, astound, attract, baffle, bedevil, befuddle, begin, beguile, bemuse, benefit, bewilder, bolster, boost, bore, bother, calm, captivate, cause, cease, change, charm, cheapen, cheer, comfort, commence, concern, confuse, continue, convince, cure, damage, deafen, defame, degrade, delight, demoralize, depress, destroy, disappoint, disarm, disconcert, discourage, disgrace, disgust, dishearten, dishonour, disillusion, dismay, displease, disquiet, dissatisfy, distract, distress, disturb, ease, elate, embarrass, enchant, encourage, enlighten, enrage, entail, entertain, exasperate, excite, exhaust, exhilarate, fascinate, frighten, frustrate, gall, gladden, go on, gratify, happen, harm, hearten, help, horrify, humiliate, hurt, illuminate, impress, improve, incense, increase, incriminate, infuriate, inspire, insult, interest, involve, irk, irritate, keep, lower, madden, make, (matter), mislead, move, mortify, nauseate, nettle, oblige, offend, outrage, overawe, overjoy, overwhelm, pain, pay, perplex, please, provoke, puzzle, reassure, recommence, refresh, relax, relieve, resume, reveal, revolt, ruin, sadden, satisfy, scare, seem, shame, shock, sicken, soothe, spoil, stagger, start, startle, stimulate, stop, strengthen, strike, stupefy, suit, surprise, sustain, take, tempt, terrify, thrill, tire, torment, touch, trouble, turn out, upset, vex, weaken, wear out, worry.

List 2: (See Second Formula: 5.2.1.)

 adjectives underlined in the following list occur only with infinitivals whereas adjectives placed in brackets occur only with gerundials.

Absurd, acceptable, accidental, adequate, admirable, advisable, advantageous, aggravating, alarming, amazing, amusing, annoying, appalling, apparent, appealing, appropriate, arguable,

astonishing, astounding, attractive, auspicious, awkward, bad, baffling, beastly, believable, bewildering, boring, bothersome, bound, burdensome, calamitous, captivating, catastrophic, certain, characteristic, charming, cheap, cheering, clear, clever, coincidental, commendable, comfortable, comic, common, complicated, comprehensible, compulsory, conceivable, considerate, constructive, contemptible, contingent, controversial, convenient, conventional, costly, correct, crazy, credible, creditable, criminal, critical, crucial, customary, damaging, dangerous, daring, decent, (definite), degrading, delightful, demoralizing, (deplorable), depressing, desirable, despicable, destined, difficult, disadvantageous, disagreeable, disappointing, disastrous, disconcerting, discouraging, disgraceful, disgusting, disheartening, dishonourable, displeasing, disreputable, distressing, disturbing, (doubtful), dramatic, dreadful, dull, easy, eccentric, embarrassing, encouraging, enjoyable, enlightening, essential, (evident), exasperating, excellent, (excusable), expedient, expensive, extraordinary, extravagant, fair, (familiar), fantastic, fascinating, fatiguing, feasible, fine, fitting, flattering, foolish, (forgivable), fortunate, frightening, frustrating, funny, futile, ghastly, good, gratifying, handy, hard, healthy, heartening, heavenly, helpful, horrible, horrid, horrifying, humiliating, ideal, illuminating, immaterial, immoral, imperative, (implausible), (implicit), impolite, important, impossible, impracticable, (improbable), (inadvisable), inappropriate, inauspicious, (incomprehensible), (inconceivable), (incongruous), inconsiderate, inconvenient, (incredible), indecent, (indefensible), (indicative), indiscreet, (indispensable), (indisputable), (inescapable), (inevitable), (inexpressible), infuriating, inhumane, insane, insignificant, inspiring, instructive, (insufferable), insulting, interesting, intriguing, irksome, ironical, irrational, (irregular), irrelevant, irritating, just, (justifiable), laborious, lamentable, laughable, legitimate, likely, loathsome, logical, lovely, lucky, maddening, (mandatory), marvellous, meaningful, meaningless, miraculous, monstrous, (morbid), mortifying, (mysterious), natural, nauseating, necessary, nice, normal, notable, (noteworthy), notorious, (objectionable), obvious, odd, opportune, (optional), orthodox, outrageous, painful, (pardonable), (patent), pathetic, peculiar, (perceptible), perplexing, perverse, pitiful, (plain), plausible, pleasant, pleasing, pointless, polite, (positive), possible, (praiseworthy), (predictable), (preferable), preposterous, (probable), profitable, promising, proper, (provable), (provedential), provocative, provoking, queer, (questionable), rash, rational, reasonable, reassuring, refreshing, regrettable, remarkable, repulsive, revealing, revolting, ridiculous, risky, rotten, rough, sad, saddening, safe, satisfying, scandalous, sensational, sensible, (serious), shameful, shocking, sickening, significant, silly, simple, sinful, splendid, staggering, startling, strange, striking, stupid, sufficient, (suggestive), sure, surprising, (symptomatic), tactful, terrible, thrilling, tiring, touching, tough, tragic, tricky, troublesome, (true), typical, unacceptable, (unavoidable), (unbelievable), uncanny, (uncertain), (undeniable), (understandable), unendurable, unhealthy, (unimaginable), unimportant, uninteresting, (unjustifiable), unlikely, unnatural, unnecessary, unpleasant, unprofitable, unscientific, (unthinkable), (untrue), unwise, upsetting, urgent, usual, useful, valuable, vexing, vital, wasteful, wicked, wise, wonderful, worthwhile.

List 3: (See Third Formula: 5.2.1.)

All nouns in the following list seem to combine with both gerundials and infinitivals.

Advantage, blessing, bore, bother, calamity, catastrophe, comfort, consolation, crime, curse, delight, disaster, disgrace, drudge, experience, fun, help, hindrance, honour, humiliation, joy, madness, mistake, nightmare, nuisance, pity, pleasure, relief, shame, sin, thrill, tragedy, triumph, victory, waste, worry.

List 4: (See Fourth Formula: 5.2.1.)

Part (I) of this list contains verbs that can take gerundials, whereas part (II) contains verbs that take infinitivals.

(I): Abhor, abide, abstain from, abominate, accentuate, accept, account for, acknowledge, act upon, adapt to, adduce, adjust to, admit, admit of, adore, advance toward, advertise, advocate, affect, affirm, afford, agitate about, agree to/on/with, aim at, allude to, announce, anticipate, apologise about/for, applaud, appraise, appreciate, approve of, argue about/for, arise from, arrange (for), ask about, aspire to, assent to, assist in/with, attempt, attack, authorize, avoid, await, bank upon, bear, bear with, begin with, believe in, benefit from, bet against/on, blush at, boast about, bother about/with, brag about, bring up, broach, calculate upon, call for, campaign for/against, can't help, can stand, care for/about, cause, celebrate, certify, challenge, chance upon, chat about, check (on), cherish, cite, cling to, coincide with, collaborate in, comment upon, compare with, comprehend, concede, conceive (of), concentrate upon, condemn, confer about, confirm, conflict with, consent to, consider, consist of, contemplate, contribute to, co-operate in, cope with, correspond to, count on, countenance, criticize, deal with, debate about/over, decide about/against/on, declaim against, decry, defend, delay, delight in, denounce, deny, depend on, deplore, deride, derive from, describe, deserve, despair about/of, detest, die from, differ about, disagree about, disallow, disapprove of, disavow, discern, disclaim, disclose, discourse about, discourage, discredit, discuss, dislike, dispense with, disprove, dispute (about), disregard, doubt, dread, dream about/of, dwell upon, elaborate on, emphasize, emerge from, encourage, end up with, endorse, endure, engage in, enjoy, entail, envisage, escape from, evade, evaluate, examine, excel in, excuse, expect, experiment in/with, explain, expostulate about, expound upon, exult over, fail at, fancy, fathom, favour, fear, feel, fight (against/for), focus upon, forbid, forebear, foresee, forget (about), forgive, frown at, gamble on, guard against, get over, give up, gloat over, glorify, gloss over, go against, gossip about, grumble at, guarantee, guess about, hail, harp about/on, hate, hear about/of, help in/with, hesitate about/over, hinder, hinge on, hint at, hurry over, hypothesize about, ignore, imagine, impede, imply, improve upon, include, indicate, indulge in, influence, inquire about/into, insist on, inspire, instigate,

intend, interfere with, introduce, intrude upon, invalidate, investigate, involve, issue from, jeer at, join in, joke about, judge, justify, jump into, keep from, kid about, know about/of, labour with, lament, laugh about/at, learn about, lecture about, legalize, license, lie about, like, limit, loathe, long for, look forward to, look into, love, marvel at, meditate about/upon, mention, mess around with, mind, miss, misunderstand, moralize about, motivate, mourn, need, neglect, note, notice, object to, observe, obstruct, oppose, opt for, overlook, overrate, pardon, participate in, perceive, permit, persist in, petition for, plan against/on, plot against, plunge into, point to, ponder about, postpone, praise, precede, preclude, predict, prefer, prepare against, press for, prevent, profit from, prohibit, prompt, prophesy, propose, protest against, prove, provide against/for, publicize, put up with, puzzle over, quarrel over, question, quibble about/over, quit, rail against, rate, react against, read about/of, reaffirm, rebel at, recall, reckon on, recollect, recommend, record, recover from, refer to, reflect on, refrain from, regret, rejoice at/over, relate to, relish, rely upon, remember, remark upon, reminisce about, report, repudiate, require, renounce, resent, resist, resort to, respond to, respect, reveal, revel in, revolt against, ridicule, rise against, risk, satirize, savour, schedule, scheme against, scorn, second, see about, settle on, show, shudder at, shy away from, sign (up) for, slide into, slur over, smile at, sneer at, speak against/of, specialize in, speculate about, spring from, can stand, stem from, stimulate, stop, strive against, struggle toward, study, submit to, succeed in, suffer for/from, sulk about, suggest, support, survive, suspect, sympathize with, take charge of, talk of/over, tell about/of, theorize upon, think about/of, tolerate, train for, trouble with, try, turn to, uncover, understand, urge, value, venture into, verify, veto, view, vote against/for, watch, weep over, welcome, wince at, wonder about/at, work at/toward, worry about/over, write about, yield to.

(II): Ache (for), acknowledge, adjudge, admit, adore, advertise, affect, affirm, afford, agree, aim (for), allege, allow, arrange (for), ascertain, ask, aspire (for), assert, assist, assume, attest, attempt, avow, bear, beg (for), begin, believe, bother, calculate, care (for), cease, certify, choose, claim, commence, concede, conclude, condescend (to), confess, conjecture, consent (to), consider, construe, continue, contrive, covenant, decide (on), declare, deem, deign, demand, deny, deserve, desire, determine (on), die (for), dislike, discover, disdain, dread, esteem, estimate, expect, fail, fancy, fear, find, forebear, forget, grant, guess, hate, hear, hesitate (from), hold, hope (for), imagine, indicate, intend, interpret, itch (for), judge, learn, like, loathe, long (for), look (for), love, lust (for), manage, mean, need, neglect, offer, opine, opt (for), perceive, plan (for), plead (for), pledge, plot (for), postulate, pray (for), prefer, prepare (for), prescribe, presume, presuppose, pretend, proceed, proclaim, promise, pronounce, propose, prove, qualify, realize, recognise, reckon, recollect, refuse, remember, report, repute, require, start, want, warrant, wish (for), wait (for), yearn (for).

List 5: (See Fifth Formula: 5.2.1.)

The verbs in part (I) occur with gerundials whereas those in part (II) occur with infinitivals. We exclude from (I) verbs that are associated with the preposition for, when the latter is paraphraseable by because. We also exclude from (II) verbs where the complementizer to is paraphraseable by in order to.

(I): Abet NP in, absolve NP of, accompany NP in, accuse NP of, accustom NP to, achieve NP in, acquaint NP with, acquire NP in, acquit NP of, adapt NP to, address NP to, advise NP about/against, aid NP in/with, amuse NP with, apply NP to, ascribe NP to, ask NP about, assign NP to, assist NP in/with, assure NP of, back NP in, bar NP from, base NP on, beguile NP into, blind NP to, bluff NP into, bore NP with, bother NP about/with, bully NP into, burden NP with, busy NP in/with, cajole NP into, caution NP about, centre NP on, charge NP with, charm NP into, clear NP of, coach NP at, coax NP into, coerce NP into, commit NP to, compare NP to, compliment NP on, concern NP with, concentrate NP on, condemn NP of, condition NP against/to, confuse NP with, congratulate NP on, connect NP with, consult NP about, contact NP about, content NP with, convict NP of, counsel NP against, credit NP with, cure NP of, deceive NP into, defend NP against, defy NP about, deliver NP from, destine NP for, deter NP from, devote NP to, direct NP into, discourage NP from, dissuade NP from, distract NP from, divert NP from/into, drag NP into, drive NP into, encourage NP in, enlighten NP about, entice NP into, entrap NP into, entrust NP with, exasperate NP into, excel NP at, excite NP into, exclude NP from, excuse NP from, exempt NP from, familiarize NP with, favour NP with, fight NP over, flatter NP into, focus NP on, fool NP into, force NP into, free NP from, frighten NP into, gear NP to(wards), goad NP into, guard NP against, help NP in/toward/with, hinder NP from, hold NP from, hurry NP into, impress NP with, infer NP from, inform NP about/on, instruct NP in, insulate NP from, interest NP in, interrogate NP about, interview NP about, introduce NP to, involve NP in, isolate NP from, keep NP from, keep NP into, lead NP into, lecture NP about/on, limit NP to, link NP with, lure NP into, manouvre NP into, manipulate NP into, mark NP for, mislead NP into, nag NP about/into, nominate NP for, occupy NP with, ordain NP for, overwhelm NP with, pester NP into, prepare NP for, preserve NP for/from, press NP into, prevent NP from, pride NP on, prohibit NP from, protect NP against/from, provoke NP into, push NP into, question NP about, reassign NP to, reassure NP about, reconcile NP to, refresh NP with, register NP for, release NP from, relieve NP of, remind NP about/of, rescue NP from, reserve NP for, restrain NP from, restrict NP to, rush NP into, safeguard NP against, save NP from, say NP about, scare NP into, scold NP about, seduce NP into, select NP for, shame NP into, spend NP on, specify NP for, stimulate NP to, stop NP from, summon NP about, surpass NP in, suspect NP of, tease NP about, test NP for, threaten NP with, torment NP into, torture NP into, train NP for/in, trap NP into, trick NP into, trouble NP with, turn NP from/to, upbraid NP about, use NP for/in, want NP for, warn NP about/against/of, waste NP on, worry NP into/over.

(II): Admonish NP (for), advise NP (of), allow NP (of), appoint NP (to), ask NP (of), assist NP (in), authorize NP (on), badger NP (about), beg NP (of), beseech NP (for), bribe NP (into), cable NP (about), caution NP (about/of), challenge NP (to), charge NP (with), choose NP (for), coax NP (into), coerce NP (into), commanded NP (?to), commission NP (to), compel NP (into), condition NP (to), counsel NP (about), dare NP (to), defy NP (to), direct NP (into), destine NP (for), drive NP (into), elect NP (for), empower NP (for), enable NP (into), encourage NP (into), entice NP (into), entitle NP (to), exhort NP (into), forbid NP (from), force NP (into), get NP (into), goad NP (into), implore NP (about), incite NP (to), inspire NP (for), instruct NP (in), invite NP (for), lead NP (into), notify NP (of), oblige NP (into), order NP (?for), permit NP (?into), persuade NP (of), pester NP (into), phone NP (?about), pledge NP (to), predestine NP (for), predispose NP (to), prepare NP (for), press NP (into), provoke NP (to), push NP (into), qualify NP (for), remind NP (of), request NP (?about), signal NP (about), stimulate NP (into), teach NP (about), telephone NP (?about), tempt NP (into), train NP (in/for), trust NP (with), urge NP (about), warn NP (about), wire NP (about).

List 6: (See Sixth Formula: 5.2.1.)

The underlined adjectives in this list occur only with infinitivals while those placed in brackets occur only with gerundi-als. Excluded from this list are adjectives that are followed by the type of infinitival instanced in the following sentences, (i) They were punctual to leave time for discussion, (ii) You must be ill to look so pale, (iii) I was too tired to eat.

(Absorbed in), (active in), afraid (of), aggravated (at), alarmed (at), amused (at), angry (about/at), annoyed (at), anxious (about), appalled (at), apt (to), ashamed (at/of), astonished (at), astounded (at), (averse to), baffled (at), (bent on), bewildered (at), (busy with), (careful in), (certain of), (competent at), (confident about), (confused about), concerned (with), (content with), delighted at, (dependent upon), desperate (for), determined (on), disappointed (at), disgusted (at), disposed (to), dissatisfied (with), (doubtful about), eager (on), embarrassed (at), (excellent at), excited (at), (experienced in), (fantastic at), (frantic with), furious (at), glad (about/at), (good at), grieved (at), happy (about/at), (hopeful about), horrified (at), impatient (for), impressed (at), infuriated (at), inclined (to), interested (in), (involved in), keen (on), (mad on), (marvellous at), moved (at), (obsessed with), (occupied with), offended (at), (opposed to), (optimistic about), (perfect at), perplexed (about/at), pleased (about), prepared (for), (proficient at), proud (of), (provoked at), puzzled (at), ready (for), (reliant upon), relieved (at), reluctant (about), satisfied with, scared (at/of), (sceptical about), shocked (at), (skilled in), sorry (about), surprised (at), (sure about/of), (terrible at), thankful (about), thrilled (at), (tired of), (trained in), unhappy (about), upset (at), worried (about/at).

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** for Fillmore (1966) see the last item on page 736.

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