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IN
COMPLEMENTATION

by

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P.M.
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GENERAL BACKGROUND

1.0 INTRODUCTION

A brief review of one’s linguistic competence, or an equally brief perusal of any reasonably complex test, will convince us that complementation is a very productive process in English. In fact, all major lexical classes (i.e. nouns, verbs, and adjectives) can take complements, at least in the surface structure as exemplified in (1), with (a), (b), and (c) as noun, verb, and adjective complement respectively:

(1) (a) the fact that John came early ...
    (b) Fred tends to stutter.
    (c) Bill is eager for Susan to come.

Despite the importance of this process, traditional grammarians have very little to say about complementation. For example, here is Jespersen’s discussion of complementation:\footnote{O. Jespersen, \textit{A Modern English Grammar on Historical Principles}, Vol. III (London, George Allen & Unwin, Ltd., 1939), ch. 2, sections 2.1-2.3.}

The difficulty of joining an object [clause] to certain verbs can be evaded by inserting “the fact” (or “the circumstance”). These constructions are frequent in modern English scientific prose ... there are no examples in the \textit{O.E.D.}

Jespersen cites the following example:

(2) The natives believe (have the belief) that the whites are great magicians.
Here, he says, "the clause is the object of the whole phrase 'have the belief'. Some [grammarians] would even call it [the clause] the object of the word itself." Jespersen also notes that there are "instances where there is no corresponding verb". His examples here are:

(3) (a) I have the idea that he is not quite honest.
(b) their idea (notion, impression, view, sentiment, doctrine, etc.) that priests are infallible ...

He goes on to say that "some grammarians [no reference] here disapprove of the term 'object', and say that the clause is appositional to the preceding substantive". Jespersen does not attempt to settle the question of whether these clauses are objectival or appositional, and if the former, whether they are objects of the whole phrase, or objects of the head noun.

The question of whether these noun complements are treated as objectival or appositional depends to some extent on whether underlying verbs are assumed for such nouns as fact, idea, notion, doctrine, sentiment, etc. That is, linguists who accept the transformationalist position will find it easiest to explain complements on these nouns as deep structure sentential objects on the underlying verbs, while those linguists who accept the lexicalist position\(^2\) will find it easiest to explain these constructions as complements on the (head) nouns, parallel to complements on verbs and adjectives.\(^3\)

While there can be little doubt that traditional grammarians like Jespersen often presented very insightful analyses of grammatical facts, nevertheless, because of the framework within which they worked, they could not formalize their intuitions with anything like


\(^3\) It may be worth noting here that Stockwell, et al., Integration, subscribe to a combined lexicalist position and case grammar, and therefore can assume a unified deep structure for complements on both deverbal and non-deverbal nouns. This is possible because nouns and verbs are analyzed as taking case
the precision demanded of a modern grammatical analysis. For these reasons, I will not discuss any of the traditional analyses of complementation beyond the brief illustrative sample given above. Instead, I will concentrate on analyses within the transformational-generative framework.

To date, there have been a number of analyses of complementation and nominalization within this framework, some of them only touching upon the area in question, others being largely or completely devoted to that area. Of the latter, I have chosen to discuss here several papers and books, which seem to me of particular importance in the development of our understanding of the processes involved in complementation. One work was chosen because it is a summary of earlier work. There are probably other works which, one may justifiably argue, should have been included here as well. I am thinking in particular of two papers, one of which I chose not to discuss because it is not particularly relevant to my frames, and with both nouns and verbs the complements are sentences under the deep structure case of OBJECTIVE. (Stockwell, et al., changed the label OBJECTIVE to NEUTRAL, mainly in order to avoid confusion with the surface structure case label "object".) Consider the following:

(i) (a) verb

(b) noun

\[
\text{PROP} \quad \text{NEUT} \quad \text{NP} \\
\text{believe} \quad \text{NP} \quad \text{S} \\
\text{he is not quite honest} \\
\{ \text{belief, fact, idea, notion} \} \\
\text{he is not quite honest}
\]


6 See R. Stockwell, et al., "Complementation and Nominalization".
own work, the other because it is an extension and refinement of already existing work.

Needless to say, the summaries below are not to be thought of as complete reviews or critiques. Rather, they are meant to be sum-

7 See J. Bresnan, “On Complementizers: Towards a Syntactic Theory of Complementation”, Foundations of Language 6.3. Bresnan’s work can be characterized as being within the interpretive semantic framework. She makes reference to differences in meaning found in some complements, and argues that this difference can be captured by different complementizers which, she maintains, must be in the deep structure. She cites examples like

(i) (a) *It may distress John for Mary to see his relatives.*
    (b) *It may distress John that Mary sees his relatives.*

[her examples (1) and (2), p. 297], and points out that “the latter but not the former does in fact presuppose that Mary sees his relatives” (p. 302). This kind of meaning difference was, of course, pointed out at least as early as 1960 (by R. Lees, cf., footnote 5, above).

It is easy to show that the formal properties of the complementizer are not sufficient to capture differences in meaning like those exhibited in (i). Consider for example

(ii) *It may distress John for Mary to have seen his relatives.*

which has the same presupposition as does (i.b), but the same complementizer as does (i.a). Ascribing the difference in meaning to the *have* in (ii) is not feasible, at least not for an interpretive semanticist, since the *have* was (or at least could have been) transformationally inserted; cf. …for Mary to have seen his relatives yesterday, which could not have been derived from something like *Mary has seen his relatives yesterday.* For a number of additional arguments about why formal syntactic properties of complementizers are insufficient to ascertain the correct semantic reading of complements, see Kiparsky and Kiparsky (footnote 4, above), Karttunen (footnote 8, below), and the rest of this work.

8 See L. Karttunen, “Implicative Verbs”, Language 47, 2. Karttunen’s work is an investigation of the semantic properties of a class of verbs he calls “implicative”, which includes manage, remember, bother, dare, venture, etc. as opposed to non-implicative verbs like hope, decide, plan, intend, etc. Karttunen notes that implicatives are like factives, in that both include in their semantic readings the fact that the speaker “commits himself to the view that [the embedded sentence] is true” (p. 341). Consider a factive like

(i) *Fred is aware (of the fact) that Bill closed the door.*

and note that (as pointed out by the Kiparskys) the speaker of this sentence presupposes that the embedded sentence is true. Now consider sentences like
maries of those aspects of the works that were particularly important to the later development of analyses of complementation and nominalization, as well as to my own understanding of the processes involved.

1.1 CHOMSKY’S “TRANSFORMATIONAL APPROACH TO SYNTAX”

Chomsky’s paper contains a short section on verb complementation and nominalization. Although he makes no claims as to the completeness of his analysis (on the contrary, he clearly calls it a “sketch”), he does differentiate between verbs taking complements and verbs taking nominalizations. The difference between these two structures, though assumed rather than proven, is implied to be that complements appear in the predicate, while nominalizations appear in subject position. More important, perhaps, Chomsky’s assumption that a complete sentence underlies a complement as well as a nominalization is an important first step in the explanation of the semantic interpretation of both these structures; in the sense that it is shown why in a sentence like

(ii) (a) Bill managed/dared/ventured/remembered/etc., to close the door.
    (b) Bill hoped/decided/planned/etc., to close the door.

and note that in (ii.a) but not in (ii.b) the speaker presupposes that Bill did, indeed, close the door.

In connection with my claim in footnote 7, above, note that both (ii.a) and (ii.b) would have the same complementizer in Bresnan’s analysis, despite the fact that they clearly have different meanings.

With respect to negation, however, implicatives have exactly the opposite semantic readings from factives. Thus, the negation of (i) would be

(iii) Fred isn't aware (of the fact) that Bill closed the door.

which still entails the speaker’s commitment that the embedded sentence is true. The negation of (ii.a), on the other hand, would be

(iv) (a) Bill didn't manage/dare/venture/remember/etc., to close the door.

which clearly entails the speaker’s commitment that Bill did not close the door.
the subject of the matrix verb is also the agent of the action implied by the infinitive. Furthermore, underlying sentences for these structures also explain why traditional grammarians judged that the noun phrase Bacon, in a sentence like

(4) (b) *John believes Bacon to be the real author.*

was at the same time the object of the verb believe, and the subject of the verb be.

At this early date, the major emphasis of any analysis was on purely syntactic criteria, both distributional and in terms of the behavior manifested with respect to those transformations formalized at the time. It was these criteria which led to the characterization (given by what his since been called the deep structures) of nominalizations as being sentences transformed into noun phrases, and that of complements as being sentences reduced to infinitives or gerunds and occurring in the verb phrase. Chomsky distinguishes ten classes of verbs which take different types of complements. In the examples in (5), the verb classification is taken directly from the paper in question, while the examples (with complements in small capitals) were made up to fit these classes.

(5) (a) consider, believe ... *They consider her BEAUTIFUL.*
(b) know, recognize, ... *They know her TO BE BEAUTIFUL.*
(c) elect, choose, ... *They elected him PRESIDENT*
(d) keep, put, ... *They kept it IN THE HOUSE*
(e) find, catch, ... *They found him PLAYING IN THE YARD.*
(e') persuade, force, ... *They persuaded him TO GO.*
(f) imagine, prefer, ... *The imagined him PLAYING IN THE YARD.*
(f') want, expect, ... *The wanted him TO GO.*
(g) avoid, begin, ... *They avoided MEETING HIM.*
(g') try, refuse, ... *They tried TO MEET HIM.*

The underlying structures for these complements were a matrix
sentence, containing a node COMP, and a constituent sentence which was inserted under that node after it was reduced by the appropriate transformation. Thus, what we would now call the underlying or deep structure of the complements given in (5.a) above, contains the two structures in (6.a) and (6.b):

(6) (a) They consider COMP her. (matrix)
    (b) She AUX be beautiful. (constituent)

As is pointed out in Stockwell, et al., the paper under discussion contained exactly one transformation for each of the complement types in (5). The rules are all very similar, and it appears that Chomsky's main point was that each of the above complements differ by at least one condition, and that this condition depended on the classification of the matrix verb.

Nominalizations are also derived from a matrix sentence, containing an empty NP node, and a constituent sentence which is inserted under that node after application of the appropriate transformation, e.g. (nominals in small capitals):

(7) (a) JOHN'S PROVING THE THEOREM was a surprise.
    (b) TO PROVE THE THEOREM is difficult.
    (c) JOHN'S REFUSAL TO GO was a great surprise.
    (d) THE GROWLING OF LIONS is frightening.
    (e) THE PROVING OF THE THEOREM is difficult.
    (f) THE COUNTRY'S SAFETY is in danger.

1.2 Lees' *The Grammar of English Nominalization*

Lees' work, far from being a "sketch", is an attempt to deal with the whole area of nominalization. In point of fact, Lees' *Grammar* does deal with more data than does either Rosenbaum's dissertation or the section on nominalization in Stockwell, et al., and it deals with these data in a very insightful way. Lees' achievement is particularly impressive if we stop to consider that he worked within the in-

* See R. Stockwell, et al., "Nominalization".
It is difficult to summarize Lees' *Grammar* precisely because it is such an ambitious undertaking. Because I will have occasion to refer to his work throughout this book, I will summarize here only what I consider to be those of his insights which are particularly important for recent work on complementation; namely,

1. Factive vs. Action nominals
2. The Factive — Manner ambiguity
3. The relation between gerundive nominals and infinitives

Lees' points out (p. 59) that "any assertion ... may be spoken of in English in the form of an abstract fact, or statement, ... by means of a factive nominal, ... [i.e.] a *that* clause". A few pages further on, he draws attention to the fact that gerunds are ambiguous between fact and manner, as long as the gerundive nominal does not contains the auxiliary *have* in the surface structure, in which case the gerundive is unambiguously factive. That is, the gerundives in sentences like (p. 64f; Lees does not number his examples):

(8) (a) *His drawing fascinated me.*
(8) (b) *The fact that he drew fascinated me.*
(8) (c) *The way (in which) he drew fascinated me.*

are ambiguous between the "fact" and "manner interpretation", as can be shown by the following paraphrases:

A few pages further (p. 71f), Lees points out that, since actions but not facts can be "fun" or "fashionable", and facts but not actions can be "surprising", gerundives containing subjects and FOR-TO nominals are factive, while subjectless infinitives and subjectless gerunds are actions; cf.

(9) (a) *His eating vegetables is surprising.*
(9) (b) *For him to eat vegetables is *fashionable.*

---

Finally, there is the so-called action nominal of the form (p. 65f):

(10) (a) *His bringing up of the box ...

Here, Lees points out that action nominals are not factive, since have may not occur; cf.

(10) (b) *His having brought up of the box ...

Lees also implies that there is a relation between action nominals and gerunds, as well as infinitives, since parallel to (9.a,c) there are sentences like (10.c,d).

(10) (c) *His eating of vegetables is surprising.

(d) The eating of vegetables is surprising.

Although this brief summary by no means does justice to Lees' work, it does make it clear that Lees' insights have influenced all future research in this area, particularly that of Kiparsky and the present work.

1.3 ROSENBAUM'S GRAMMAR OF ENGLISH PREDICATE COMPLEMENT CONSTRUCTIONS

Rosenbaum's dissertation deals mainly with three problems:

(1) The deep structure differences between sentential complements dominated by NP and those not dominated by NP.

(2) The similarity in the behavior of sentential complements with respect to the various transformations
they must or may undergo, regardless of whether these complements are dominated by NP or not.

(3) The principle underlying EQUI NP DEL.

I will discuss each of these problems, or rather Rosenbaum’s proposed solution to each of these problems, in turn.

1.3.1 The Deep Structure Differences

Rosenbaum notes that only some of the sentential complements in the predicate phrase can be pseudo-clefted and/or passivized, while all nonsentential NP’s in the predicate phrase can be pseudo-clefted; and, with certain recognized exceptions, all such non-sentential NP’s can be passivized. Exemplifying the pseudo-cleft in the (b) set of the examples below, and the passive in the (c) set, we find, e.g.

(11) (a) Columbus demonstrated that the earth was not flat.
                   (b) What Columbus demonstrated was that the earth is not flat.
                   (c) That the earth is not flat was demonstrated by Columbus.

(12) (a) The mouse ate the cheese.
                   (b) What the mouse ate was the cheese.
                   (c) The cheese was eaten by the mouse.

(13) (a) Bill tends to stutter.
                   (b) *What Bill tends is to stutter.
                   (c) *To stutter is tended by Bill.
                   (d) *I tended the Ball.
                   (e) *I tended something.

From these facts, Rosenbaum concluded that with verbs like tend the sentential complement cannot be dominated by an NP. Other verbs like tend are: begin, try, start, cease, etc.11

Rosenbaum also notes that some of the pseudo-clefts on embedded sentences take a preposition, the same preposition, in fact, as appears with the POSS-ING complements and with the passive; e.g.

(14) (a) Bill insisted that Fred should play Hamlet.
(b) Bill insisted on Fred's playing Hamlet.
(c) What Bill insisted on was that Fred should play Hamlet.
(d) What Bill insisted on was Fred's playing Hamlet.
(e) That Fred should play Hamlet was insisted on by Bill.

From this evidence, Rosenbaum concluded that verbs like insist take a prepositional phrase in the predicate, the NP of which dominates the sentential complement.

Sentential complements which appear in the predicate phrase next to a non-sentential NP were analyzed by Chomsky and Lees simply as complements. By applying his pseudo-cleft and passive tests, Rosenbaum found that some of these complements are dominated by NP, while others are not; e.g.

(15) (a) Bill advised John that Harry is a fool.
(b) What Bill advised John of was that Harry is a fool
(c) Bill tempted John to steal the money.
(d) *What Bill tempted John was to steal the money.

Rosenbaum also analyzed all so-called nominalizations as complements on the noun it. This is the so-called “it-plus-S” (henceforth it+S) analysis. Since that part of his analysis is not germane to my argument, I will not pursue it here. I only mention this fact because as a result of this analysis, Rosenbaum unifies the analysis of complementation and nominalization partly by saying, in effect, that they are all complements.

1.3.2. The Similarities of Behavior

The fact that nominalizations and complements (noun phrase and verb phrase complements, in Rosenbaum’s terms) behave similarly with respect to transformations is shown by the fact that both of them undergo the same transformations in the course of their derivation. Thus, once the type of complement or nominalization is determined (e.g. FOR-TO, POSS-ING, or THAT, again in Rosenbaum’s terms), the same transformations apply to both in the same
way. This claim may be confirmed simply by looking at two pertinent derivations in Rosenbaum's dissertation; e.g.

(16) (a) *John expected* to come early. (Noun Phrase Complement)

4. [[[for [to come early] VP] S]NP (PRON DEL)
5. [[[to come early] VP] S]NP (COMP DEL)

(b) *John condescended* to come early.

(Verb Phrase Complement)

3. [for [to come early] VP] S (EQUI NP DEL)
4. [[to come early] VP] S (COMP DEL)

As is evident from these examples, in Rosenbaum's analysis the derivation of noun complements is quite similar to that of verb complements, although the former does contain a few additional rules, such as PRON DEL (shown above, 16.a.4) and EXTRA (not shown).

1.3.3 EQUI NP DELETION

The rule of EQUI NP DEL can be defined in an informal way by saying that the subject of the complement is erased by the (indirect) object of the matrix sentence, if there is such an object, otherwise by the subject of the matrix. Rosenbaum, in trying to discover the principle which governs EQUI NP DEL, formalized the "principle of minimal distance". This principle states that in a matrix-complement configuration, it is always that NP in the matrix which is closest to some NP in the complement which erases the NP in the
complement. Rosenbaum defines distance by counting branches, on the deep structure tree, between the NP's in question, so that "closest" means "fewest branches" [p. 17]. Although there are a few exceptional verbs (e.g. promise in he promised John to go) the principle seems to work for Rosenbaum's deep structure trees.

Rosenbaum claims that his principle of minimal distance provides independent support for his distinction between NP dominated complements and non-NP dominated complements. He supports this claim with examples like the following:

(17) (a) I tempted John to leave early.

Sentences like these are claimed to have a deep structure as in (17.b) because only then will the principle of minimal distance erase the correct NP. If the deep structure is like the one in (17.c), the principle of minimal distance will not work. (The trees are Rosenbaum's; cf., p. 19, f)

While Rosenbaum's statement is correct as far as it goes, I should like to point out that the two trees are not comparable. The tree

(17) (b)

\[ S \]
\[ NP \]
\[ V \]
\[ John \]
\[ tempt \]
\[ PDP \]
\[ NP \]
\[ John \]
\[ leaves early \]

John to John = three branches\(^{12}\)
John to I = five branches

\(^{12}\) According to Rosenbaum (p. 6), branches are counted from the NP node to the NP node.
Thus, the only thing which the principle of minimal distance proves, with respect to NP domination, is the choice between having the

\[13\] I owe this observation to a discussion with Frank Heny.
complement under the node PDP or under the node VP. The question of whether the complement, of whatever type, is under PDP or VP, however, was never at issue. It is Rosenbaum's unsupported assumption of an ADV node dominated by PDP in (17.c) which raises that question. I can only speculate that Rosenbaum thought it necessary to analyze the complement on tempt in the way indicated in (17.c) because the pseudocleft with the matrix verb tempt is awkward; cf.

(19) (a) ?*What I tempted John into(?) was to leave early.

As is pointed out in Stockwell, et al., all pseudo-clefts on sentences whose complements do not have a subject in the surface structure are awkward; cf.

(19) (b) ?*What I want is to go.
(c) ?*What I persuaded John of is to go.
(d) What I want is for Bill to go.
(e) What I persuaded Fred of is that Harry is an idiot.

Therefore, if we were to take pseudo-clefting as a real test of noun phrase constituency, then all verbs allowing EQUI NP DEL would have to be analyzed as taking both a noun phrase complement and a verb phrase complement (in Rosenbaum's terms), the former when there is a surface structure subject, (19. d,e), the latter when there is no surface structure subject, (19.b,c). Such an analysis is clearly untenable, and Rosenbaum recognizes this, for he does not analyze verbs like want, expect, etc. as taking both noun and verb phrase complements. Note, moreover, that PDP is a questionable node in any case, since its only use appears to be that of keeping the nodes AUX and ADV from being directly dominated by S.

14 See R. Stockwell, et al., "Nominalization".
15 The fact that sentences with subjectless complements do not take pseudo-clefting is explainable on the grounds that subjectless complements are actions, and there are no sentences like

(i) *What I want is the/an action.

For detailed discussion, see section 4.2, below.
In summary, then, we may say that Rosenbaum’s Principle of Minimal Distance does not provide any support either for or against the distinction between his noun phrase complements and verb phrase complements.

1.4. KIPARSKY AND KIPARSKY’S "FACT"

In a short but very insightful paper, the Kiparskys claim that the surface structure form of complements is due, not to the quasi-accidental features on the matrix verb which Rosenbaum assumes, but to a semantic distinction of these verbs. The Kiparskys differentiate between factive and non-factive verbs, and between emotive and non-emotive verbs. These two types are not hierarchical but cross-classificatory. Factive complements can be recognized by the fact that they allow a paraphrase with the fact (of), while non-factive complements cannot be so paraphrased; e.g.

\[(20)\]
\[\begin{align*}
(a) & \text{(the fact) that he came at all is significant.} \\
(b) & \text{John was aware (of the fact) that Bill didn’t come.} \\
(c) & \text{(the fact of) his coming at all is relevant.} \\
(d) & \text{John bore in mind (the fact of) Helen’s having lied to him.}
\end{align*}\]

\[(21)\]
\[\begin{align*}
(a) & \text{(*the fact) that he came is false/true/possible/etc.} \\
(b) & \text{John asserted (*the fact) that she came.}
\end{align*}\]

Notice that while verbs of assertion and adjectives like possible take that clauses without the head noun fact, they do not take gerundive clauses at all, with or without fact.

\[(21)\]
\[\begin{align*}
(c) & \text{(*the fact of) his coming is true/false/possible/etc.} \\
(d) & \text{*John asserted (the fact of) her coming.}
\end{align*}\]

The Kiparskys claim that the behavior of verbs of assertion (and belief) and the class of adjectives in question is automatically explained by the fact that they are not factive, since only factive clauses can be either that clauses or gerundive clauses, and other verbs can therefore only take that clauses or FOR-TO clauses.

The Kiparskys then go on to show that a number of other syn-
tactic facts can be predicted on the basis of the initial semantic distinction of [+/-FACT] and [+/-EMOT]. Thus, all emotive complements are what Rosenbaum calls FOR-TO complements, though not all of Rosenbaum’s FOR-TO complements are emotive. That is, the two classes are not coextensive, but the class of FOR-TO complements includes that of emotive complements. In fact, the Kiparskys indicate that FOR-TO is not, as Rosenbaum thought, a single complementizer. Rosenbaum spreads FOR-TO onto the complement, parallel to POSS-ING and THAT. This operation is followed in Rosenbaum’s grammar by EQUI NP DEL and two types of for DEL, one general and triggered by the absence of the subject in the complement, the other governed by a feature on the verb. Rosenbaum gives examples like (22):

(22) (a) *John tried to run. [EQUI NP DEL followed by general for DEL]*
(b) John expected (*for) Bill to do it. [for DEL governed by feature on verb expect]

The Kiparskys claim that there is a process of “infinitivalization” (to insertion), which takes place whenever there is no subject with which the verb (in the embedded sentence) can agree. There are three ways of “removing” the subject of a complement:

1. EQUI NP DEL
2. Raising the subject into the matrix sentence
3. for insertion

Since EQUI NP DEL is clear, at least as a process, although we are a long way from understanding its problems, I will not discuss it further here. Raising out of the complement is not clear at all, but there is evidence that the subject of a complement can be raised out of that complement and into the matrix sentence, where it can take up either the subject or the object position.

1.4.1 The evidence for raising to object is the following:

a. Verbs like expect, consider, know, desire, believe, etc., do not
have a for with their complements, as in

(23) (a) *I expect/believe/consider/know/etc. (*for) John to be my friend

b. All of these verbs allow passivization on the subject of the complement:

(23) (b) John is expected/considered/known/believed/etc. to be my friend.

c. As pointed out in Stockwell, et al., Reflexivization is possible with these verbs:

(23) (c) I expected/considered/believed/knew/etc. myself to intelligent.

d. Verbs of the senses (like see, watch, hear, feel, perceive, etc.) take a sentential complement (i.e. not a noun phrase followed by an embedded sentence), yet they allow reflexivization:

(23) (d) I saw/heard/felt/watched/etc. myself breathe.

1.4.2. The evidence for raising to subject is the following:

a. Verbs like seem, appear, happen, which take obligatory extra-position and sentential subjects, can occur in either the form of (24.b) or (24.c), cf.,

(24) (a) *That John is a fool seems.
(b) It seems that John is a fool.
(c) John seems to be a fool.

b. Adjectives like likely also take extraposed sentential subjects, which can also occur in one of two forms, cf.,

16 See R. Stockwell, et al., “Nominalization”.
17 Depending on the choice of base component, the so-called “second passive” is either a case of raising to subject or of raising to object. Consider the following examples:
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(25) (a) That John will eat fish is likely.
(b) It is likely that John will eat fish.
(c) John is likely to eat fish.

The evidence here consists of the following observation: the sentence pairs in (24.b,c) and in (25.b,c) are synonymous and, therefore, all else being equal, (24.b,c) should have the same deep structure, as should (25.b,c). That is, (24.c) cannot be derived from something like

(24) (d) *John seems s[John AUX be a fool]

by EQUI NP DEL and to insertion, while (24.b) is derived from something like (24.a), because that would imply that (24.b) and (24.c) have different meanings. Similarly, (25.c) cannot be derived from something like

(25) (d) *John is likely s[John AUX like fish]

also by EQUI NP DEL and to insertion, for the same reason as cited for (24.c).

(i) (a) Somebody said that Horowitz played beautifully.
(b) That Horowitz played beautifully is said.
(c) It is said that Horowitz played beautifully.
(d) Horowitz is said to have played beautifully.

The ordering in these examples is not meant to imply that they are to be derived in that order. For example, in the Aspects model (presented in Chomsky, *Aspects of the Theory of Syntax* [Cambridge, Mass., M.I.T. Press, 1965]), (i.c) and (i.d) are related to (i.b) by raising the subject of the embedded sentence to the position of subject of the matrix sentence (i.e. by what I have called "raise to subject"). (i.b,c,d) are related to (i.a) by the passive. The ordering of these rules is such that passive applies before raise to subject. In a Case Grammar (presented in Fillmore, "The Case for Case") (i.c) and (i.d) are related to (i.b) by raising the subject of the embedded sentence to the position of object of the matrix sentence (i.e., by what I have called "raise to object"), (i.b,c,d) are related to (i.a) by a rule called "subject placement", which has two mutually exclusive alternatives "creating" active or passive subjects (and hence sentences) from the same underlying structure. The ordering of these rules is such that raise to object precedes subject placement, because the latter applies to the output of the former.
Note, incidentally, that verbs like those exemplified in (24) and adjectives like those exemplified in (25) are generally analyzed as intransitives with sentential subjects.

c. Verbs like *begin* either describe an action on the part of an agent, or a state, where the agent performing the action, or the object in the state, is the matrix subject, cf.,

\[(26)\]  
(a) *John began to eat the meat.*  
(b) *The house began to crumble.*

Perlmutter\(^{18}\) argues convincingly that (26.a) should be derived from something like

\[(26)\]  
(c) *John began s[John AUX eat the meat]*

by EQUI NP DEL and to insertion, while (26.b) should be derived from something like

\[(26)\]  
(d) *[*the house AUX crumble] began*

by obligatory raising to subject.

1.4.3 *For* Insertion

The Kiparskys claim that the insertion of the preposition *for* (governed by the feature [+EMOT]) makes the subject of the complement into the object of the preposition *for*; cf.

\[(27)\] *For him to come surprised us.*

There is, therefore, after *for* insertion no longer a subject available with which the verb in the complement can agree. For this reason, the verb in emotive complements remains as an infinitive, as it does in complements whose subject has been deleted or raised out of the complement, because the infinitive is the unmarked form of the verb.

\(^{18}\) See D. Perlmutter, *"The Two Verbs begin"*, in Jacobs & Rosenbaum, *Readings.*
1.4.4. The Fact

Positing an underlying, optionally deletable phrase the fact for the so-called factive complements has an interesting consequence with respect to Rosenbaum’s it+S analysis. At first sight, it seems that the proposal supports Rosenbaum’s analysis by unifying various types of noun complements. Notice, however, that extraposed factives take an “expletive” it, as in, e.g.

(28) (a) (the fact) that he came is significant.
(b) It is significant that he came.
(c) *It is significant the fact that he came.
(d) The fact is significant that he came.

From these examples it is clear that the phrase the fact cannot be extraposed.

The Kiparskys argue that the phrase the fact is pronominalized to it, implying that this process may occur without extraposition. They find that the it from extraposition is “expletive and semantically empty”, while the it from pronominalization is not. Thus, the examples in (29) are said to be from pronominalization, while the examples in (30) are said to be expletive its.

(29) (a) Bill resents it that he failed the exam.
(b) They didn’t mind it that Bill failed the exam.
(c) I had expected it that there would be a big turnout for the party.

(30) (a) It seems that both queens are trying to wriggle out of their commitment.
(b) It is obvious that Mary lost her marbles.
(c) That’s the one thing which it is obvious that he hadn’t expected.
(d) Goldbach’s conjecture, which I take it that you all know,...

There are at least three objections to the proposal to pronominalize the phrase the fact to it:
1. The first is the unexplained, and probably inexplicable, restriction to the object position.

2. The second is the fact that the grammaticality of $it + S$ objects is governed by the matrix verb, rather than by factivity, cf.

\[
(31) \begin{align*}
I & \text{ hated/liked/disliked/etc. it} \\
& \text{ that he came late again.} \\
& \text{ when(ever) he came late.} \\
& \text{ when we were in Denmark.} \\
& \text{ during the war.} \\
& \text{ ...}
\end{align*}
\]

3. The third, and perhaps most serious, is the fact that this would be the only instance where a definite pronoun replaces only the head of a construction, and leaves the modifier (i.e. the complement) intact. All other instances of definite pronominalization with which I am familiar pronominalize the whole construction, i.e. head as well as all modifiers.

But if we do not derive the $it$ in example (29) from pronominalization of the fact, factives must have the underlying form $it$-the-fact-$S$. I need hardly point out that this is an extremely unlikely deep structure.\textsuperscript{19}

1.5 Stockwell, et al., “Nominalization and Complementation”

Stockwell, et al. accepted Fillmore’s Case Grammar\textsuperscript{20} as well as Chomsky’s X-BAR convention.\textsuperscript{21} In terms of a Case Grammar, the X-BAR convention means that nouns as well as verbs can take cases (have case frames). Since this is not the place to defend either Case Grammar nor the X-BAR convention, let me simply say that this combination enables Stockwell, et al., to show, among other things, the parallelism between noun, verb, and adjective complements in a better way, we think, than is possible with the deep structure.

\textsuperscript{19} This analysis will, in fact, be rejected in section 3.2, below.

\textsuperscript{20} See Ch. Fillmore, “The Case for Case”.

\textsuperscript{21} See N. Chomsky, “Remarks on Nominalization”.
structures of the *Aspects* model,\(^{22}\) which are also used by Rosenbaum in his dissertation.\(^{23}\)

With respect to complementation, Stockwell, et al., also accept the analysis proposed by Kiparsky and Kiparsky,\(^{24}\) in the paper just discussed, and both extend and clarify that analysis.

When a proposal is made part of a large-scale grammar, it is often necessary to change some of its details. This was also the case with Case Grammar. In his paper "The Case for Case", Fillmore states that all nominalizations and complements are dominated by the deep structure case OBJECT. That is, Fillmore does not accept Rosenbaum's distinction between complements dominated by NP and complements not dominated by NP but by VP. Since Stockwell, et al., had already come to the same conclusion independently, they accepted this proposal by Fillmore — except that the name of the case was changed to NEUTRAL, which is not at issue here. However, even a brief consideration of one's grammatical competence will show that there are English sentences like,

\[(32) \text{ (a) That he was there proves that he was guilty.} \]
\[(32) \text{ (b) To see her is to love her.} \]

that is, that there are sentences with more than one sentential noun phrase embedded in them. Note, however, that (32.a) has a fact paraphrase, i.e. is a factive:

\[(33) \text{ (a) The fact that he was there proves that he was guilty.} \]

*The fact*, however, is an NP taking a complement, as do other nouns. That is, the structure which ends up as the surface structure subject of (32.a) has the deep structure (33.b) and not (33.c). In other words, the structure ending up as the subject of (32.a) is an *NP* with its sentential complement, and not a nominalization.

Stockwell, et al., analyzed the factives in sentences like (33.a) as

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\(^{22}\) See N. Chomsky, *Aspects of the Theory of Syntax*.


\(^{24}\) See P. Kiparsky and C. Kiparsky, "Fact".
being dominated by the case INST. The following arguments can be adduced for this analysis:

1. Examples like (32.a) indicate that factives cannot be deep structure OBJ/NEUTRAL case, because the second embedded sentence in this example is an OBJ, and no case may appear more than once in any case frame.

2. In sentences like (32.a) and in numerous others such as:

   (34) The fact that he came late alarmed/enraged/annoyed/
       astonished/bored/comforted/disconcerted/dismayed/enraged/
       exasperated/upset/surprised/startled/etc. Bill.

       the factive seems to be an “abstract instrumental”.

3. In the saving of exception features entailed in analyzing these factives as INST, since INST normally becomes subject in frames like:

   (35) (a) V - N - I [as in (30.a)]
   (b) V - D - I [as in (33)]

Sentences of the type examplified in (32.b) (i.e. sentences like to see her is to love her) can, of course, not be analyzed as factives. Note, however, that sentences like these can occur only with be as their matrix verb, cf.

   (36) (a) To see her is to love her.
   (b) To see her is to hate her.
   (c) Seeing is believing.
   (d) Hearing is believing.
GENERAL BACKGROUND

(e) To construct a grammar is to frame a hypothesis about a speaker's linguistic competence.

(37) (a) *To see her seems to love her.
(b) *To see her feels like to hate her.
(c) *Hearing appears believing.

As pointed out by Fillmore\textsuperscript{25} be has a case frame like

(38) be [N - ESS]

Sentences like those in (36) can therefore be accounted for by allowing the ESSIVE, as well as the NEUTRAL, case to dominate (an embedded) "S".

In short, in their section on Nominalization, Stockwell, et al., accepted and unified the analysis proposed by Fillmore\textsuperscript{26} and by the Kiparskys\textsuperscript{27} concerning nominalization and complementation in English. In the process of unification, some evidence was found which further supports the analysis proposed by the Kiparskys.

1.6 CONCLUSION

From this brief discussion, it can be seen that a deeper understanding of the processes of complementation and nominalization came with the realization that these processes are in part determined by semantic considerations. That is, the actual form of these embedded sentences is due to both semantic and syntactic factors. It is assumed in this work that the insight of the Kiparskys concerning the factivity of certain matrix verbs and their embedded sentences is basically correct. However, the main thesis of this work is that in addition to factivity, there are a number of other semantic factors which determine the syntax of complementation and nominalization.

\textsuperscript{25} See Ch. Fillmore, "The Case for Case".
\textsuperscript{26} See Ch. Fillmore, "The Case for Case".
\textsuperscript{27} See P. Kiparsky and C. Kiparsky, "Fact".
2

SIMPLE SENTENCES

2.0 INTRODUCTION

This chapter will deal with the classification of simple sentences. Both linguists and philosophers of language have classified sentences: the former according to the formal properties of the syntactic system, the latter according to the formal properties of some semantic system(s). While there is general agreement among linguists as to the classification of sentences, there is no such agreement among philosophers of language. This lack of agreement on the part of the philosophers is, I believe, due to two factors: the comparative difficulty of their task, and their occasional inability to separate what I will call the “linguistic system” from the “real world”.

As has been observed by a number of people before me, an utterance must, at one and the same time, conform to two systems: that of linguistics and that of the real world. It is in terms of the linguistic system that we speak of an utterance as being or not being a sentence of a certain type, and as being or not being grammatical. It is in terms of the real world system, or some world imagined by the speaker,1 that we speak of an utterance as being true or false, as making or not making sense, and as describing or not describing some aspect of that real or imagined world.

This chapter, then, will discuss both the linguists’ and the philoso-

1 For a proposal of how the grammar might treat imagined worlds, see G. Lakoff, “Counterparts, or the Problem of Reference in Transformational Grammar” (L.S.A. paper, summer 1968).
phers’ classification of simple sentences, particularly from the point of view of the linguistic evidence for the classification proposed by the philosophers; and, since this work deals with complementation, with particular attention to those aspects of the philosophers’ classification which sheds some light onto the processes involved in complementation. In other words, then, the purpose of this chapter is to examine how the philosophers’ classification of sentence types is related to and reflected in the linguists’ classification of sentence types. I hope to show that the relationship between the two classifications is not one-to-one with respect to simple sentences, but is one-to-one with respect to embedded sentences, particularly with respect to complements.

Before turning to the main topic of this chapter, I should like to clarify the terminology to be employed here and throughout the rest of this work. For the sake of convenience (i.e. not for any principled reason), I will employ the label “(linguistic) sentence type” for the syntactic classification of sentences by linguists, and the label “description types” for the philosophers’ classification of which aspect of the real world an utterance describes.

2.1 SENTENCE TYPES

Grammarians usually recognize the following sentence types for simple sentences:

- declarative
- performative\(^2\)
- interrogative
- imperative\(^3\)

Grammarians say that a sentence “is a” declarative, interrogative,

\(^2\) For justification of why performatives constitute a separate type of sentence, see section 2.1.1, below.

\(^3\) Some grammarians have added “negation” as a separate sentence type, but it is clear that negations do not constitute a sentence type because they can be applied to at least three of the sentence types listed above; i.e. there are negative statements, negative questions, and negative imperatives.
or imperative sentence. From the point of view of philosophy of language (and the real world), however, we cannot speak of sentences, but we must speak of declaratives, interrogatives, and imperatives as what the different sentence types of the same label "express". Although the semantic and the grammatical terms are identical, the difference is that sentences are grammatical or ungrammatical, while statements are true or false, questions are answerable or not, commands can be carried out or not, and performatives are appropriate or not.

Austin⁴ points out that, "it does not make sense to ask whether a sentence is true or false, but only if it is grammatical or not". More important, while a sentence like *Today is Tuesday* is grammatical at any time, the statement it expresses is true only on Tuesdays. This difference, Austin declares, is due to the fact that "a statement is made, and its making is an historic event ... The same sentence is used in making different statements (I say, 'It is mine', and you say, 'It is mine'). ... We speak of 'the statement that S', but of 'the sentence "S"', not of 'the sentence that S'".

2.1.1 Declarative vs. Performative Sentences

Austin⁵ also shows that it is necessary to separate what he calls "declarative sentences" from "performative sentences", because of their semantic and syntactic differences. With respect to their semantic structure, performatives do not make a statement, but constitute a performance on the part of the speaker. With respect to their syntactic structure, performatives can only have a first person (singular) subject, must be in the present tense, and are not true or false. Statements, on the other hand, can have subjects in any person, and can be in any tense. Statements are also true or false. Thus, a sentence like

(1) (a) *John ate the meat.*

⁵ See J. Austin, "Performative Sentences", in *Philosophical Papers*. 
is a statement, because it is either true or false. Sentences like⁶

(2) (a) *I (hereby) christen this ship Queen Mary.*
    (b) *I (hereby) bet you sixpence that it will rain tomorrow.*
    (c) *I (hereby) sentence you to six months in jail.*

are performatives. Notice that either a change in person, to, e.g.

(3) (a) *He (*hereby) christens this ship Queen Mary.*
    etc.

or a change in tense, to, e.g.

(3) (b) *I (*hereby) christened this ship Queen Mary.*

makes the performative sentences into declaratives, because they are now either true or false, and no longer allow the adverb hereby. From these observations it can be concluded that performatives constitute, indeed, a separate sentence type.

2.1.2 A Classification of Sentence Types

If we consider the four sentence types under discussion from the point of view of their semantic reading, they can be seen to fall, among others, into two cross-classifying classes, depending on whether only the speaker performs an action, or whether he also requests an action on the part of the addressee, and depending on whether the action(s) are purely verbal or not. Thus, a declarative sentence expresses a purely verbal action on the part of the speaker only, while a performative expresses an action that is not purely verbal. An interrogative expresses the speaker’s request for a purely

⁶ The examples in (2) are adapted from Austin’s “Performative Sentences”, 222f. Austin also notes that all performatives permit the adverb hereby to be inserted where they are shown in parentheses.

It should be pointed out that Austin also differentiates between statements and propositions. For him, propositions are philosophical, mathematical, etc. statements whose truth is not immediately obvious by inspection of the real world, while the truth (or falsity) of statements can be found out immediately by inspecting the real world. For my purposes, however, this distinction is not needed, and I will, therefore, use the term proposition for both Austin’s propositions and statements.
verbal action on the part of the addressee (to answer the question), while an imperative expresses the speaker’s request for a non-verbal action on the part of the addressee (to carry out the command or request). These observations can be captured by the (short hand) semantic features

(4) \([+/—\text{SPEAKER=AGT}]\)
\([+/—\text{VERBAL}]\)

The four sentence types can then be seen to have the following semantic features (among others):

(5) (a) declarative: \([+\text{SPEAKER=AGT}]; [+\text{VERBAL}]\)
(b) performative: \([+\text{SPEAKER=AGT}]; [—\text{VERBAL}]\)
(c) interrogative: \([—\text{SPEAKER=AGT}]; [+\text{VERBAL}]\)
(d) imperative: \([—\text{SPEAKER=AGT}]; [—\text{VERBAL}]\)

2.2 DESCRIPTION TYPES

Philosophers of language have classified sentences according to which aspect of the real world they describe and have thus arrived at the following sentence types:

proposition
event
process
action
state
property
relationship

In this section, I will attempt to establish the defining properties of at least those descriptive types which shed some light on complementation. This means that there are two reasons for ignoring those structures describing a "relationship". In the first place, a relationship can hold between any two or more objects, regardless of whether these objects are in any specific grammatical relationship
or not. That is, relationships of certain types hold, for example, between the two nouns in the noun phrases below:

(6) (a) a glass of beer  
(b) Fred's father  
(c) the roof of the house

and are not confined to sentences. I am, however, dealing with sentential complementation. Second, relationships do not appear to explain complementation in any way. For these reasons, I will not consider relationships in this work.

2.2.1 Propositions

It has been noted by philosophers of language that propositions are either true or false, and some of them have taken this to be the defining property of propositions:

(A) Propositions are either true or false.

This means, of course, that any time a hearer is confronted with a proposition, his question "is it true or false" is appropriate. This question, as was noted above, is appropriate for only one linguistic sentence type; namely, declaratives. That is, in terms of the linguistic sentence types discussed in section 2.1, above, only declarative sentences correspond to the philosophers' class of propositions, because the question "is it true or false" is only appropriate for this sentence type, cf.

(7) (a) John ate the meat.  
(b) I (hereby) order you to eat the meat.  
(c) Eat the meat!  
(d) Did John eat the meat?

which exemplify the four linguistic sentence types. Obviously, the question "is it true or false?" can only be asked of (7.a).

2.2.2 Events

Of the remaining description types, events, actions, and processes appear to be the most important for complementation, and I will, therefore, devote many of the following pages to them. These three classes can be separated from states and properties fairly easily, mostly on the basis of the stative-active division of verbs. Active verbs (with one exception to be discussed below) describe events, actions, and processes, while stative verbs describe states and properties. In addition, generics with any verb whatever also describe properties.\(^8\)

In other words, there is little disagreement, both among philosophers of language and among my informants,\(^9\) that sentences like:

\[
\text{(8) (a) John ate/is eating/will be eating/etc., the meat.}
\]

\[
\text{(b) The volcano erupted.}
\]

\[
\text{(c) The hammer broke the window.}
\]

\[
\text{(d) The pool filled with water.}
\]

describe events, actions, or processes, while sentences like:

\[
\text{(9) (a) John is rich/poor/tired/out of breath/etc.}
\]

\[
\text{(b) Fred is tall/intelligent/handsome/etc.}
\]

\[
\text{(c) Harry knows the answer to the question.}
\]

\[
\text{(d) John eats meat.}
\]

describe states or properties. The basic division (always excepting generics) is, thus, between action verbs and stative verbs. When it comes to subdividing the action and stative verbs, however, matters are less clear, and there is, therefore, less agreement.

Before I can turn to the problem of distinguishing between events, actions, and processes, I must briefly discuss the reasons for the disagreement among philosophers of language about the distinction in question. When I noted earlier that there is some disagreement

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\(^8\) I owe this observation to Barbara Partee, personal communication.

\(^9\) My informants were informally-consulted graduate students and faculty in the Department of Linguistics at the University of California, Los Angeles and in the Linguistics Program at the Florida State University, Tallahassee, Florida.
about which sentences describe events, which describe actions, and which describe processes, I was in a sense over-simplifying. There is even some disagreement between “what is a fact” and “what is an event”.10

There appear to be mainly two reasons for this disagreement. First, philosophers are not always careful to distinguish between what I have called “sentence types” and “description types”. Thus, although, e.g. Austin11 and others are careful to distinguish between a sentence and its statement (cf. section 2.1, above), they sometimes do not draw a sharp enough distinction between facts and events. Strawson,12 on the other hand, attempts to distinguish between these two, but seems to oversimplify the distinction between the real world and the linguistic description of it.

Vendler13 makes it clear that failure to distinguish between either of these has equally grave consequences. The worst of these seems to be that a lack or unclarity of distinction in one area usually leads to unclarity in the other. Vendler takes up the Austin-Strawson dispute about sentences like:

\[(10) \text{The collapse of the Germans}\begin{cases} \text{was an event.} \\ \text{is a fact.} \end{cases}\]

He points out that the fact that some verbs allow both factive and eventive subjects or objects does not mean that some facts (i.e. those which can be the subject or object of the matrix verbs in question) are also events. An assumption like this one does not take into consideration the difference between language and the real world, for, as Ventler points out, in the real world the people who participated in the collapse of the German participated in an event (as those who had some part in it certainly know); they did not participate in a fact.

11 See Austin, “Truth”.
12 See P. Strawson, “Truth”.
Factive clauses, then, are clearly not in the real world, but only in the "world of language", and Strawson is correct to that extent. What about events, actions, processes, states, etc.? While it is clear that they can be in the real world, it is a mistake to suppose that their linguistic description has anything to do with the real world. They must follow the same grammatical restrictions as do all other linguistic structures, and none of the physical restrictions which are imposed on the real world. In short, while facts are never found in the real world, and events, etc. are, this should not blind us to the truth that a linguistic description of any part of the real world always remains a linguistic description, and should never be confused with what it describes. Korzybski and Hayakawa\textsuperscript{14} have warned us repeatedly that "the map is not the terrain", and this warning is applicable to abstractions of the factive type, which have no simple counterpart in reality, as much as it is to abstractions of the event type, which appear to have a simple counterpart in reality.

Vendler goes on to examine various types of sentences describing events and finds that as long as they are simple sentences, there is no way of differentiating, e.g. between propositions and events. It is only when we turn those simplexes into nominalizations (and complements) that we can differentiate between these two, because as nominalizations (and complements) they can occur with certain matrix verbs (in certain frames), but not with other matrix verbs. It is therefore only as nominalizations and complements that we can say that a certain clause \textit{is} a fact, or an event, or an action, etc. while the simplex underlying that clause can only be said to make a proposition and describe an event. Moreover, while a simplex can at the same time, e.g. make a proposition and describe an event, the appropriate nominalizations of that simplex can be only one of these; i.e. either a proposition or an event, but not both. This means that it is only after nominalization that clauses become unambiguously propositions, facts, events, actions, states, and processes. Before

nominalization, simple declarative sentences belong to more than one description type.

According to Vendler, the most crucial test frame for events is

(11) (a) — occurred at ten o'clock.

Now, it is clear that only two types of nominals will fit into this frame; namely, gerundive and derived nominals. Thus, if we take the examples in (8) and nominalize them, we find the following:

(11) (b)  
(c)  
(d)  
(e)  

but not:

(12) (a)  
(b)  
(c)  
(d)  

(13) (a)  
(b)  
(c)  
(d)  

The reason why (11.e) and gerundives like it do not fit into the frame proposed by Vendler seems to be due to their being processes rather than events. Compare the following sentences:

(14) (a)  
(b)  

We can now attempt a definition of events:

(B) Events have an action verb and occur at a point in time. 
This definition will need to be refined after further consideration of processes.
Another division which philosophers of language attempt to make is that between events and actions. The following characterizations, taken from three philosophers who deal with what they consider actions, will illustrate that there is considerable disagreement among them as to what constitutes an action. Thus, Kenny\textsuperscript{15} says that an event is a state brought about or changed by an agent, while Chisholm\textsuperscript{16} finds that an action is an event caused by an agent. Davidson\textsuperscript{17} summarizes the disagreement by saying that some philosophers feel that all actions bring about a change in state, while at least a few others feel that only some actions are events caused by agents. As far as I can see, for Kenny events and actions are the same, while for Chisholm they are not. Davidson, in his summary, introduces the possibility that there may be events caused by agents which are not actions. (Perhaps passives.)\textsuperscript{18}

It would appear that the major problem in the distinction between events and actions is the fact that most philosophers of language consider a whole sentence to be an action. Thus, e.g. Davidson\textsuperscript{19} calls the following sentence an action:

\begin{enumerate}
\item[(15)] (a) \textit{John buttered the toast slowly, deliberately, in the bathroom, with a knife, at midnight.}
\end{enumerate}

A few pages later,\textsuperscript{20} however, he defines the sentence in (16.a) as in (16.b):

\begin{enumerate}
\item[(16)] (a) \textit{Shem kicked Shaun.}
\item[(b)] (\exists X) \textit{kicked (Shem, Shaun, X)}
\end{enumerate}


\textsuperscript{17} See S. Davidson, "The Logical Form of Action Sentences", in Rescher (ed.), \textit{The Logic of Decision and Action} (Pittsburgh, University of Pittsburgh Press, 1966).

\textsuperscript{18} The relation of passives to events, actions, and processes will be discussed in section 2.2.4, below. See also footnote 21, below.

\textsuperscript{19} See D. Davidson, "The Logical Form of Action Sentences", 82.

\textsuperscript{20} See D. Davidson, "The Logical Form of Action Sentences", 92.
and calls the variable "X" an "event". Yet the definition in (16.b) seems to define the action of "kicking".

If we apply linguistic criteria to this problem, rather than logical ones, the first thing we note is that events need not have an agent (cf. also their characterization above). Thus nominals and nominalization like:

(17) (a) The eruption of the volcano occurred at noon.
(b) The breaking of the window (with the hammer) occurred at noon.
(c) John's eating of the meat occurred at noon.

are events, since they can occur as subjects of the verb phrase occur + TIME-point. (It goes without saying that (17.a,b) do not contain agents.) Since these nominals and nominalizations are events, their underlying simplexes describe events. On the other hand, philosophers generally agree that actions are performed by agents. Thus, sentences like the following are generally accepted as describing actions performed by the respective agents (subjects) of the sentences.

(18) (a) Bill hit the boy.
(b) John went home.
(c) Harry lifted the luggage on the rack.
(d) John is eating the meat.

There is much disagreement, both among philosophers of language and among my informants, about sentences like:

(19) (a) Fred failed the exam.
(b) Mary slipped and fell.
(c) Susan missed the bus.

Most of the disagreement has to do with the problem of volition. That is, most people who have anything at all to say about this matter feel that the sentences in example (19) would describe actions if the subjects were acting from volition (were agents). Finally, there are sentences like:

(20) Paul arrived at the station.
which no one considers to describe an action on the part of Paul. The problem with verbs like *arrive* (and their nominals) is that they simply do not express volition. That is, these verbs leave the question of volition on the part of the subject completely unexpressed (unanswered).

Now, however, notice that Fillmore\(^{21}\) provided a way of accounting for these intuitive judgments with his notion of (deep structure) AGENT. An AGT is said to be "the typically animate perceived instigator of the action identified by the verb". Although Fillmore does not explicitly say so, the intuitively perceived difference in examples (19) between volitional agent and non-volitional DATIVE,\(^{22}\) resulting in a difference between action and event, could be easily formalized by assuming different case frames for actions as opposed to events in (19). That is, we can account for the intuitive judgments by assuming AGTs in the case frame of the actions, and DATs in the case frame of the events.

There is, however, one major disadvantage that arises from assuming these different case frames for events vs. actions in (19); namely, the fact that different case frames would be tantamount to claiming that in the lexicon there are two verbs for each of the verbs in (19), and of course numerous others of this type, one having the case frame:

\[(21) \text{(a)} + [\ldots \text{C}_t \text{ DAT}]\]

the other having the case frame:

\[(21) \text{(b)} + [\ldots \text{C}_t \text{ AGT}]\]

Thus, although case frames allow us to distinguish between the action sense and the event sense in sentences like those exemplified in (20.a-c), they do so at some cost in the lexicon. Several ways of unifying these entries suggest themselves.

The most obvious is a braced notation, like that used in phonology; cf.

\(^{21}\) See Ch. Fillmore, "The Case for Case", 24ff.

\(^{22}\) Fillmore (in "Case for Case", 24) defines the DAT(ive) as "the case of the animate being affected by the state or action identified by the verb".
The need for such notation would have to be justified on independent grounds, however, such as other verb classes taking either one of two cases but not both. Fillmore suggests a notation of interlocking parenthesis for two items, as in:

\[
(21) \ (d) \ [C_t (\text{DAT} \& \text{AGT})]
\]

This notation implies that at least one of the two items must be chosen. Note that this notation could only be possible if both DAT and AGT could be chosen with these verbs. In other words, the notation indicated in (21.d) would be possible if it could be shown that sentences like those in (19) are related to sentences of the type:

\[
(22) \ (a) \ \text{Bill made Fred fail the exam.}  \\
(b) \ \text{Frank made Mary slip and fall.}  \\
(c) \ \text{Ted made Susan miss the bus.}
\]

Though Fillmore does not discuss this particular relationship, it is clear that he is interested in expressing relationships of this type, since he does relate verb pairs like buy and sell, send and receive, etc. by using the same underlying verb with different case frames.

The predictability of the dummy causative verb make in sentences like those in (22) makes the relationship between the sentences even more suggestive. That is, if we assume that verbs like fail, slip, miss, etc. have a case frame like that in (21.d), then the choice of both AGT and DAT would entail insertion of the dummy causative verb make.\(^{23}\) Choice of either AGT or DAT, on the other hand, would

\(^{23}\) There are arguments that "dummy" verbs like make, take, etc. are not in the deep structure (nor in the lexicon), but are transformationally inserted; see, for example, my "Semantically Empty Verbs in English", read at the seventh South East Conference on Linguistics meeting in Athens, Georgia (May 1972). Within a generative semantic framework, incidentally, a verb like\textit{cause} is assumed to be present in the structure underlying the sentences in (22), which can be "spelled" either make or cause. The verb\textit{cause} is assumed to be present also in one reading of the sentences in (19) (the reading where the subjects are AGENTS), but not in the other reading, thus accounting for the ambiguity of these sentences.
yield sentences like those in (19), with their ambiguity as to whether the subject is an AGT or a DAT.

In short, then, though the notation in (21.a,b) entails an increase in the lexical entries, and implies that, in the lexicon at least, there are two verbs for each of the verbs under discussion, further analyses may well show that there are deeper relationships which obviate such entries. Finally, even if we are forced to use the lexical entries suggested in (21.a,b), it would seem that these entries are at least a first step towards differentiating between the two possible subjects (AGT vs. DAT) of the verbs of this class.

Summing up this section, we can characterize actions as:

(C) An action is performed by a (volitional) agent.

Note that the definition in (C) implies that actions (as well as states and properties, as will be shown in section 2.2.5, below) are expressed by predicates, rather than by whole sentences. Propositions and events, on the other hand, are expressed by complete sentences. This distinction will be of importance in the analysis of complementation proposed later in this work (see Chapters III and IV).

It should be pointed out that there is a relationship between events and actions, a relationship of the following type. If an event contains an agent, then the action described in the verb phrase of that event can be said to be performed by the agent in question.\(^{24}\)

There is another distinction we need to draw here, namely that between actions and acts. In remarks made at the 1969 San Diego Syntax Conference, Vendler indicated that acts are a subtype of actions, and pointed out that the speaker’s use of the (head) noun act implies that he disapproves of the action described in the predicate. Vendler cited sentences like

\(^{24}\) This statement is very similar to that of Chisholm, quoted earlier (see footnote 16) which states that “an action is an event caused by an agent”. The one formulated here is preferable, I think, because the verb perform allows us to distinguish more clearly between events and actions than does the verb cause. Note that, for example, the event described in the sentence the volcano erupted could be said to be “caused by something”, but could certainly not be said to be “performed by someone”.
(23) (a) The students' act of protest surprised us.
(b) The child's act of rebellion

and noted that they carry the speaker's disapproval, regardless of the fact that a matrix verb like surprise is neutral with respect to speaker approval.

Vendler's observations appear only partly correct, however, since he did not take into consideration two additional sets of examples relevant to the characterization of acts. The first of these includes sentences like

(23) (c) His act of heroism in saving the child impressed everyone who saw it.
(d) Such-and-such was an act of great courage.

The examples in (23.c,d) indicate that the (head) noun act can also be used to refer to an action the speaker admires.

The second set of examples concerns sentences like

(24) (a) ?Eating all the cake was an act.
(b) ?Brushing one's teeth is an act.
(c) ?The act of eating all the cake ...
(d) ?the act of brushing one's teeth ...

Note that these sentences and phrases are strange, but do not appear ungrammatical. The question, of course, is why they should be unacceptable. This question can perhaps best be answered by considering how the examples in (24) have to be changed to make them acceptable. The simplest way of doing this is to add an appropriate adjective before the noun act; e.g.

(25) (a) Eating all the cake was a despicable/incredible/courageous/etc., act.
(b) Brushing one's teeth is an (a) important/courageous/etc., act.
(c) the despicable/courageous/etc., act of eating all the cake ...
(d) the important/etc., act of brushing one's teeth ...
The examples in (24) and (25) indicate that the examples in (24) are strange because they do not normally qualify as acts. That is, the actions in (24) are normally not important enough to merit the speaker's censure or praise. It is only when the presence of an appropriate adjective overtly expresses the fact that these normally unimportant actions are, for some reason, important in this particular instance, that we can accept their being called acts.

From this brief discussion of acts and their relationship to actions, we can conclude that

(D) An act is an action which the speaker considers to be important. 25

Two claims are implicit in (D). First, the judgmental aspect of acts noted by Vendler is entailed by calling an act "important" since judgments in general are only made about those aspects of the real world we consider to be important. Second, because we found nothing in our discussion of actions in any way indicative that importance or judgment plays any role there, actions appear to be neutral with respect to any implication of importance or judgment on the part of the speaker.

2.2.4 Processes

In this section, I will attempt to clarify the linguistic distinction between processes, on the one hand, and events and actions on the other. Philosophers of language have little to say about processes. It is fairly clear that in the real world, one of the distinctions between an event and a process is that the former has no duration, while the latter does. Here, however, we encounter the first difficulty. While there are some truly durationless events, such as, e.g.

(26) (a) John's winning of the race ...
(b) Fred's completion of the problem ...

in the sense that, e.g. the actual instant when John wins the race is

25 See Section 4.3.1 for a detailed discussion of acts.
the instant of time when his chest touches the finish tape, which is certainly without duration. Not many events are completely durationless, however.

On the one hand, it is characteristic of processes that they "last some time", or "take some time"; and generally, they can be said to be subjects of any verb expressing duration (as opposed to events, which can be said to "occur" and cannot be said to "last/take some time"; see section 2.2.2 above). Compare the following sentences:

(27) (a) The event occurred.
(b) The process lasted for some time.
(c) The process (had) started/(had) ended/was in progress.

On the other hand, nominals apparently describing events can occur as subjects of verb phrases expressing duration, cf.,

(28) \[ \text{The eruption of the volcano} \]
\[
\begin{align*}
\text{had only begun.} \\
\text{had just ended.} \\
\text{was in progress.} \\
\text{lasted for some time.}
\end{align*}
\]

These observations seem to indicate that at least some events can be considered from the point of view of their duration: i.e. as processes.

Now, however, consider such apparently unambiguous processes as those in, e.g. (11.e) and (14). Note, first of all, that the verb occur can take time phrases which do not describe a point in time, but appear to be conceived as such; cf.

(29) \[ X \text{ occurred} \]
\[
\begin{align*}
at five minutes past three. \\
at ten o'clock. \\
last night. \\
yesterday. \\
last week. \\
last month. \\
last year. \\
\ldots
\end{align*}
\]

Needless to say, when the time phrase with *occur* does not describe a point in time, it can take nominals as subjects which imply duration; cf.

(30) (a) *The filling of the pool occurred yesterday.*  
(b) *The writing of my dissertation occurred last year.*  
(c) *The decline of the Roman Empire occurred during the first millennium.*

These considerations indicate that the linguistic difference between events and processes is not one of point in time vs. duration of time, but of "unit of time". According to this explanation, the difference between sentences describing events and those describing processes is the following:

(31) Depending on the time phrase in the predicate, any gerundive or nominal derived from an action verb can describe an event (be the subject of *occur + TIME-point*), as long as the unit of time in the time phrase is larger (longer) than the time it takes for the real world change to run its course. If, however, the unit of time is smaller (shorter) than the amount of time needed for the real world change, the resulting sentence is both ungrammatical and semantically odd.

This proposal indicates that the linguistic difference between events and processes is not a categorical one between point in time and duration of time, but that it is one of balance between unit of time and duration of real world change.

The claim that the linguistic difference between events and processes is at least in part due to the size of the time unit in the predicate is supported by the following observation:

(32) Real world changes that are not instantaneous can act as events, linguistically, as long as the semantic reading of the sentence allows the hearer to consider only the beginning or the end of the process.

With regard to processes acting as events because the hearer considers only their beginning, there are sentences like
The reading of the \{ will \\
poem \\
play \\
book \} \text{ will occur at noon tomorrow.}

From our knowledge of the real world, it is clear that none of the sentences in (33) describes an instantaneous occurrence, because it takes some time to read even the shortest will or poem. Furthermore, the nominals in (33) can be subjects of predicates indicating duration, cf.

The reading of the \{ will \\
poem \\
play \\
book \} \text{ took some time}

Yet, we accept the point in time expression in (33) for all the four nominal constructions. The reason for this acceptance can only lie in the fact that we interpret the point in time expression in the predicate of (33) to refer to the point in time at which the process begins. This explanation is supported by the fact that (33) is acceptable only as long as we view it as “reading aloud”, or as an announcement of some kind.

Turning now to processes acting as events because the hearer considers only their end, there are sentences like

(a) \text{The eruption of the volcano was the most significant event of the century.}

(b) *\text{The decline of the Roman Empire was the most significant event of the millennium.}

(c) \text{The fall of the Roman Empire was the most significant event of the millennium.}

Note that \textit{decline} cannot occur across the copula from \textit{event} (i.e. cannot be an event) while, e.g. \textit{fall} and \textit{eruption} can. The difference between the nouns in question is that the verbs underlying the nominals that can occur across the copula from \textit{event} are achievement verbs, while those which cannot occur there are not derived
from underlying achievement verbs. Nominals and gerundives derived from achievement verbs, thus, can act as events because the hearer interprets the completive aspect of the underlying verbs as referring to the end of the real world process, and ends, like beginnings, occur at points in time.

There is, however, one other parameter to be considered here; a parameter which appears to be as crucial as that of the unit of time. This parameter could be called "aspect". We noted at the end of section 2.2.3, above, that actions (as well as states and properties) are expressed by predicates, while events are expressed as whole sentences. This statement was meant to imply that events are concerned with the complete real world happening, without in any sense singling out any particular aspect of it. Actions, however, are concerned with a particular aspect of the real world happening, namely, who did it? Actions thus single out the agent performing the action. Finally, processes are also concerned with a particular aspect of the real world happening, namely, who or what did it happen to? Processes thus single out the patient undergoing the action.

These observations account for data of the following kind (for detailed discussion, see Chapter IV): event can occur as head noun of derived nominals and gerundives with a subject, cf.

(36) (a) *The event of \begin{align*}
    & \text{the volcano's eruption} \\
    & \text{Harry's eating the meat} \\
    & \text{eating the meat}
\end{align*} \ldots

Action can occur as head noun of predicates without a subject, cf.,

(36) (b) *The action of \begin{align*}
    & \text{*the volcano's eruption} \\
    & \text{*Harry's eating the meat} \\
    & \text{eating the meat}
\end{align*} \ldots

Process can occur as head noun of passive, cf.,

(36) (c) \begin{align*}
    & \text{* (John performed) the action} \\
    & \text{John underwent the process}
\end{align*} \text{ of being examined (by the doctor).}

Finally, notice that action but not process or event takes a possessive
preceding the head noun (from an underlying agent?), while process but not action or event can be in a prepositional construction with in, cf.

\[
\begin{align*}
\text{(d) } & \text{John's } \{ \text{action} \text{ \text{*process} \text{ \text{*event}} \text{ of eating the meat ... } \\
\text{(e) } & \text{The solution is in the } \{ \text{process \text{*action} \text{ \text{*event}} \text{ of being found }
\end{align*}
\]

We can now characterize processes, and refine the characterization of actions and events:

(D) An event occurs within a unit of time, and its aspect is the complete real world happening.

(E) An action is performed by a (volitional) agent, and its aspect is the agent of the real world happening.

(F) A process has duration, and its aspect is the patient of the real world happening.

2.2.5 States and Properties

Stative verbs describe states or properties. It appears from my investigations that it is not crucial for the analysis of complementation to distinguish between them. I will, therefore, give only a few general remarks about states and properties, only enough to identify them in a general way.

The difference between states and properties appears to be the following: properties are seen as in some sense being part of the object in question, while states are not so viewed. In addition, states appear to be of a short, or at least of uncertain, duration, while properties, since they are viewed as part of the object in question, are always associated with that object. That is, properties are not considered from a temporal viewpoint, but rather are viewed almost like inalienable possessions, while states are always considered to be more or less temporary, and never as being part of the object.
Moreover, states need not be associated with an object at all. Thus, sentences like:

(37) (a) John is rich/poor/late/early/out of breath/etc.
(b) It’s raining/it’s cold outside/there’s snow on the ground/etc.

are seen as states; cf. John is in the state of being poor/rich/late/etc. but not, *John has the property of being rich/poor/late/etc.

Note that sentences like (37.a), which have lexical subjects (as opposed to sentences like (37.b), which have non-lexical subjects) have the paraphrase:

(37) (c) X is in the state of Y.

while sentences like (37.b) have the paraphrase:

(37) (d) The state of Z prevails.

On the other hand, sentences like:

(38) (a) John is intelligent/tall/fat/etc.

are seen as properties associated with the subjects of such sentences or “belonging” to them, because the predicate is in some sense part of the subject of the sentence, while being rich/poor/out of breath/etc., do not seem to be part of the subject of sentences like (37.a); (37.b) does not even have subjects in any sense of a lexically empty it.

In addition to adjectives expressing properties, generic sentences also appear to describe properties. The examples below exhibit sentences with generic subjects and predicate adjectives (39.a), non-generic subjects with generic objects (39.b-d), and generic subject with present tense verbs (39.e). Interestingly enough, all of the sentences in (39) describe properties on the part of the subject of the sentences:

(39) (a) Man is omnivorous/gregarious/intelligent/etc.
(b) John eats meat/never drinks beer/likes girls/etc.
(c) Fido bites postmen/barks incessantly/sleeps all the time/etc.
(d) Helen hates men/likes boys/smokes cigars/etc.
(e) Birds fly/fish swim/etc.

From these sentences, we can conclude that a generic subject or object describes a property of the subject (set) of the sentence.

Additional light can be shed on this problem by considering the verb *have*, which also describes either states or properties, depending on whether the predicate contains a so-called inalienable possession or not. Briefly, the main verb *have* plus an inalienable possession describes a property, as in, e.g.

\[
\begin{align*}
\text{(40) John has} & \left\{ \begin{array}{l}
\text{three eyes.} \\
\text{blond hair.} \\
\text{long arms.}
\end{array} \right.
\end{align*}
\]

This fact should not be surprising, because, as was mentioned already, properties are felt to be qualities possessed by an object. In addition, it is clear that inalienable possessions are "part of" the object in much the same sense as are properties. Thus, the fact that John has two arms, two legs, a head, etc., is part of the definition of being a man (i.e. these are some of the defining properties of man). In the same sense, the fact that John has blond hair, a short temper, etc. is part of John's properties as well as being part of his inalienable possessions.

On the other hand, "alienable" (i.e. accidental) possessions like those in, e.g.

\[
\begin{align*}
\text{(41) John has} & \left\{ \begin{array}{l}
\text{five dollars.} \\
\text{a new house.} \\
\text{a blond girl friend.}
\end{array} \right.
\end{align*}
\]

appear to describe states: cf. *John is in the state of possessing five dollars/etc.* These possessives certainly are not in any sense defining properties of the subjects of the sentences. This raises some interesting questions concerning the relation between *have* and *be*; a relation which has often been felt to exist, but has never been fully explained. Unfortunately, it is not possible for me to do more than mention this relation now, since it has, again, no explanatory value for complementation.
Summing up this brief and rather inconclusive section, we can characterize properties and states in this manner:

(G) Properties are possessed by objects.
(H) States can be associated with objects. In this case,
   (a) objects are in states.
   Where states are not associated with an object, they are like conditions, hence
   (b) states prevail.

It should be noted that as far as properties and states are concerned, we cannot speak of agents as part of the definition; although at least with generic action verbs an agent can be the subject of a property. On the contrary, any OBJect or DATive (in Fillmore's sense, not in that of grammatical object of the verb or of a preposition) can have properties or be in a state.

2.3 SUMMARY

We can summarize Chapter II by reviewing the characterizations of simple sentences and their relationship to the real world.

To our perception, the real world either changes or remains static for a given period of time. In terms of simple declarative sentences, static conditions are described as states (with stative verbs), while changes are described as events (with action verbs). In both cases, the speaker is concerned with the complete condition or change in the real world. That is, he is not singling out any particular aspect of the condition or change. Examples of such descriptions are:

(42) (a) *It's raining/snowing/windy/cold out/etc.*
   (b) *The volcano erupted/John won the race/the house burned to the ground/etc.*

The speaker can, however, choose to single out a particular aspect of the state or event. With events, he can choose to single out the agent performing the action (thus describing an action), or the patient undergoing the action or the duration of the action (thus
describing a process). With states, he can determine whether he finds an object in a (more or less temporary) state (thus describing a state), or a defining characteristic of an object (thus describing a property). With simple sentences, some examples of the descriptions are of actions and processes not different from the description of events in (42.b), but these descriptions are different in embedded sentences:

(42) (c) *Harry ate the apple/Brigit wrote a book/the baby chewed his shoe/etc.*

(d) *John won the race/Mildred shot a unicorn/Columbus discovered America/etc.*

(e) *Fred is tired/restless/hungry/has five dollars/etc.*

(f) *Isabel has blonde hair/Francesca is beautiful/Derek is tall/etc.*

Acts are subtypes of actions, and therefore the same general remarks hold true also for them. Acts are actions which the speaker considers to be important. Examples of acts are:

(42) (g) *The criminal murdered his victim/Harriet ate all the cake/John won the race/etc.*

In addition to describing events or states, and completely independent of this parameter, a simple declarative sentence also makes a proposition. That is, in uttering a simple declarative sentence, the speaker normally makes a claim that what he said is a true representation of some condition or change in the real world. The hearer can then appropriately ask of any simple declarative sentence "is it true or false?" Facts, contrary to Strawson's claim,\(^\text{27}\) are not true propositions, but are claims which are presupposed to be true by the speaker of the sentence.

Let me now restate these observations formally:

(43) (a) A proposition is either true or false.

---

\(^{27}\) See P. Strawson, "Truth", and the summary of the Strawson-Austin controversy in section 2.2.2, above. Note also that the question of facts will be discussed in detail in section 3.2, below.
(b) An event has an action verb and is viewed as occurring at a given time. The aspect of an event is the complete real world change.

(c) An action is performed by a volitional agent. The aspect of an action is the agent performing the action in the real world change.

(d) An act is an action which the speaker considers to be important.

(e) A process has duration. The aspect of a process is the patient undergoing the action.

(f) An object possesses a property. The aspect of a property is the object possessing it.

(g) The aspect of a state can be the complete real world condition or the object which is in this condition.

   In the former case, (i) states prevail;
   in the latter case, (ii) an object is in a state.

I should like to point out that an adequate grammar must contain the characterizations summarized in (43) in some form, because they are clearly part of the native speaker's knowledge of his language. That is, in order to represent the knowledge of the native speaker, the grammar must be able to determine which sentence type a given sentence belongs to, as well as which description type it belongs to. (It does not, of course, matter at this point whether this is done interpretively or generatively; i.e. whether the grammar contains an interpretive semantic component, or is a generative semantic grammar.)

It will be shown in Chapters 3 and 4 that from the characterizations in (43), and another set of related characterizations (also needed on independent grounds), the grammar can predict the surface form of complements and nominalizations by a set of redundancy rules.

\[28\] It is one of the expressed goals of transformational-generative grammar to capture all the intuitions the native speaker has about his language.
3

EMBEDDED PROPOSITIONS

3.0 INTRODUCTION

In this chapter, I will investigate the problem of embedded that clauses (propositions). It will be shown that with the exception of the verbs of belief and a few verbs of assertion (which are performatives when they do not take the head noun) all verbs taking that clauses allow deletable head nouns like proposition, fact, idea, notion, position, before the that clause. The last three head nouns are very restricted in their occurrence, but proposition seems to show a range almost as wide as fact. These head nouns will be shown to exhibit the same syntactic and semantic properties as were adduced by the Kiparskys for fact. The restrictions on movement rules such as object raising and negative raising also applies to complements and head nouns other than fact, and the restrictions can be explained in the same way for all complements (i.e. by the Complex NP Constraint). These head nouns can also be deleted by the same rule, ordered somewhere after the rule of that deletion but before the relative clause and question rules.

This chapter also investigates the restrictions between matrix verbs and the sentence types they allow to be embedded under them. It will be shown that the subcategorization of matrix verbs and embedded sentences, according to the major sentence type outlined in Chapter 2, explains a number of otherwise accidental properties of the syntactic behavior of complementation.

Lastly, in the introductory section I will discuss the only other two analyses of noun complements within the framework of T. G.
3.0.1 Rosenbaum

As indicated in Chapter 1, section 3, Rosenbaum systematized the distinction between verb complementation and nominalization by utilizing various tests (i.e. passive, pseudo-cleft, and it pronominalization) which allowed him to differentiate between the two constructions in question. Although he accepts the deep structures implicit in Chomsky and Lees, namely, that complements are dominated by the node S which is directly dominated by the node VP, while nominalizations are dominated by an S which is directly dominated by the node NP, Rosenbaum argued that constructions which had hitherto been considered nominalizations are complements on the (pro)noun it (the “it+S analysis”). That is, his analysis retains only complements, and differentiates between the two structures by the node NP, which dominates noun phrase complements but not verb phrase complements.

This is the only type of noun complements with which Rosenbaum’s analysis concerns itself. He justifies the it+S analysis on the grounds that “the pronoun ‘it’ may appear in sentence initial position just in case the ‘that’ phrase appears at the end of the sentence. Furthermore, the pronoun may not appear when the ‘that’ phrase is in sentence initial position”.

He cites the following examples in support of his observation:

(1) (a) 1. *Columbus demonstrated that the world is not flat.*

---

1 See P. Rosenbaum, *Grammar of Predicate Complement Constructions*.
2 See P. Kiparsky and C. Kiparsky, “Fact”. The analysis proposed by R. Stockwell, et al., “Nominalization”, is not discussed here in detail because its authors accept the analysis proposed by the Kiparskys.
3 See N. Chomsky, “A Transformational Approach to Syntax”.
5 P. Rosenbaum, incidentally, is careful to distinguish between this noun, which underlies the so-called “expletive” or “anticipatory” it and the third person pronoun it.
2. That the world is not flat was demonstrated by Columbus
3. It was demonstrated by Columbus that the world is not flat.
(b) 1. That the doctor came at all surprised me.
2. It surprised me that the doctor came at all.
(c) 1. *It that the world is not flat was demonstrated by Columbus.
2. *It that the doctor came at all surprised me.

He goes on to say that “these facts suggest that it is the pronoun which determines the application of a T. rule moving the ‘that’ clause to the end of the sentence”. This rule has been called EXTRAPOSITION, a term I shall also use here.

The it+S analysis has been criticized by various linguists. Thus, e.g. Stockwell, et al.,⁷ argue that the it of extraposition (also called “anticipatory it”) cannot be a deep structure formative because it does not contribute to the meaning of the sentence and because its occurrence and position are always predictable, since the anticipatory it appears to take the place of the extraposed sentence.⁸ Despite these clearly valid criticisms, it seems to me that Rosen-⁷

See R. Stockwell, et al., “Nominalization”.
⁸ There are two positions from which extraposition is possible: subject and object. The it replacing an extraposed sentential subject is predictable in English because English sentences must have a subject. The verbs allowing or demanding extraposition from object are all factive; cf.

\[
\begin{align*}
\text{John} & \begin{cases}
\text{regretted} \\
\text{preferred} \\
\text{hated} \\
\text{loved} \\
\text{liked} \\
\text{disliked}
\end{cases} \\
& \left\{ \begin{array}{c}
\text{the fact} \\
\text{it}
\end{array} \right\} \text{ that Fred knew the answer.}
\end{align*}
\]

This observation supports my claim that the anticipatory it is a surface structure realization of the head noun (in this case, fact). Because, as will be shown in sections 3.2 and 3.3, below, extraposition precedes the rule of head noun deletion (including fact deletion), there seems to be an optional rule which replaces the head noun by it, if the sentential complement has been extraposed, while the rule deleting the head noun can be applied only if the sentential complement has not been extraposed. Needless to say, verbs like love, hate, etc. are marked for obligatory extraposition of the complement, as in any other treatment of these verbs.
baum's basic insight concerning head nouns for extraposable clauses is correct. Transformational-generative work since 1965 has pointed out that embedded sentences other than nominalizations (Rosenbaum's "noun phrase complements") can also be extraposable provided that these structures have a head noun and are complete sentences (i.e. still dominated by S). Thus, e.g. Ross\(^9\) points out that relative clauses can be extraposable, as long as they are not reduced.

(2) (a) The vase broke which was brought back from India by your grandfather.
(b) *The vase broke brought back from India by your grandfather.

Kiparsky and Kiparsky pointed out that sentential complements on the noun fact can also be extraposable:

(3) The fact is relevant that the accused was seen at the scene of the crime.

and, of course, other nouns taking sentential complements also allow extraposition; e.g.

(4) (a) The idea occurred to Bill that he should hit John.
(b) The proposal was made that we should take to the hills.

Part of the exposition in the main part of this work will be concerned with showing that, while the \(it+S\) analysis was incorrect in positing an \(it\) in the deep structure, extraposable complement structures do have a head noun in the deep structure, determining the applicability of extraposition. The anticipatory \(it\) is the surface structure reflex of these deletable head nouns.\(^{10}\)

3.0.2 Kiparsky and Kiparsky

As was indicated earlier (see section 1.4), the Kiparskys reanalyzed


\(^{10}\) See sections 3.2, 3.3 and 5.1.2, below, for further discussion.
Rosenbaum's $it+S$ structures into factive and non-factive complements. That is, they showed that some of the complements which were analyzed by Rosenbaum as having $it+S$ structures are better accounted for if we assume the noun *fact* as their head noun, instead of the (pro)noun *it*. Thus the Kiparskys find that the following verbs, nouns, and adjectives take "factive" and "non-factive" subjects or objects.\(^{11}\) (That is, the factives are assumed to have a noun

\(^{11}\) As pointed out by the Kiparskys, the feature [+FACT], as well as the label "factive", are really short-hand for a presupposition on the part of the speaker, namely that the embedded sentence is true. Nonfactives, marked with the feature [-FACT], therefore, imply that there is no such presupposition on the part of the speaker. This presupposition is reflected by the (possible) presence of the head noun *fact* on the embedded sentence. The claim concerning the presupposition of the embedded sentence can perhaps be clarified by the following considerations: It has been noted by various philosophers and linguists (see, for example, J. Austin, *Philosophical Papers*; J. McCawley, "Where do Noun Phrases Come From", [Jacobs and Rosenbaum, *Readings in English Transformational Grammar*, Boston, Mass., Ginn & Co., 1970]), that presuppositions cannot be negated or questioned, at least not by normal methods of negation or interrogation. Thus, e.g. in a sentence like

(i) (a) Charles kissed a pretty blond last night.

the speaker presupposes that there exists a person named Charles, and that the hearer knows him. Now, negatives or interrogatives on this sentence, like,

(i) (b) Charles didn't kiss a pretty blond last night.

(c) Did Charles kiss a pretty blond last night?

do not imply that there is no person named Charles (i.b), or question his existence (i.c). Similarly, in sentences like

(ii) (a) It is exciting that Mildred saw a unicorn last night.

the speaker presupposes that Mildred did, indeed, see a unicorn last night. Note that negatives and interrogatives like

(ii) (b) It isn't exciting that Mildred saw a unicorn last night.

(c) Is it exciting that Mildred saw a unicorn last night?

do not imply that Mildred didn't see a unicorn last night (ii.b), or question whether she did see one. They only negate that or question whether this fact was exciting. Note, incidentally, that the speaker's presupposition does not need to correspond to "real world truth" as exemplified in (ii). That is, Strawson's notion (discussed in his paper, "Truth", quoted earlier) that "true propositions are facts" is another example of confusing the real world and its linguistic representation.
fact in the deep structure, which takes a sentential complement, while the non-factives are assumed to take sentential subjects and objects.):

(5) with factive subjects: with non-factive subjects:

- significant
- odd
- tragic
- exciting
- relevant
- matters
- counts
- makes sense
- suffices
- amuses
- bothers

- likely
- sure
- possible
- true
- false
- seems
- appears
- happens
- chances
- turns out

with factive objects: with non-factive objects:

- regret
- be aware (of)
- grasp
- comprehend
- take into consideration
- take into account
- bear in mind
- ignore
- make clear
- mind
- forget (about)
- deplore
- resent
- care (about)

- suppose
- assert
- allege
- assume
- claim
- charge
- maintain
- believe
- conclude
- conjecture
- intimate
- deem
- fancy
- figure
- know
- realize

12 The Kiparskys note that know and realize are semantically factive but syntactically non-factive.
It is claimed by the Kiparskys that the following facts are accounted for by assuming that sentences embedded under factive matrix verbs have the head noun \textit{fact}:

1. All of these verbs take either a \textit{that} clause or a gerundive construction.
2. The (head) noun \textit{fact}, which is assumed in the deep structure of these clauses, can be deleted without change in either meaning or syntactic behavior. This is said to be due to the presupposition of the speaker about the truth of factive clauses.
3. The assumption of the head noun \textit{fact} explains a number of syntactic facts, otherwise difficult to explain; e.g. raising rules are not possible with factives.
4. Rosenbaum's \textsc{for-to} clauses do not occur with the head noun \textit{fact}.
5. Sentential complements on the noun \textit{fact}, because they are presupposed to be true, cannot be in the future, nor can they be in the subjunctive.

There is no doubt that the analysis of factive complements proposed by the Kiparskys has greater explanatory power than does Rosenbaum's \textsc{it+}\textsc{s} analysis. However, there are several questions left unanswered by the former analysis. The most important of these are the following. First, the two cross-classifying features \ [+/-\textsc{emot}] and \ [+/-\textsc{fact}], assumed by the authors as short hand features to explain both the meaning and the syntactic behavior of complementation, are simply not enough to account for all of the semantic and syntactic facts. This claim will be discussed in detail in section 3.1.2. Second, there are a number of other nouns which can occur as head nouns of sentential complements, and these nouns exhibit the same semantic and syntactic properties as does \textit{fact}, so that these should also be assumed to be in the deep structure of the complements in question. The interesting fact there is that these nouns are exactly those which are used for the description types in section 2.2 (plus a few others of very restricted distribution). Third, if the claims made by the Kiparskys are examined in any detail
sections 3.2 and 3.4), it can be shown that there are various problems inherent in any analysis which does not distinguish between the description types of the embedded sentences; problems which can be overcome quite easily and naturally if we adopt an analysis based on the description types.

In short, then, while I agree with the Kiparskys that the division of *that* clauses into factives and non-factives is correct, I also believe that there are other generalizations about *that* clauses and gerundive clauses which can and should be made.

3.0.3 Types of Head Nouns Taking Complements

There are two types of nouns which take complements. The first of these is de-verbal or de-adjectival. Because they behave in much the same way as do their underlying verbs or adjectives with respect to complementation (as has been observed by many other grammarians) and because the underlying verbs, at least, are listed in Rosenbaum, this noun will not be discussed here. The second type of nouns taking complements is part of a set of nouns which do not have underlying verbs or adjectives. These nouns include the nouns which we noted already in the classification of the simplex sentences in Chapter 2. For the convenience of the reader, I will list some of them here, specifically those which appear to have some importance for the analysis of complementations.

\[(6)\] PROPOSITIONAL EVENTIVE STATATIVE

<table>
<thead>
<tr>
<th>PROPOSITION</th>
<th>EVENTIVE</th>
<th>STATATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>proposition</td>
<td>event</td>
<td>state</td>
</tr>
<tr>
<td>fact</td>
<td>process</td>
<td>property</td>
</tr>
<tr>
<td>idea</td>
<td>action</td>
<td></td>
</tr>
<tr>
<td>notion</td>
<td>act</td>
<td></td>
</tr>
<tr>
<td>position</td>
<td>activity</td>
<td></td>
</tr>
</tbody>
</table>

The rest of this chapter will be devoted to the discussion of embedded propositional complements and noun phrases, while Chapters 13 See P. Rosenbaum, *Grammar of Predicate Complement Constructions*, 120ff.
3.1 RESTRICTIONS BETWEEN MATRIX VERBS AND THEIR COMPLEMENTS

A few moments' thought will convince anyone that there are strong restrictions on the type of sentence (in the sense of Chapter II) that can be embedded as complements or nominalizations. In Chapter II it was shown that there are four major sentence types:

- Declarative
- Interrogative
- Imperative
- Performative

In this section, I will investigate the restrictions between matrix verbs and their embedded sentences, in terms of the major sentence types of the embedded sentences.

3.1.1 The Data

It can easily be shown that matrix verbs allowing embedded sentences at all are sensitive with respect to which sentence type they allow to be embedded as their subject, object, or object of preposition. Most verbs, in fact, allow only propositions. Thus, factive verbs and verbs of belief and assertion, allow only embedded propositions, but no other sentence types. Since embedded propositions have the form of a that clause, the following are grammatical:

(7) (a) That John ate the meat surprised Alan.
    (b) Fred regrets that John ate the meat.
    (c) Harry thinks that John ate the meat.
    (d) Gwen declared that John ate the meat.

If another sentence type is inserted, the resulting string is not grammatical. I will present interrogatives in (8), imperatives in (9), and performatives in (10):
(8) (a) *Whether John ate the meat surprised Alan.\(^{14}\)

(b) *Fred \(\begin{align*}
\text{regrets} \\
\text{thinks} \\
\text{declares}
\end{align*}\) whether John ate the meat.

(9) (a) *That John eat the meat surprised Alan.

(b) *Fred \(\begin{align*}
\text{regrets} \\
\text{thinks} \\
\text{declares}
\end{align*}\) that John eat the meat.

(10) (a) ??That I hereby sentence you to six months surprised Alan.

(b) *Fred \(\begin{align*}
\text{regrets} \\
\text{thinks} \\
\text{declares}
\end{align*}\) that I hereby sentence you to six months.

The fact that verbs of assertion are nearly acceptable with a following imperative is related to the fact that verbs of assertion can also report direct quotes; i.e. sentences like:

\(^{14}\) Although sentences like

\(\begin{align*}
\text{Where} \\
\text{Why} \\
\text{How} \\
\ldots
\end{align*}\) John went surprised us.

are grammatical, a moment’s reflection will show that the embedded sentences in (a) are not indirect questions (cf. also R. Lees, *Grammar of English Nominalization*, 57-62). Instead, the \(WH\) forms appear to be reduced from semantically nearly empty nouns plus a restrictive relative clause. That is, the sentences underlying those in (a) appear to be:

\(\begin{align*}
\text{place to} \\
\text{reason for} \\
\text{way in} \\
\ldots
\end{align*}\) which John went surprised us.

are quite possible. Notice that the last two examples in (11) are not part of the linguistic system of English. This indicates that direct quotations can include anything marked [+VERBAL], [+COMMUNICATION], and that the item quoted need not be marked [+LINGUISTIC].

The near acceptability of performatives with factive verbs also needs to be explained. The Kiparskys state that an embedded clause is a fact if and only if the speaker presupposes that this clause is true. As Austin points out, performatives are actions. However, as soon as an action has been performed, its performance becomes a fact, and can therefore be presupposed to be true by the speaker who witnesses it. In a similar way, as soon as an event has occurred, its occurrence becomes a fact, and can be presupposed to be true by the speaker.

Other verbs allow different sentence types to be embedded. Thus, verbs of command allow imperatives, but not propositions or interrogatives.

Verbs like ask, query, etc. allow interrogatives. There is another
verb, call it *ask₂*, which is a verb of command, and therefore takes imperatives. This fact can be captured by a unified dictionary entry with two disjunctive features:\(^{18}\)

\[\begin{align*}
(12) \text{(b)} & \\
\text{John} & \begin{cases} 
\text{queried} \\
\text{asked₁} 
\end{cases} & \begin{cases} 
\text{whether Fred ate the meat.} \\
*\text{that Fred eat the meat.} \\
*\text{that Fred ate the meat.} \\
*\text{that I hereby sentence you to six months.}
\end{cases}
\end{align*}\]

(c) *John asked₂ that Fred eat the meat.*

Verbs like *know* take propositions and interrogatives, but not imperatives or performatives. This may mean that there is also a *know₁* and *know₂*, although the difference with *know* is not as clear as that with *ask₁* and *ask₂*.

\[\begin{align*}
(12) \text{(d)} & \\
\text{John knows} & \begin{cases} 
\text{that Fred ate the meat.} \\
\text{whether Fred ate the meat.} \\
*\text{that Fred eat the meat} \\
*\text{that I hereby sentence you to six months.}
\end{cases}
\end{align*}\]

Notice, first of all, that the interrogative after *know* has an altogether different implication from the interrogative after *ask*. In the latter case, the speaker is reporting an indirect quote; with *know*, however, the speaker indicates that the subject knows the answer to the question. In the second place, the performative sentence embedded under *know* is nearly acceptable. This appears to be due to the fact that *know* is semantically factive, and the relationship between actions and facts noted above.

The data displayed in examples (7) through (12) indicate that a grammar must account for the restrictions between matrix verbs and their embedded clauses. It is clear that previous analyses have attempted to do this. Thus, e.g. Rosenbaum has a set of what he

\(^{18}\) See, for example, section 2.2.3, above, or my "Words and Lexical Entries" (Papers in Linguistics 5.2) for a discussion of this problem.
EMBEDDED PROPOSITIONS

Previous analyses of complementation and nominalization can be said to be of two major types: purely syntactic ones like that of Rosenbaum, and semantically based ones like that of the Kiparskys. With either type of analysis, syntactic features are necessary to "take care of" the minor irregularities, but the semantically-based analysis proposed by the Kiparskys is a first step in the direction of explaining the major restrictions between matrix verbs and their embedded sentences. Let me outline how the two analyses under consideration propose to assure that the grammar generates all and only the appropriate surface forms of the embedded sentences.

Rosenbaum posits features like \([+/—\text{THAT}]\), \([+/—\text{FOR-TO}]\), \([+/—\text{POSS-ING}]\), etc. to be part of the set of syntactic features of matrix verbs in the lexicon. After lexical insertion and at the appropriate point in the derivation, his complementizer spreading rules spread these features onto the embedded sentence, create morphemes from the features, and insert them at the appropriate places in the embedded sentence. As far as I can see, there are two major problems with this proposal. First, there is no reason why a given matrix verb should have a particular set of syntactic features of this type rather than any other set. In other words, the analysis proposed by Rosenbaum is not well motivated because it makes it appear that the surface form of embedded sentences is an accidental, non-predictable property of the matrix verb. The second argument against a purely syntactic analysis like that of Rosenbaum has to do with embedded sentences whose surface form does not contain a subject. There are two issues to be considered in this argument. First, there is the problem of identity of the embedded subject and its deletion; second, there is the problem of meaning. (As this will be discussed in detail in sections 3.2 and 4.2, I will merely outline the problem here.)

Concerning the problem of identical subjects and their deletion,
note that matrix verbs, from a syntactic viewpoint, fall into two cross-classifying categories:

1. The subject of the embedded sentences must be, may be, or must not be identical with a noun phrase of the matrix sentence.
2. Deletion of the embedded subject must occur, may occur, or must not occur.¹⁹

¹⁹ Verbs with obligatory embedded subject identity include try, attempt, etc.; cf.

(i) (a) \[ \text{John tried} \{ \begin{align*}
& \text{doing it.} \\
& \text{to do it.}
\end{align*} \} \]
\[ \text{*for Fred to do it.} \]
\[ \text{*Fred's doing it.} \]
\[ \text{*that Fred should do it.} \]

Verbs with optional embedded subject identity include want, expect, etc.; cf.

(i) (b) \[ \text{John wanted} \{ \begin{align*}
& \text{to do it.} \\
& \text{Fred to do it.}
\end{align*} \} \]

Verbs with obligatory embedded subject non-identity include command, etc.; cf.

(ii) (c) \[ \text{John commanded} \{ \begin{align*}
& \text{Fred to do it.} \\
& \text{to do it.}
\end{align*} \} \]
\[ \text{*John/himself to do it.} \]

(Note that John commanded to do it does not imply that John is the agent of the embedded sentence, but that someone else is.)

Verbs with obligatory deletion of an identical embedded subject include want, try, etc. (i.e. they cross-classify with the list above); cf.

(ii) (a) \[ \text{John tried} \{ \begin{align*}
& \text{to do it.} \\
& \text{*himself to do it.}
\end{align*} \} \]

Verbs with optional deletion of an embedded identical subject include persuade, expect, etc.; cf.

(ii) (b) \[ \text{John expected} \{ \begin{align*}
& \text{to do it.} \\
& \text{that he would do it.}
\end{align*} \} \]

(c) \[ \text{John persuaded Fred} \{ \begin{align*}
& \text{to do it.} \\
& \text{that he should do it.}
\end{align*} \} \]

Verbs with obligatory non-deletion of an identical embedded subject include the verbs of belief; cf.

(ii) (d) \[ \text{John believed} \{ \begin{align*}
& \text{himself to be intelligent.} \\
& \text{*to be intelligent.}
\end{align*} \} \]
\[ \text{*being intelligent.} \]
Within any purely syntactic analysis, these are, again, accidental properties of the matrix verb and must, therefore, be captured by two syntactic features, something like [+/-IDENT SUBJ] and [+/-EQUI NP DEL]. I intend to show in Chapter 4 that, far from being accidental, the two cross-classifying categories above are due to the fact that different semantic classes to which matrix verbs belong take embedded events, actions, states, etc. Their syntactic behavior with respect to identity and deletion of embedded subject (among others) can be predicted on the basis of the semantic class of the matrix verb, as long as the grammar takes into consideration the description type of the embedded sentence.

Concerning the problem of meaning, Rosenbaum is forced to derive nominalizations and complements in the form of that clauses, FOR-TO constructions, and POSS-ING constructions (his terms) from the same deep structure. It was shown in section 1.4, however, that there are meaning differences associated with the different types of complements and nominalizations, and even with complements with the same surface form (see footnote 8, Chapter I). In fact, it is the main contention of this work that there are such meaning differences, and that we can account for the surface form of embedded sentences only by accounting for their semantic differences in terms of the description type of the complement or nominalization.

The Kiparskys posit two cross classifying semantico-syntactic features [+/-FACT] and [+/-EMOT] to explain the semantic and syntactic properties of complements and nominalizations. The feature [+FACT] is assumed to be part of the semantic features of factive matrix verbs; and the feature (-FACT) is assumed to be part of the semantic features of non-factive matrix verbs. The feature [+EMOT] is assumed to be part of the semantic features of matrix verbs of complements "to which the speaker expresses a subjective, emotional, or evaluative reaction. The class of predicates taking emotive complements includes ... in general all predicates which express the subjective value of a proposition rather than knowledge about it or its truth value". The feature [-EMOT] is

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20 Kiparsky and Kiparsky, "Fact", 169.
assumed to be part of the semantic features of non-emotive verbs.

The syntactic consequences of the feature [+FACT] were noted on page 69 above. The syntactic consequences of the features [+EMOT] and [—FACT] are, according to the Kiparskys, embedded sentences with the surface form for NP to VP embedded under matrix verbs with the features [+EMOT] and [—FACT]. The latter is said to be needed because FOR-TO complements cannot take the head noun fact, cf.

(13) (a) (*The fact) for Mildred to see a unicorn surprised her husband.

But now note that the embedded sentence in (13.a) entails the speaker’s presupposition that Mildred did, indeed, see a unicorn. As pointed out by Lees\(^{21}\) this reading is made even clearer if the construction contains a have cf.

(13) (b) (*The fact) for Mildred to have seen a unicorn surprised her husband.

Examples of this kind indicate that the factive reading (the speaker’s presupposition of the truth) of the embedded sentence is independent of whether the (head) noun fact can occur with the embedded sentence, but is determined solely by the semantic properties of the matrix verb.\(^{22}\)

With respect to matrix verbs marked [—FACT] and [—EMOT], the analysis proposed by the Kiparskys faces problems similar to those faced by Rosenbaum’s analysis, because the verbs thus marked make up such a heterogeneous group (one cannot call them a class), that a number of additional syntactic features are needed to make “things work out right”. In particular, the matrix verbs must be marked as to whether they allow or demand embedded subject identity or non-identity and embedded subject deletion. That is,

\(^{21}\) Lees, Grammar of English Nominalizations, 71ff; see also section 1.2, above.

\(^{22}\) Examples like those in (13) indicate that the head noun fact can only occur with a factive matrix verb and a complement on the noun proposition or event (i.e. a that clause or a gerundive). That is, the restrictions on the noun fact cannot be predicted from the factivity of the matrix verb alone. This question will be discussed in detail in section 3.2.
the matrix verbs must be marked with features like 

\[+/—\text{IDENT SUBJ}\] and \[+/—\text{EQUI NP DEL}\]. The objections to this solution were already noted. In addition, the rule-ordering necessitated by this classification involves various ordering problems, including one case of an ordering paradox, which throws the whole analysis into question. The ordering problems will be taken up in detail in section 3.2.

For these reasons, I propose that the matrix verbs must be subcategorized by semantic features which contain the description label discussed in Chapter 2. That is, matrix verbs will have features of the form \[+\text{PROP}\], \[+\text{FACT}\], \[+\text{PERF}\], \[+\text{EVENT}\], \[+\text{ACTION}\], \[+\text{STATE}\], \[+\text{PROPERTY}\], etc. Let me explain how these features will assure generation of all and only the appropriate surface forms of complements and nominalizations.

To my understanding, this is best done by allowing free generation under the embedded \(S\) node and blocking unacceptable strings by the rules of semantic interpretation, since these rules must have all the relevant information for blocking these strings in any case, and must also be able to block sentences like *John drank the meat.* What I have in mind is something like this. If the characterization of the sentence types described in Chapter 2 is made part of the semantic rules, then these rules can operate on a given sentence and decide to which type it belongs. In order to derive the correct semantic reading of the sentence, the rules which derive the reading must contain information of the following type: a given verb is or is not a verb of action, or it is or is not generic, a given subject is or is not an agent, a given sentence can be either true or false, etc. It should, then, be a fairly simple matter to require that the semantic rules, after they have found this information in the deep structure of the sentence, operate on the characterizations of the sentence types, find the correct one for the sentence they are processing, and see whether the relevant feature of the matrix verb agrees with the type of the embedded sentence. If there is agreement, then nothing happens; if there is disagreement, however, the sentence is blocked. Because a sentence can, and usually does, belong to more than one
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type, this procedure must be applied once for each sentence type in the list — a relatively small matter, since there are only six sentence types relevant for complementation.

There appears to be a problem in determining the surface form of complements embedded under matrix verbs taking more than one description type (i.e. more than one type of complement). Thus, e.g. there are verbs like surprise, which can take both events and propositions, cf.

(14) (a) \[
\begin{align*}
&\text{Harry's coming late again} \\
&\text{That Harry came late again}
\end{align*}
\] surprised us.

The question, of course, is how to avoid generating such strings as

(14) (b) \[
\begin{align*}
&\text{*The event that Harry came late again} \\
&\text{*The proposition of Harry's coming late again}
\end{align*}
\] surprised us.

instead of, or in addition to, the grammatical

(14) (c) \[
\begin{align*}
&\text{The proposition that Harry came late again} \\
&\text{The event of Harry's coming late again}
\end{align*}
\] surprised us.

This problem can be solved fairly easily, however, if we assume that verbs like surprise are marked for both embedded events and propositions in the lexicon. Obligatory specification will then choose one of these features during lexical insertion, and thus assure generation of sentences like those in (14.c) and prevent generation of sentences like those in (14.b).

So far, we have only considered restrictions on complements with head nouns. Note, however, that there are also such restrictions on

23 Notice that embedded sentences other than complements must also be subcategorized according to their description type. Thus, e.g. only propositions can be embedded as relative clauses, cf.

(a) the man who had left was tired.
(b) *the man who whether left was tired.
(c) *the man whom I hereby sentence to six months was led away.
(d) *the man who eat the meat left.
complements without head nouns. Thus, for example, infinitives are actions (see section 4.2.5. for detail), but their matrix verbs do not take the (head) noun action; cf.

(15) (a) John expected (*the action) to go.
(b) It is dangerous (*the action) to swim here.

while subjectless gerunds are actions and take the head noun action (cf., the action of swimming here). Moreover, some matrix verbs take both gerunds and infinitives, others take only one of these; cf.

(15) (c) John decided
      \begin{tabular}{l}
        to go. \\
        on going.
      \end{tabular}

(d) John expected
    \begin{tabular}{l}
      to go. \\
      *going.
    \end{tabular}

(e) John insisted
    \begin{tabular}{l}
      *to go. \\
      on going.
    \end{tabular}

Thus, we must restrict the surface forms of some complements with head nouns and some complements without head nouns. Since all operations on complements must be performed on the cycle of the matrix verb (and head noun), it should prove simplest to let the actual surface form be determined by the features on the matrix verb or on the head noun (where necessary). The syntactic restrictions will be determined by redundancy rules on either the head nouns or the matrix verbs. Thus the fact that event takes gerundives is a general fact to be captured by a redundancy rule, as is the fact that decide takes both infinitival and gerundive actions but not propositions or events.²⁴

3.1.3 The Nouns Characterizing Embedded Propositions

Because the sentence types discussed here and in Chapter 2 were

²⁴ The difference between infinitival and gerundive actions, i.e. the fact that gerundives but not infinitives take the head noun action, can be captured by the difference in their deep structure. Infinitivals are sentential noun phrases while gerundives are sentential complements on the head noun action. For a detailed discussion, see section 4.2.5, below.
defined by their co-occurrence restrictions with the nouns describing the sentence types, one should expect that matrix verbs taking complements of a given type also take the noun describing the type of complement. And with very few exceptions they do. Thus, verbs allowing propositions also take the noun proposition (16.a), verbs allowing interrogatives also take the noun question (16.b), and factives take the noun fact (16.c,d). Furthermore, verbs taking gerundive clauses with a subject take the nouns event or process (16.e), while verbs whose complement has undergone the rule of EQUINE DEL take the nouns state, action, or process (16.f).

(16) (a) John \{believed \ asserting \} the proposition.
(b) John asked the question.
(c) The fact \{surprised \ annoyed \} John.
(d) John \{regretted \ resented \ regretted \} the fact.
(e) John \{saw \ expected \ demand \} the event/process.
(f) John \{regretted \} the action.

As far as I have been able to ascertain, there are only two minor types of exceptions to this observation. The first and largest is the whole class of verbs of belief, which take propositions, but do not take the noun proposition.\(^{25}\)

\(^{25}\) Note that there are two verbs believe. One, call it believe\(_1\), does not take any head nouns, and has much the same meaning as does the verb think, i.e. "a belief arrived at by oneself". The other, call it believe\(_2\), takes various head nouns such as proposition, claim, assertion, etc.; cf.

(a) John believes\(_2\) the proposition\{claim\}assertion that Harry is a fink.

and has the meaning "to believe something someone else has said". These head nouns appear to be deletable, since sentences like:

(b) John believes that Harry is a fink.
Thus, there are no sentences like:

(17) (a) \[
\begin{align*}
*\text{John} & \left\{ \begin{array}{l}
\text{thinks} \\
\text{believes}_1 \\
\text{feels} \\
\vdots
\end{array} \right. \\
& \text{the proposition.}
\end{align*}
\]

The second class of exception concerns a few verbs of assertion. Thus, while all the other verbs of assertion allow the noun proposition in object position, the verbs say, declare, and claim do not; cf.

(17) (b) \[
\begin{align*}
\text{asserted} \\
\text{stated} \\
\text{John} & \left\{ \begin{array}{l}
*\text{declared} \\
*\text{claimed} \\
*\text{said}
\end{array} \right. \\
& \text{the proposition.}
\end{align*}
\]

There is an apparent exception with verbs like report, deny, etc. As was noted by the Kiparskys, there is a handful of verbs which are indeterminate with respect to factivity. That is, these verbs are marked \([+/-\text{FACT}]\) in the lexicon, and hence do not allow fact deletion. The sentence pairs below are not paraphrases, and (18a) is not derived from (18.b) by fact deletion:

(18) (a) John reported/denied the fact that his father was in town.
(b) John reported/denied that his father was in town.

Now, however, note that the following relationship holds between (potential) matrix verbs, nouns like proposition, event, action, etc. and embedded sentences. Any verb taking one of these nouns can take an embedded sentence of the same type as the noun; the noun are ambiguous. The proposition in the that clause in (b) can either be John's own belief, or that of someone else, which John has accepted. Since sentences like:

(c) John believes Harry to be a fink.

can only mean that the proposition in the complement is John's own belief, it is clear that the complements on believe$_2$ obey the Complex NP Constraint (i.e. do not allow RAIS TO OBJ), as we would predict.
can also occur as head noun of the embedded sentence. Consider the following sentences:

(18) (c) John \{ believed asserted \} the proposition that Harry is a fink.

(d) John asked (the question) whether Fred was here.

(e) (The fact) that Peter saw a unicorn \{ surprised amazed \} us.

(f) John \{ regretted \} saw (the event of) Howard’s coming.

(g) John regretted (the action of) coming.

While the Kiparskys’ observation concerning factive that clauses and the head noun fact is today fairly well accepted (and it is not a very long step from this observation to the realization that verbs allowing factive clauses also allow the simple noun fact), the generalization concerning the sentence types, head noun, and simple nouns allowed by most matrix verbs has, to my knowledge, never been formulated anywhere. I believe that this is a significant generalization because it allows us to systematize the syntax of the rest of complementation (i.e. those complements which the Kiparskys are forced to treat together under non-factive complements).

If these nouns are assumed to be in the deep structure, part of the semantic readings of the various types of complements is automatically accomplished by the semantic rules in the sense that the sentence type of any complement must match the head noun. Equally important, the syntactic behavior of the complements can be predicted. That is, not only does the surface form of the complement follow directly from the head noun, but it also follows directly from the head noun that the raising rules cannot apply to them: the former because the head noun and the sentence type of the complement must be identical; the latter because complements on head nouns are protected by the Complex NP Constraint.\(^{26}\) It should be

\(^{26}\) See J. Ross, “Constraints on Variables in Syntax,” 127ff., where he states:
stressed here that unless we posit a head noun for these constructions, the fact that they cannot undergo any of the raising rules must be captured by an exception feature, i.e. cannot be explained but must be treated as an exception. In addition, if we posit these head nouns as part of the deep structure of the complements in question, the semantically-based redundancy rules outlined in section 3.1.2 will allow us to do away with such features as [+/-IDENT SUBJ] and [+/-EQUI NP DEL], and thus with the problems associated with these features. Lastly, the proposed head nouns and the semantically-based redundancy rules appear to be a natural way of overcoming some of the ordering problems entailed in other semantically-based explanations of complementation, such as that proposed by the Kiparskys.

In the remainder of this section, I will discuss and exemplify these claims. Thus, verbs of assertion were shown to take embedded propositions and, with the exception of say, claim, and declare, shown to take the noun proposition. Therefore, these verbs should also take proposition as a head noun, followed by an embedded proposition, as they do; cf.

(19) (a) John \(\{\text{asserted} \) stated \) the proposition that Harry is a fink.

Question verbs were shown to take both embedded interrogatives and the simple noun question. They should, therefore, also take question as a head noun plus an embedded question, as they do; cf.

(19) (b) Fred \(\{\text{asked} \) \) the question whether John had eaten the meat.

The Complex NP Constraint:

No element contained in a sentence dominated by a noun phrase with a lexical head noun may be moved out of that noun phrase by a transformation.

It may be worth pointing out that the restriction to "lexical" head nouns in the quote above will be shown to be unnecessary, because the \(it+S\) analysis will be rejected, and all complements on "lexical" head nouns proposed here obey the Complex NP Constraint.
The verbs of the senses clearly take eventive sentences, since events can be seen, heard, felt, etc. They also take the noun event, both as a simple noun and as the head noun of an eventive (gerundive); cf.

(19) (c)  
  \[
  \begin{aligned}
  \text{Harry} & \quad \text{heard} \\
  & \quad \text{saw} \\
  & \quad \text{felt} \\
  \end{aligned}
  \]
  \text{the event of Bill's coming.}

Verbs like see and hear are rather complex. In the first place, both take that clauses with the head noun proposition; as in, e.g.

(19) (d)  
  \[
  \begin{aligned}
  \text{Jim} & \quad \text{heard} \\
  & \quad \text{saw} \\
  \end{aligned}
  \]
  \text{the proposition that children should be seen and not heard.}

These propositions are clearly concrete in the same sense as, e.g. the proof is on the envelope. That is, Jim saw the proposition in print somewhere, or he heard someone utter it. Furthermore, these verbs also allow that clauses without the head noun proposition, as in, e.g.

(19) (e)  
  \[
  \begin{aligned}
  \text{Jack} & \quad \text{saw} \\
  & \quad \text{heard} \\
  \end{aligned}
  \]
  \text{that Bill came}

These sentences have two readings. Either Jack saw or heard the event (i.e. Bill's coming), and from this he adduced "that Bill came", or he saw or heard some evidence for the truth of this proposition, including an utterance by someone to the effect that Bill came.

Gerundive subjects, analyzed by the Kiparskys as factive gerundives, are also events, and they allow the head noun event; cf.

(20) (a)  
  \[
  \begin{aligned}
  \text{The event of Bill's coming} & \quad \text{annoyed} \\
  & \quad \text{surprised} \\
  & \quad \text{amazed} \\
  \end{aligned}
  \]
  \text{Aunt Helen.}

The reason for the factive analysis of gerundives appears to be the following. Facts are presupposed to be true. Events, of course, are neither true or false, they simply occur. However, once an event has occurred, it is true that it has occurred, and its occurrence can
therefore be pre-supposed to be true. Note, in this connection, that although gerundives with or without the head noun event fit into Vendler's test frame for events, gerundives with the head noun fact do not. Thus we get the following sentences and strings:

\[
(20) \text{(b)} \begin{cases}
\text{The event of} \\
\text{fact of}
\end{cases} \quad \text{John's coming occurred at ten o'clock.}
\]

Similarly, the factive, but not the gerundive, can act as the subject of is true,

\[
(20) \text{(c)} \begin{cases}
\text{The event of} \\
\text{fact of}
\end{cases} \quad \text{John's coming is true.}
\]

Actions are more complex, since not all matrix verbs taking embedded actions also take the (head) noun action. Briefly, matrix verbs taking infinitives describing actions do not take the (head) noun action. There appear to be three different ways in which an action can be related to the matrix sentence. The first of these expresses an action on the part of some unspecified agent, the second is neutral between an unspecified agent and the matrix subject as agent, while the third implies that the agent is the matrix subject.\(^27\)

Thus, sentences like:

\[
(21) \text{(a)} \begin{cases}
\text{saw} \\
\text{requested}
\end{cases} \quad \text{the action.}
\]

imply that this action was performed by an unspecified agent. Note that the matrix verbs here include the classes of the verbs of the senses, and the verbs of command and request as the semantic class for unspecified agents with actions. On the other hand, sentences like:

\[
(21) \text{(b)} \begin{cases}
\text{expected} \\
\text{liked} \\
\text{promised} \\
\text{...}
\end{cases} \quad \text{the action.}
\]

are neutral and simple imply an agent, either the matrix subject, or some unspecified agent. There is, however, one verb which clearly

\(^{27}\) This is the relationship usually captured by the ad hoc feature [+/-IDENT SUBJ].
implies that the action was on the part of the matrix subject, namely, perform; cf.

(21) (c) John performed the action.

The important fact about perform is that if it is embedded on another verb, the agent of the action is no longer unspecified, but is in the matrix sentence. If perform is embedded with a neutral verb, the implication is that the action was performed by the matrix subject; cf.,

(21) (d) \[
\begin{align*}
\text{John} & \quad \left\{ \begin{array}{l}
\text{expected} \\
\text{liked} \\
\text{promised}
\end{array} \right. \\
& \quad \to \text{perform the action.}
\end{align*}
\]

Verbs taking indirect objects must have the verb perform (i.e. there is no \textit{*John persuaded Bill the action}), and always imply that the matrix object is the agent to perform the action in the embedded sentence.\footnote{28}

(21) (e) \[
\begin{align*}
\text{John} & \quad \left\{ \begin{array}{l}
\text{persuaded} \\
\text{saw} \\
\text{commanded}
\end{array} \right. \\
& \quad \text{Bill (to) perform the action}
\end{align*}
\]

Lastly it should be pointed out that the head noun action does not allow a subject in its complement, while the head noun event demands a subject there. On the other hand, and related to this, the head noun action allows a possessive to precede it, while the head noun event does not; cf.

(22) (a) \textit{The action of} \{ \begin{array}{l}
\text{*John's eating the meat.} \\
\text{eating the meat.}
\end{array} \}

(b) \textit{The event of} \{ \begin{array}{l}
\text{John's eating the meat.} \\
\text{*eating the meat.}
\end{array} \}

(c) \textit{John's} \{ \begin{array}{l}
\text{action} \\
\text{event}
\end{array} \} \text{ of eating the meat.}

\footnote{28} In some dialects the verb promise is an exception to the generalization that matrix verbs with indirect objects plus embedded actions imply that the agent of that action is the matrix indirect object. That is, while (a) is grammatical for all dialects of American English, only speakers of some dialects accept (b):
Summarizing the evidence and discussion presented in this section so far, the situation with respect to predicting the surface form of embedded sentences appears to be the following: Verbs must be marked as to whether they take an embedded sentence, and as to whether that sentence occurs as the subject or object of the verb, or as the object of (one of) its preposition(s). With a few exceptions noted earlier, probably best captured by marking the matrix verbs with (negative) exception features in the lexicon, a verb taking an embedded sentence also takes an abstract noun identical with the description type of that embedded sentence under the NP node where the embedded sentence can occur. This noun can also occur as the head noun of a sentential complement of the same description type as the head noun. The presence of these head nouns in the deep structure can be used in determining the semantic reading of the sentence, and predicting the syntactic behavior of the complement. The head nouns can be deleted without a change in meaning or in the syntactic behavior.

The way in which the grammar captures the generalizations documented above depends, of course, on the particular model of the grammar. That is, as far as I can see at present, the explanation of complementation proposed here does not bring any new evidence to bear on the question of whether a grammar better captures the facts of language if it is in the form of what Chomsky calls the "modified standard theory", a case grammar, or generative semantics.

(a) Fred promised Bill that he would come.
(b) Fred promised Bill to come.

For those speakers who accept (b), the agent of to come is not Bill but Fred (i.e. not the indirect object, but the subject of the matrix sentence). This fact must be handled by an exception feature in any analysis of complementation with which I am familiar.

29 See N. Chomsky, "Some Empirical Issues in the Theory of Transformational Grammar", in Chomsky, Studies on Semantics in Generative Grammar (The Hague, Mouton and Co., 1972). The modified standard theory is very similar to the Aspects model, at least for my present purposes, and I shall use the terms interchangeably.

30 See, e.g. C. Fillmore, "Case for Case"; R. Stockwell, et al., Integration.

31 See, e.g. G. Lakoff, "Linguistics and Natural Logic", Synthese 22, 1, 2
Within the modified standard theory, we would posit a general redundancy rule of the form:

(23) If a matrix verb allows an embedded complement, the description type which characterizes the complement can also occur as either a head noun of the corresponding complement, or as a simple noun in the position where the complement can occur in the matrix sentence.

Under this proposal, the matrix verbs which do not allow the abstract noun (i.e. verbs of belief and some of the verbs of assertion) will be marked in the lexicon with an exception feature like [—RELATED NOUN]. It should be pointed out that verbs of assertion can also be used as performative verbs (see section 3.3, below). In this case, they do not take the head noun assertion, and therefore allow the raising rules to apply (since the Comples NP Constraint does not protect the embedded sentence); cf.

(24) \[
\begin{array}{l}
\text{I } \{ \text{claim, declare} \} \\
\text{this to be true.}
\end{array}
\]

Within a case grammar, the generalizations would be captured in essentially the same way as in the modified standard theory, so that case grammar does not differ in this respect from the standard theory.\(^3\)

Within a generative semantic grammar, the redundancy rules in (23) would be in the transformational component, perhaps in the form of a “realization” rule. That is, the head nouns would not be in the underlying structure, but would be realized from underlying abstract predicates. Embedded sentences without head nouns would probably have the same abstract predicate, but realization would be blocked in their case. As far as I can see, there should be

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\(^3\) Because case grammar attempts to capture certain semantico-syntactic generalizations in a way different from the modified standard theory, there is a general saving of lexical features in case grammar as opposed to the standard theory.
no difficulty in doing this, since every head noun is uniquely associated with a verb (predicate). (For details, see the characterization in section 2.3, number (43), pp. 61, 62, above.) These underlying predicates would, therefore, entail the semantic reading of the complements directly, and the grammar would thus not need the characterization in (43) (see section 2.3, pp. 61, 62 above) as a separate statement. A certain amount of evidence for a generative semantic analysis of these nouns can be found in the fact that the nouns can occur only in one of two environments: as head nouns of (sentential) complements, and as anaphoric nouns. This may indicate that these nouns are perhaps not in the lexicon at all.\(^{33}\)

An interesting proposal concerning the underlying structure of both relative clauses and sentential complements was made by S. Thompson,\(^{34}\) which is based on both case grammar and generative semantics. Because only part of Thompson's work is generally available, I will briefly outline her proposal here. For our purposes, we can say that Thompson is concerned with two questions in these works: the structure underlying relative clauses and complements, and the simplification of Phrase Structure rules. Let me take up the second point first. Thompson shows that in most T.G. analyses, the node "S" can recur in these environments:

\[
\begin{align*}
(25) & \quad (a) & S \quad (b) & NP \quad (c) & NP \\
& \quad S \quad S & \quad S & \quad S \\
& \text{and} & & & \text{it} \\
& NP & & NP & \\
& & S & & S \\
& & & & \\
\end{align*}
\]

33 Note that the anaphoric aspect of these nouns can be captured in any T.G. model of grammar. Thus, in the modified standard theory, the (proper) antecedent of the anaphoric noun will be the sentential complement, which is deleted by a pronominalization rule, since pronominalization always deletes repeated modifiers.

34 See S. Thompson, *On Relative Clause Structure in Relation to the Nature of Sentence Complexity* (Ohio State University, unpublished Ph.D. Disserta-
Here, (25.a) is the structure for conjunction, (25.b) and (25.c) those for sentential noun phrases,\textsuperscript{35} (25.d) that for relative clauses,\textsuperscript{36} (25.e) that for factive complements, and (25.f) that for verb (phrase) complements.

To reduce this veritable plethora of possible environments for the recursion of "S", Thompson proposes, following Fillmore and Stockwell, et al., to do away with (25.f) because the evidence for verb (phrase) complements is slight at best. Because the evidence for (25.c), the \textit{it+S} analysis, is equally slight, particularly once lexical head nouns are shown to be in the deep structure, she also rejects the structure in (25.c). In this, incidentally, she also agrees with Fillmore and Stockwell, et al. This leaves the structures in (25.a,b,d,e). She then argues that relative clauses and sentential

\textsuperscript{35} (25.b) is the structure assumed for sentential noun phrases in, e.g. R. Lees, \textit{Grammar of English Nominalization}, while (25.c) is the structure for noun phrase complements, which is Rosenbaum's term for sentential noun phrases (see \textit{Grammar of Predicate Complement Constructions}). The two structures are, thus, mutually exclusive.

\textsuperscript{36} Because of the problem of identity between the head noun and the "identical" noun phrase in the relative clause (the one which yields the relative pronoun), it is not at all clear what the deep structure of a head noun plus its relative clause should be. At issue here, in particular, are the quantifiers; for if quantifiers are assumed to be in the same sentence as the head noun, then the structure cannot be that in (25.d) because that structure implies identity of the whole noun phrase in the relative clause. Quantifiers, however, cannot be included in the part of the noun phrase falling under the identity condition, because a sentence like

\textit{(a) No linguist who has read Chomsky can afford to ignore him.}

does not imply that "no linguist has read Chomsky", as it would have to do if quantifiers are assumed to be identical in head noun and relative clause. Various proposals have been made to overcome this difficulty. Generative semanticists usually posit that quantifiers are in higher sentences (see, for example, G. Lakoff, "Repartee", \textit{Foundations of Language} 6, 3; B. Partee, "On the Requirement that Transformations Preserve Meaning", in Fillmore and Langendoen, \textit{Studies in Linguistic Semantics}).
complements are to be derived from conjoined sentences, thus effectively reducing the environment for recursion of “S” to two: (25.a) and (25.b).

Her arguments for deriving relative clauses from conjoined sentences amount to showing that there exist both a paraphrase and a syntactic relationship between the two, and that all rules needed to derive relative clauses from conjoined sentences are independently motivated (i.e., are needed in any case). The same claim is later made about sentential complements. Thompson points out the relationship between such triplets as

(26) (a) The man knows a boy and the boy speaks Korean.
    (b) The man knows a boy who speaks Korean.
    (c) The boy (who(m)) the man knows speaks Korean.

and notes that the speaker’s choice among these three sentences will be determined by such larger-than-sentence considerations as Topic-Comment, focus, etc. That is, Thompson argues that all three of these sentences have the same underlying structure, and implies that relative clause formation is one of the alternatives of conjunction reduction. She notes that the same kind of relation exists between sets of sentences like

(27) (a) Some fact annoyed Harry and the fact was that Bill stole his bike.
    (b) (The fact) that Bill stole his bike annoyed Harry.
    (c) The fact annoyed Harry that Bill stole his bike.
    (d) It annoyed Harry that Bill stole his bike.

As for the claim that all rules needed are independently motivated, only two rules are needed in any case: one to move one conjunct and embed it in the other, the second to delete the identical part of the sentence. Clearly, a rule deleting an identical noun phrase, or one replacing such a noun phrase by a relative pronoun, is needed in any grammar, so there is no problem with this rule. There is, however, at least some question about the embedding rule. Although, as Thompson points out, there are rules moving sentences to the left or right, such as, e.g. extraposition and various proposals
involved in moving sentential adverbs to the left, all these rules "flatten" the structure by reducing the number of nodes between the embedded and the highest "S". Thompson's proposal, on the other hand, involves rules which "deepen" the structure by increasing the number of nodes between the embedded and the highest "S". Although it has been generally accepted that transformational rules should flatten structure, this is not to say that the analysis by Thompson should be rejected, because it has many interesting consequences; it does mean, however, that her analysis needs to be justified on independent grounds, particularly with respect to the proposed transformations embedding sentences into other sentences. The only rules which deepen structure are those of conjunction, but they do this only with reduced sentences (i.e. structures no longer dominated by "S"), while Thompson's proposal does so with non-reduced sentences (i.e. structures still dominated by "S").

Because the generalizations at issue in this work are essentially independent of the model of grammar (i.e. can be captured in any of the three major models of T.G. grammar), I will continue to state them within the modified standard theory, pointing out alternative solutions during my discussion as I have done previously.

3.2 FACTIVES

The Kiparskys point out that the notion of factivity is due to the presupposition of the speaker that the embedded complement is true, and that verbs of assertion and belief are not factive because these verbs indicate that the subject "asserts" or "believes" the truth of the complement, but does not presuppose it. They propose to account for the difference between factive and non-factive verbs and their complements by the following deep structure (plus the features already noted):

37 See, for example, my "Purpose Constructions in English", read at the Fifth South East Conference on Linguistics at the University of Maryland (May 1971); and my "Time and the Analysis of Complementation", read at the Sixth South East Conference on Linguistics at Atlanta, Georgia (September 1971).
The Kiparskys then go on to point out that there are at least two syntactic advantages to having this head noun in the deep structure. The first advantage is that factives do not allow raising out of the embedded sentence while other complements do. Thus, there are sentences like:

(29) (a) Fred \{ expects \}
\{ believes \}
\{ thinks \}
\{ ... \}
that Bacon is the real author.
(non-factive)

(29) (b) Fred \{ regrets \}
\{ resents \}
\{ ... \}
that Bacon is the real author.
(factive)

Only the former (i.e. non-factive) allow a rule which the Kiparskys call “Object Raising”, but which I will call RAIS TO OBJ. This rule yields sentences like:

(29) (c) Fred \{ expects \}
\{ believes \}
\{ thinks \}
\{ ... \}
Bacon to be the real author.

With factives, however, ungrammatical strings result:

(29) (d) \*Fred \{ regrets \}
\{ resents \}
\{ ... \}
Bacon to be the real author.

38 See P. Kiparsky and C. Kiparsky, “Fact”, 161. Note that this structure implies that the authors assume that relative clauses have a different structure, because relative clauses and sentential complements are different types of structures.

39 I will use the label proposed by R. Stockwell, et al., “Nominalization”, because the former label is ambiguous. For justification of this rule, see e.g. R. Stockwell, et al., “Nominalization”, and Kiparsky and Kiparsky, “Fact”.

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(28) (a) factive: $NP$  
$NP$  $S$  
$NP$  $S$

(b) non-factive: $NP$

The Kiparskys then go on to point out that there are at least two syntactic advantages to having this head noun in the deep structure. The first advantage is that factives do not allow raising out of the embedded sentence while other complements do. Thus, there are sentences like:

(29) (a) factive: $NP$

(b) non-factive: $NP$
In addition to RAIS TO OBJ there is a rule called RAIS TO SUBJ, which relates the following sentences:

(30) (a) \( \text{It seems that Bacon is the real author.} \)

\[
\begin{align*}
\text{It} & \quad \text{seems} \\
\text{appears} & \quad \text{is likely} \\
\ldots & \\
\text{that Bacon is the real author.}
\end{align*}
\]

(b) \( \text{Bacon seems likely to be the real author.} \)

\[
\begin{align*}
\text{Bacon} & \quad \text{seems} \\
\text{appears} & \quad \text{is likely} \\
\ldots & \\
\text{to be the real author.}
\end{align*}
\]

Note that these verbs are also non-factive, and that the rule of RAIS TO SUBJ is, again, inapplicable to factives.

(30) (c) \( \text{It surprised annoyed comforted Bill that Bacon is the real author.} \)

\[
\begin{align*}
\text{It} & \quad \text{surprised} \\
\text{annoyed} & \quad \text{comforted} \\
\ldots & \\
\text{Bill that Bacon is the real author.}
\end{align*}
\]

(d) \( \text{Bacon surprised annoyed comforted Bill to be the real author.} \)

\[
\begin{align*}
\text{*Bacon} & \quad \text{surprised} \\
\text{annoyed} & \quad \text{comforted} \\
\ldots & \\
\text{Bill to be the real author.}
\end{align*}
\]

Lastly, there is a rule called NEG RAIS which has been proposed in order to relate sentences like:

(31) (a) \( \text{It is likely that he won't lift a finger until it is too late.} \)

(b) \( \text{It isn't likely that he will lift a finger until it is too late.} \)

(c) \( \text{I believe that he can't help doing things like that.} \)

(d) \( \text{I don't believe that he can help doing things like that.} \)

This rule is, again, applicable only to non-factives, since the corresponding factive sentence pairs show ungrammatical strings after NEG RAIS.

(32) (a) It bothers me that he won’t lift a finger until it is too late.
    (b) I regret that he can’t help doing things like that.
    (c) *It doesn’t bother me that he will lift a finger until it is too late.
    (d) *I don’t regret that he can help doing things like that.

The second advantage claimed for the deep structure head noun fact has to do with factive objects, which are said to freely show an it between the matrix verb and the that clause, while non-factive sentential objects do not, cf.

\[
\begin{align*}
33) (a) & \text{Fred} \begin{cases} \text{regretted} \\ \text{resented} \end{cases} \text{it that John ate the meat.} \\
(b) & *\text{Fred} \begin{cases} \text{thought} \\ \text{believed} \end{cases} \text{it that John ate the meat.}
\end{align*}
\]

The Kiparskys feel that this it is different from the expletive it of extraposed subject clauses, which appears in the surface structure after any kind of sentential subject has been extraposed, regardless of whether it is factive or not. The authors think that the it in sentences like (33.a) is due to the pronominalization of the noun phrase the fact.

I will return to the optional it with factive objects later. First the more general raising rules. The Kiparskys claim that the facts about raising rules which were laid out in the first part of this section are explained by the deep structure head noun fact, because a structure like (28.a) is subject to Ross’s Complex NP Constraint which (roughly) does not allow movement of any constituent out of a sentence with a head noun. Note, however, that the proposed explanation of the non-applicability of raising rules to factive clauses will only work as long as the head noun fact is actually present in the structure. That is, in order for the Complex NP Constraint to apply to factives, the ordering of the rules must be:

1. Raising Rules
2. Fact Deletion

because otherwise there will be no head noun, and the Complex NP Constraining will not apply.
This order, however, cannot obtain within the analysis proposed by the Kiparskys. Instead, \textit{FACT DEL} must precede \textit{EQUI NP DEL}, and the latter must precede \textit{RAIS TO OBJ}, which is the first of the raising rules. In most T.G. grammars, \textit{RAIS TO SUBJ} follows extraposition, and the Complex \textit{NP Constraint} cannot possibly apply to an extraposed structure. I am not certain where NEG RAIS is ordered with respect to \textit{FACT DEL}, and its ordering appears to be neutral with respect to that of \textit{EQUI NP DEL}. It would seem, however, that if I can show that the other two cases of raising rules are not protected by the head noun \textit{fact}, then the force of the argument employed by the Kiparskys is destroyed. I will now show in detail why the order needed for the Kiparskys' proposal to work is not possible within the framework they propose, but is possible within the framework proposed here.

1. \textit{FACT DEL} precedes \textit{EQUI NP DEL}. The relevant examples here are sentences like:

   \begin{enumerate}
     \item (a) \textit{Johni regretted the fact of his\textsubscript{f} leaving}.
     \item (b) *\textit{John regretted the fact of leaving}.
     \item (c) \textit{Johni regretted his\textsubscript{f} leaving}.
     \item (d) \textit{John regretted leaving}.
   \end{enumerate}

   That is, if \textit{EQUI NP DEL} precedes \textit{FACT DEL}, then there is no way of deriving (34.d), unless the rule of \textit{FACT DEL} is constrained to be obligatory when \textit{EQUI NP DEL} has applied, and optional otherwise.

2. \textit{EQUI NP DEL} precedes \textit{RAIS TO OBJ}. The relevant examples here are sentences like:

   \begin{enumerate}
     \item (a) \textit{I expect myself to do well on the exam}.
     \item (b) \textit{I expect to do well on the exam}.
   \end{enumerate}

   That is, unless the ordering is as indicated, we will derive these two sentences as optional variants of each other, but they are not synonymous. As is pointed out elsewhere\textsuperscript{41} sentences like (35.a) are derived from underlying structures like:

\textsuperscript{41} See R. Stockwell, et al., "Nominalization"; and my "Rule Ordering", \ldots
(36) (a) \textit{I expect [I TNS do well on the exam] of I.}

with \textsc{EQUI NP DEL} from the indirect object (DATive), which undergoes reflexivization, and not from underlying structures like:

(36) (b) \textit{I expect [I TNS do well on the exam].}

which is the structure underlying sentence (35.b).

3. Hence the order must be:
   1. \textit{FACT DEL}
   2. \textsc{EQUI NP DEL}
   3. \textsc{RAIS TO OBJ}

In other words, the Complex \textit{NP} Constraint will not keep the raising rules from applying to factives, since the head noun \textit{fact} is no longer present when the RAIS TO OBJ applies.

Except for Stockwell, et al.,\textsuperscript{42} scholars have assumed that RAIS TO SUBJ and RAIS TO OBJ are the same rule; a rule they call it REPLACEMENT. Rosenbaum assumes that this rule must follow extraposition, largely because restricting the rule in this way automatically rules out generation of many ungrammatical strings. This means that for Rosenbaum a sentence like (37.a) has a deep struc-

\textsuperscript{42} See R. Stockwell, et al., "Nominalization"; and my "Rule Ordering". I think the reason for considering RAIS TO OBJ and RAIS TO SUBJ as two rules has to do with two facts: first, the paraphrase relation between

(a) \textit{I expect him to do well on the exam.}

are ambiguous between the two interpretations indicated in (35.a) and (35.b).

and, second, with the fact that arguments that the two are one rule are not as strong in a case grammar as they are in other models of grammar. It is clear, however, that the paraphrase relation is adequately expressed by having the same deep structure, and that RAIS TO SUBJ and RAIS TO OBJ can be formulated as one rule within a case grammar without complicating any of the rule mechanisms.
tured like (37.b), an intermediate structure like (37.c), and a surface structure like (37.d).

(37) (a) John seems to like fish.

(b) \[
\begin{array}{c}
S \\
\downarrow \\
NP \\
\downarrow \\
N \\
\downarrow \\
it \\
\end{array}
\]

(37.c) \[
\begin{array}{c}
S \\
\downarrow \\
NP \\
\downarrow \\
V \\
\downarrow \\
VP \\
\downarrow \\
V \\
\end{array}
\]

Lakoff argues that, for a variety of reasons, it REPLACE cannot be ordered after extraposition. His arguments concentrate on two problems stemming from the ordering proposed by Rosenbaum. First, he shows that ordering it REPLACE after extraposition results in an ordering paradox, because it necessitates that the rule

See G. Lakoff, “Deep and Surface Grammar” (Harvard, unpublished manuscript, 1967), particularly 34-50. It should be pointed out that the strings Rosenbaum wanted to rule out by ordering it replacement after extraposition are partly those which the Kiparskys attempt to protect, unsuccessfully as it turns out, by the Complex NP Constraint. That is, there is no need to order any of the raising rules after extraposition in this analysis because all the structures which do not allow raising rules are sentential complements on head nouns.
of reflexivization occur twice in the grammar: both before and after extraposition. To derive sentences like (38.a), reflexivization must follow \textit{it} REPLACE, which in turn must follow extraposition:

(38) (a) \textit{Beth believes herself to be rich}.

But, to derive sentences like (38.b), reflexivization must precede extraposition because the former rule can only operate on identical noun phrases:

(38) (b) \textit{It suggests itself to me that we have here an ordering paradox}.

Second, Lakoff shows that the derived structure for (37.a) cannot be as in (37.d), but must be as in

(38) (c)

\[
\begin{array}{c}
S \\
\downarrow \\
NP \\
\downarrow \\
\text{John} \\
\downarrow \\
V \\
\downarrow \\
\text{seem} \\
\downarrow \\
\text{VP} \\
\downarrow \\
\text{to like fish}
\end{array}
\]

Lakoff's arguments are convincing, particularly so for models of grammar other than case grammar. It is clear, however, that if RAIS TO SUBJ and RAIS TO OBJ are one rule, whether formulated as \textit{it} REPLACE or not, in any analysis like that of the Kiparskys this rule must still follow \textit{fact} deletion, for the reasons discussed earlier. This means that the head noun (via the Complex NP Constraint) cannot protect factive complements from this raising rule. In a case grammar, on the other hand, RAIS TO SUBJ can either be the same rule as RAIS TO OBJ, or a separate one, because case grammar does not have subjects or objects in the deep structure, but derives these entities by transformations. My own preference is to treat the rules in question as one rule because we seem to be dealing here with the same process, that of taking a noun phrase out of an embedded sentence and raising it to a noun phrase in the matrix sentence. This notion becomes even more attractive if we
consider the fact that RAIS TO OBJ and RAIS TO SUBJ always occur in mutually exclusive environments. In other words, RAIS TO OBJ applies only to deep structures which have a (potential) object, while RAIS TO SUBJ applies only to deep structures which cannot have an object.

The problems just raised, of course, are not insurmountable in an analysis like that proposed by the Kiparskys. Since the raising rules apply only to a few verbs, it is simple to make them into governed rules, with obligatory specification in the lexicon where necessary. I need not point out, however, that such ad hoc rule features are costly, and should therefore be avoided whenever possible. In addition, there is good reason to believe that such features are unnecessary, since the data exhibit greater regularity than is shown by the examples from the Kiparskys; and this regularity can be explained by assuming head nouns other than fact in the deep structure of appropriate complements, head nouns which, I have shown, are needed on independent grounds. A little thought will show that it is only verbs of belief which allow NEG RAIS and RAIS TO OBJ. RAIS TO SUBJ appears to be strictly a governed rule. That is, NEG RAIS does not apply to all verbs of assertion, verbs of command, or verbs with indirect object, nor does RAIS TO OBJ. In the examples below, I will exhibit verbs of assertion in (39), verbs of command in (40), and verbs with indirect objects in (41), with the (a) example in each set showing negation in the complement, the (b) example showing negation in the matrix, and the (c) example showing the raised object (where possible).

(39) (a) John asserted that Harry isn’t at the party.
    (b) John didn’t assert that Harry is at the party.
    (c) *John asserted Harry not to be at the party.

(40) (a) John demanded that Harry not be dismissed.
    (b) John didn’t demand that Harry be dismissed.
    (c) *John demanded Harry not to be dismissed.

(41) (a) John persuaded Fred not to eat the meat.
    (b) John didn’t persuade Fred to eat the meat.
    (c) ?
While the (b) examples in (39) to (41) are not ungrammatical, it is clear that they are not derived from the (a) examples, because they are not equivalent in meaning. RAIS TO OBJ produces ungrammatical results with (39) and (40), and cannot be applied at all to (41) because the subject to be raised was deleted by EQUI NP DEL. With examples (39) to (41), however, the Kiparskys do not propose to make use of the Complex NP Constraint. Leaving actions for Chapter IV, it will be shown in this section that not only factives but (at least some) assertions also have head nouns.

Returning now to factive objects and the optional it which the Kiparskys claim can occur with factives only (cf., examples (33.a,b), repeated below), it seems unlikely that this it is a pronoun, as the Kiparskys think.

(42) (a) Fred regretted it that John ate the meat.
(b) *Fred believed it that John ate the meat.

There are at least two reasons which argue against such an assumption. In the first place, as was noted by Rosenbaum, there are no sentences like:

(43) (a) *It that John ate the meat surprised Fred.

If the it with factive objects were a pronoun, then we would expect such a pronoun to appear also in subject position, since pronominalization in general is not confined to objects of verbs. This means that if we assume that it is pronominalization which derives the it occurring with factive objects, then we must explain why this pronominalization of the head noun does not occur with subjects.

In the second place, pronominalization is one of the anaphoric processes. Anaphora in general enables the speaker to avoid repetition of complex structures with numerous modifiers, by allowing him to delete the repeated modifiers and to substitute an anaphoric expression for the whole antecedent construction.44 Pronominalization, thus, is that part of anaphora which substitutes pronouns as

---

the anaphoric expression. With factive objects, however, there is not only no antecedent, but the *it* is said to substitute only for the head noun (i.e. *the fact*), and not for the whole construction, as is the case with definite pronouns like *it* in general. If we were dealing with an anaphoric process in the case of factive objects, we would expect the indefinite *one* to appear on the surface structure instead of *it*, since *one* generally substitutes for head items only, cf.

(43) (b) *Lolita has a red pencil, and Humbert has a blue one.*
(c) *Lolita has a red pencil, and Humbert has a blue *it*.*

(d) The idea that *S replaced *the one* that *S.*

There are several other arguments against this proposed pronominalization rule. In the first place, factive gerunds do not show this *it*; cf.

(44) (a) *John regretted it (of?) Fred's having eaten the meat.*

Moreover, the examples cited by the Kiparskys to support their claim that the Complex NP Constraint holds for factives after the head noun *the fact* has been replaced by *it* are not valid. The Kiparskys cite:

(44) (b) *This is the book which you reported *the fact* that John plagiarized.*

The reasons these examples are not valid lies in the fact that *report* does not allow *it* in any case, cf.

(44) (c) *John reported *it* that Fred plagiarized the book.*

Since, on the other hand, relativization on an object noun phrase of a factive is grammatical when the *it* is grammatical, the Complex NP Constraint does not seem to hold for factives or non-factives with *it*, cf.
This is the answer which I would resent it that you take all know.

From this discussion, it is clear that this *it* is not a head noun replacing *fact*, but simply a reflex of a head noun after extraposition.

I should like to turn now to the syntactic support for the proposed analysis of presuppositions. It was shown earlier that within the framework of complementation accepted by the Kiparskys the rule of *FACT DEL* must precede the raising rules. (I will henceforth refer to RAIS TO OBJ and NEG RAIS by this term, leaving RAIS TO SUBJ out of consideration, since it seems to be both an alternative to RAIS TO OBJ and strictly governed.) Therefore, in their framework the Complex *NP* Constraint cannot be used to avoid application of the raising rules. Now, the ideal situation with respect to these rules would be for all of them to be optional at all times, and for the general constraints, such as the Complex *NP* Constraint, to tell the grammar when the rules cannot be applied. This, of course, is the ideal situation for all optional rules. However, this ideal situation is not quite achieveable. In the first place, there are verbs like *assume* and *presuppose*, which allow RAIS TO OBJ, but do not allow NEG RAIS, cf.

(45) (a) *I assume this to be true.*
(b) *I assume that your statement is not correct.*
(c) *I don't assume that your statement is correct.*

Here, the implications of (45.b) and (45.c) are quite different. Verbs of this type will therefore need an exception feature of the form [—NEG RAIS] in the lexicon.

In addition, verbs like *expect*, and in some dialects *want, like*, etc., allow RAIS TO OBJ with any complement, while verbs of belief allow this rule only with stative verbs.45

45 Cf. also R. Stockwell, et al., "Nominalization". It is argued there that the auxiliaries *have* and *be* are stative, since there are sentences like:

(a) *Fred believes {John to have eaten the meat.} {John to be eating the meat.}*
Therefore, depending on how the lexicon and redundancy rules in general will be set up, we will either allow (except for general constraints) the raising of noun phrases with statives, and need to mark verbs like expect, want, etc., as exceptionally allowing noun phrase raising with all types of verbs. Or noun phrase raising will be allowed with all types of verbs, and the verbs of belief will be marked with a negative exception feature. Since the class of verbs of belief is larger than the partially exceptional class which includes expect, want, etc., it may be cheaper to mark the latter class. On the other hand, the verbs of belief could be marked by a redundancy rule since we are here, again, dealing with a (semantic) verb class. However this is accomplished, the implication of these examples is that some exception features will be necessary with raising rules.

These few exceptions aside (which would be exceptions in any analysis), the analysis I propose here can account for all the generalizations noted earlier by using general constraints: specifically the Complex NP Constraint and the Complex Subject Constraint, because, as I will argue in detail in section 4.2, the difference between, e.g. I regret my going and I regret going is seen as one between an embedded event as opposed to an embedded action. This means that the two sentences in question have different deep structures. It was noted in section 2.2 that actions are verb phrases
rather than whole sentences, so that EQUI NP DEL is obligatory with actions. On the other hand, events and propositions of all types, including factives, must have surface structure subjects, so that EQUI NP DEL cannot apply to propositions and events. This proposal allows me to order the transformational rules in such a way that the two general movement constraints in question will account for the data discussed here and discussed also in part by the Kiparskys.

There are at least two further reasons for wanting to retain the head noun fact in the grammar until fairly late, reasons which were not touched on by the Kiparskys. The first of these has to do with extraposition, the second with that deletion. It has long been noted that gerundive clauses do not extrapose. That is, there are no sentences like:

(47) (a) \[ \begin{array}{c}
  *\text{The fact} \\
  *\text{It} \\
  *\text{The event}
\end{array} \] \text{s}urprised Bill (of) Fred's coming late.

Now, the form of the whole construction is the fact of, or the event of (cf., section 4.1), with the of inserted between a head noun and a following NP node. Note, however, that of phrases in general cannot be separated from their head nouns. Thus, there are no sentences like:

There are certain passives which appear to allow extraposition of an of phrase; cf.

(a) A story is sometimes told of a white stallion that roams the ranges at midnight.

(b) An explanation was given of the student's absence, but it was not accepted by the principal.

Note that the examples in question have long of phrases and no objects, so that we seem to be dealing here with a phenomenon similar to that of the particle inversion in sentence pairs like:

(c) John looked the information up.

(d) *John looked the information about trains leaving on Sunday up.

As pointed out by J. Ross ("Constraints on Variables in Syntax"), such phenomena are best handled by output conditions rather than by grammatical rules.
EMBEDDED PROPOSITIONS

(47) (b) *John broke the leg yesterday of the table.
(c) The canonization has been withdrawn of some saints.

This means that if the head noun the fact of or the event of is still present when the rule of EXTRA applies, we can automatically account for the fact that gerundives do not extrapose by the general constraint on of phrases.

Note, incidentally, that this order is also needed to account for such sentence pairs as the following:

(48) (a) The fact surprised John that Helen had come.
(b) It surprised John that Helen had come.
(c) The idea occurred to Martha that she should hit George.
(d) It occurred to George that he should hit Martha.

That deletion is somewhat more complex. The general restriction on that deletion seems to be that it cannot occur with factives, whether they are in subject or object position, or extraposed, cf.

(49) (a) *Bill ate the meat amazed Fred.
(b) *Fred resented Bill ate the meat.
(c) *It annoyed Fred Bill ate the meat.
(d) *Fred resented it Bill ate the meat.

This would indicate that FACT DEL should follow that deletion; the rule of THAT DEL would then specify that no head noun the fact can occur in the structure index to the left of the that to be deleted. This would mean that the head noun fact remains in the structure until fairly late, since THAT DEL is a fairly late, optional rule.

Now, however, note that some verbs of assertion, for example, also take a head noun, namely, proposition, and that THAT DEL may not apply to these complements either. Compare the following sentences:

(50) (a) John asserted the proposition that Harry ate the meat.
(b) *John asserted the proposition Harry ate the meat.
(c) John asserted that Harry ate the meat.
(d) *John asserted Harry ate the meat.
These examples indicate that *that* clauses with the head noun *proposition* do not allow *that* deletion any more than do *that* clauses with the head noun *fact*. Therefore, *that* deletion appears to be related more generally to the presence of a head noun in the deep structure rather than, as was hitherto assumed, to the factivity of a complement or its matrix verb.

There are various other head nouns for *that* clauses, such as *idea*, *notion*, and *position*, cf.

\[(51) \quad \begin{align*}
(a) \quad & \text{The} \begin{cases}
\text{idea} \\
\text{notion}
\end{cases} \text{ that Mary loves Janie occurred to Charles.} \\
(b) \quad & \text{Charles holds the position that students should have a voice in university affairs.}
\end{align*}\]

Note that none of these head nouns permits *that* deletion on the complements. Thus, there are sentences like:

\[(51) \quad \begin{align*}
(c) \quad & \begin{cases}
The \\
It
\end{cases} \begin{cases}
\text{idea} \\
\text{notion}
\end{cases} \text{ occurred to Charles that Mary loves Janie.}
\end{align*}\]

but not sentences like:

\[(51) \quad \begin{align*}
(d) \quad & \begin{cases}
*\text{The} \\
*\text{It}
\end{cases} \begin{cases}
\text{idea} \\
\text{notion}
\end{cases} \text{ occurred to Charles Mary loves Janie.}
\end{align*}\]

Similarly, there is no:

\[(51) \quad (e) \quad *\text{Charles holds students should have a voice in university affairs.}\]

I conclude, therefore, that any head noun on a *that* clause precludes deletion of the *that*, and that this fact is captured most easily if we order the rule which deletes the head noun after the rule which deletes the *that*.

3.3 ASSERTIONS

It was noted in section 3.1 that the behavior of verbs of assertion is irregular with respect to their taking the (head) noun *proposition*
as object. This appears to be due to the fact that verbs of assertion cross-classify with performative verbs. As Austin notes, performatives can only be used appropriately by a speaker who has the appropriate power over the action or state of affairs described in the complement. Thus, in Austin's example of the judge who sentences the criminal to six months in jail, it is only a judge who can perform this action, at least in our culture.

Now, however, note that *declare* can be used as such a performative verb, cf.

\[
(52) \begin{align*}
(52) \text{(a)} & \quad I \text{ hereby declare to you that} \\
& \quad \begin{aligned}
& \text{this meeting is now in session.} \\
& \text{**Harry is a fink.} \\
& \text{**Joe likes ice cream.} \\
& \text{*Charles knows the answer.}
\end{aligned}
\end{align*}
\]

The scale of unacceptability in this example is a direct result of the speaker's power over the situation described in the *that* clause. If the speaker is the chairman, then he, like the judge in Austin's example, has the power to perform the action of opening the meeting, and he can therefore use the performative sentence. But since people do not normally have power over states or properties obtaining for other people, the other sentences are unacceptable, and the more so, the more the complement assumes that the speaker has power over the internal states or properties of the subject of the complement.

The major difference between verbs of assertion as performatives and other performatives is that the former allow deletion of the indirect object *you*; and after the deletion of *you*, raising of the embedded subject to object of the matrix sentence. Hence, we get sentences like:

\[
(52) \text{(b)} \quad I \text{ (hereby) declare} \begin{cases}
\text{this meeting to be in session.} \\
\text{this statement to be true.}
\end{cases}
\]

47 See J. Austin, "Performative Sentences", and also the discussion in section 2.1, above.
but not:

(52) (c) *I(herby) declare

\[
\begin{align*}
&\text{Harry to be a fink.} \\
&\text{Joe to like ice cream.} \\
&\text{Charles to know the answer.}
\end{align*}
\]

These observations indicate that performative verbs of assertion share the feature [+PERFORMATIVE] with other performative verbs. A redundancy rule based on this feature will mark performative verbs of assertion with a rule feature [+IND OBJ DEL], which they share with other verbs. (Cf. *Bill asked a question (of you), Fred delivered the dog (to you).*) The question now is, will we need another rule feature [+RAIS TO OBJ]? This feature is not needed with performatives, since performatives do not take head nouns, i.e. there are no sentences like:

(52) (d) *I hereby declare to you the fact that John ate the meat

and, as was noted earlier, RAIS TO OBJ can apply freely to matrix verbs whose embedded sentences do not have head nouns.

The verb *claim* can also be a performative verb, but it is even more restricted than *declare*. Consider the following sentences.

(53) (a) 

\[
\begin{align*}
&\text{I hereby claim} \\
&\text{that this statement is true.} \\
&\text{*that this meeting is now in session.} \\
&\text{*that Harry is a fink.} \\
&\text{*that Joe likes ice cream.} \\
&\text{*that Charles knows the answer.}
\end{align*}
\]

Remembering what was said about the appropriateness of the speaker's power over the situation described in the *that* clause, we find that the acceptable sentence in (53.a) can only be used by a person who has the authority to claim that the statement is true, i.e. someone who has either made it or knows its content. That is, *claim* behaves as we would predict, including the fact that it allows RAIS TO OBJ, cf.\(^{48}\)

\(^{48}\) Note that, in addition to *claim* and *declare*, the following verbs of assertion can be used as performatives:
We turn now to the so-called second passive and its relationship to verbs of assertion. Note that all verbs of assertion can take the second passive, cf.

(54) \( \text{This is acknowledged/} \text{admitted/} \text{asserted/} \text{attested/} \text{claimed/} \text{declared/} \text{denied/} \text{concluded/} \text{judged/} \text{proclaimed/} \text{pronounced/} \text{stated/} \text{to be true.} \)

The question, therefore, is not one of restricting the second passive to certain verbs of assertion since all such verbs take this construction, but rather one of deriving that passive with these verbs. There are two possible ways of deriving these second passives: one is to derive them in the same way as for verbs of belief, the other is to derive them in a way similar to that proposed by Rosenbaum. Unfortunately, there is no conclusive evidence for either derivation, and some evidence against both.

As was shown by the Kiparskys, verbs of belief allow a rule called RAIS TO OBJ, so that these verbs have two passives, depending on whether the rule of RAIS TO OBJ has been applied or not. (I will exemplify the derivation with RAIS TO OBJ in (55.a), and without that rule in (55.b).)

(55) (a) \( \text{Someone believes [Bacon AUX be the real author]_S} \rightarrow \text{BASE} \)
\( \text{Someone believes [Bacon]_NP [AUX be the real author]_S} \rightarrow \text{RAIS TO OBJ} \)

(a) \( \text{I (hereby) acknowledge/admit/assert/attest/declare/deny/conclude/judge/proclaim/pronounce/state/this to be the truth.} \)

As with other performative verbs of assertion, the restriction on the appropriateness of the situation and the powers of the speaker over the situation holds with these verbs also. It is also only those embedded clauses which conform to this restriction on the performatives that can have the subject of the embedded sentence raised to the object of the matrix sentence.
EMBEDDED PROPOSITIONS

Someone believes [Bacon] NP to be the real author  TO REPL AUX
Bacon is believed to be the real author  PASS

(b) John believes [Bacon AUX be the real author] s
John believes [that Bacon is the real author] s
That Bacon is the real author is believed by John

If this derivation is extended to verbs of assertion, we encounter two problems. First, application of the rule RAIS TO OBJ yields ungrammatical strings with verbs of assertion, cf.

(55) (c) *John acknowledged/asserted/claimed/said/ ... Fred to be a fool.

(This fact can be explained by my earlier remarks on the relation between verbs of assertion and performative verbs.) Note that deriving the second passive this way would entail marking all verbs of assertion as obligatorily taking the passive, if the rule of RAIS TO OBJ was applied.

Second, a number of these verbs take the head noun proposition, cf.

(55) (d) John asserted/denied/ ... the proposition that Fred is a fool.

This means that all verbs taking this head noun would have to be marked as exceptions to the Complex NP Constraint if we wanted to derive the second passive of verbs of assertion analogous to that of the verbs of belief. That is, deriving the second passive by means of the rule of RAIS TO OBJ would entail three exception features, one to ensure that ungrammatical strings like (55.c) are passivized by making the passive obligatory with verbs of assertion if the rule of RAIS TO OBJ has been applied; the second to allow the rule of RAIS TO OBJ to apply in the first place, despite the Complex NP Constraint; the third to obligatorily delete the head noun proposition, since there are no sentences like:
(55) (e) *John acknowledged/stated/ ... the proposition Fred to be a fool.
(f) *Fred is acknowledged/stated/ ... the proposition to be a fool.

These arguments imply that it would be preferable to derive second passives on verbs of assertion in a way similar to that proposed by Rosenbaum, since such a derivation would obviate the two exception features mentioned above. The derivation in question would have the following form:

(56) (a) Someone asserted the proposition [John
  AUX be a fool]s
  The proposition [John AUX be a fool]s
  was asserted
  The proposition was asserted John
  AUX be a fool
  It was asserted John AUX be a fool
  HEAD
  REPLACE
  John was asserted AUX be a fool
  it REPLACE
  John was asserted to be a fool
  TO REPL AUX

It is clear that this derivation would work for all verbs of assertion, as long as these verbs are not subject to the rule of RAIS TO OBJ. Since application of this rule yields ungrammatical strings (cf. (55.-c)), even with those verbs of assertion which do not take the head noun proposition, the latter group of verbs must be marked with an exception feature, probably of the form [—RAIS TO OBJ].

As far as exception features are concerned, then, the derivation indicated in (56.a) is clearly preferable, since it entails only one such feature on a few verbs. Extending the derivation indicated in (55.b) to verbs of assertion, however, would entail one exception feature for all verbs of assertion (i.e. that making the passive obligatory after RAIS TO OBJ), another exception feature marking all those verbs of assertion taking the head noun proposition as being unaffected by the Complex NP Constraint with respect to the rule of RAIS TO OBJ, and a third making head noun deletion obligatory.
There is one relatively minor problem with the derivation shown in (56.a), in that this derivation implies the following ordering of the relevant rules:

(56) (b) RAIS TO OBJ
    EQUI NP DEL
    FOR INSERT
    EXTRA
    HEAD REPLACE/DEL
    TO REPLACE AUX
    THAT INSERT

The crucial rule at this point is THAT INSERT. It is clear that this rule should be ordered so that it does not apply until after all the rules deforming complements have applied. Specifically, THAT INSERT must follow TO REPLACE AUX, since otherwise the grammar would need a rule which deletes the that after the subject NP has been raised out of the complement. This means that the rule of THAT INSERT must follow it REPLACE, and the latter must follow extraposition. Ordering the rule of THAT INSERT after extraposition, however, necessitates complicating the structural index of THAT INSERT, because this rule must now apply to both extraposed and non-extraposed structures.

In weighing the factors discussed here, it appears that it is cheaper, in terms of exception features and rule complexity, to derive the second passive on verbs of assertion as shown in (56.a), rather than in the same way as for verbs of belief (i.e. by way of RAIS TO OBJ). Although this may appear to be an unnecessary complication, it should be noted that the rules necessary to derive second passives in this way are independently motivated, except that of it REPLACE, which is not the same as RAIS TO SUBJ. (See the discussion on RAIS TO OBJ, above.)

Now, in order to have the raising rules operate without special constraints, i.e. affected only by the Complex NP Constraint and the Complex Subject Constraint, while maintaining that except for performative verbs and verbs of belief all verbs taking that clauses also take a head noun proposition or fact, I have to show two things:
first that there is no change in meaning when the head noun *proposition* is deleted, and second, that this deletion does not have to apply before RAIS TO OBJ, which is the first of the raising rules. Sentence pairs like:

\[
(57) \begin{align*}
\text{(a) } & \text{John} \begin{cases}
\text{asserted} \\
\text{stated}
\end{cases} \text{ the proposition that Harry is a fink.} \\
\text{(b) } & \text{John} \begin{cases}
\text{asserted} \\
\text{stated}
\end{cases} \text{ that Harry is a fink.}
\end{align*}
\]

indicate that assertions are, indeed, synonymous with or without the head noun *proposition*. As for the ordering, we know that RAIS TO OBJ is one of the earliest rules, while the rule which deletes head nouns can be quite late in my proposal because sentences with EQUI NP DEL have a different deep structure from sentences without that rule.

Note here that an analysis which assumes an optional rule of EQUI NP DEL (even with obligatory specification in the lexicon) will not be able to use the Complex NP Constraint for assertions and other *that* clauses taking head nouns (nor for events, which also take head nouns), any more than that analysis can invoke the Complex NP Constraint for factives. This is due to the fact that those verbs of assertion taking head nouns show the same behavior with respect to the raising rules as do the factives. Specifically, this means that for both factive verbs and verbs of assertion the rule deleting the head noun must precede the rule of EQUI NP DEL in any analysis which does not have different deep structures for actions and propositions, where the latter include factives, since

\[
(57) \text{(c) John denied (*the proposition of) having eaten the meat.}
\]

is as ungrammatical as is

\[
(57) \text{(d) John regretted (*the fact of) going.}
\]

(cf. section 3.2, above). This means that unless the deep structure for embedded actions and states is different from that of embedded propositions and events, and the former but not the latter must undergo EQUI NP DEL, the Complex NP Constraint will not
protect embedded propositions (including factives) from the raising rules, because an analysis assuming the same deep structure for embedded propositions and actions must delete the head nouns \textit{proposition, fact,} etc. before the raising rules can be applied (cf. section 3.2 for detailed discussion).

With respect to NEG RAIS, it appears that none of the verbs of assertion allow this rule, even those like \textit{declare} and \textit{claim}, which do not take a head noun, since the sentences below do not have the same implication.

\begin{equation}
\begin{align*}
\text{(58) (a) } & \begin{cases}
\text{declared} \\
\text{claimed} \\
\text{asserted}
\end{cases} \quad \text{that Bill won't come to the party.} \\
\text{(b) } & \begin{cases}
\text{declare} \\
\text{claim} \\
\text{assert}
\end{cases} \quad \text{that Bill will come to the party.}
\end{align*}
\end{equation}

The simplest solution as far as NEG RAIS is concerned appears to be a redundancy rule of the form: verbs of assertion are negatively marked for NEG RAIS. This appears to be cheaper than an exception feature, even on only a few verbs.

It is important to note for the ordering of the rule which deletes head nouns like \textit{fact, proposition, event,} that verbs of assertion, as well as factive verbs, allow both relativization and interrogativization, i.e. there are sentences of the form:\footnote{The fact that there are no relative clauses or questions on constituents in a sentential subject is explained by the Complex Subject Constraint:}

\begin{itemize}
\item (a) *This is the hat which \textit{that} Fred wore surprised me.
\item (b) *What did \textit{that} Fred wore surprise you?
\end{itemize}

note that after extraposition but before the noun \textit{fact} is replaced by \textit{it}, neither relative clauses nor questions on constituents in the extraposed clause are possible, cf.

\begin{itemize}
\item (c) *This is the hat which \textit{the fact} surprised me \textit{that} Bill wore.
\item (d) *What did \textit{the fact} surprise you \textit{that} Bill wore?
\end{itemize}
This means that the rule deleting the head nouns must precede the rules of relativization and question. Specifically, the rule in question must precede the rules forming relative clauses and _WH_-questions.

3.4 OTHER HEAD NOUNS ON EMBEDDED PROPOSITIONS

The list in example (6) (see section 3.0.3. above) shows that there are several other head nouns possible with embedded propositions. It is clear that under most proposals these nouns will be in the deep structure. To date, I have only found one verb for each of these head nouns which appears to allow deletion of the head noun without a change in meaning. Since this is rather a marginal area, I will summarize it only briefly here.

The head nouns _idea, notion, and perhaps thought_, can only be deleted if they occur as subjects of the verb _occur (to)_ as in, e.g.

\[
(60) \begin{cases}
(\text{The idea}) \\
(\text{The notion}) \\
(\text{The thought(?)})
\end{cases}
\] that John loves Mary occurred to Bill.

Note that this construction is protected by the Complex Subject Constraint from any rules which move constituents out of the

Only after the noun _fact_ has been replaced by it is it possible to remove a constituent out of the _that_ clause, cf.

\[
(e) \text{This is the hat which it surprised me that Fred wore.}
\]

\[
(f) \text{What did it surprise you that Fred wore?}
\]

This seems to indicate that relative clauses and _WH_ questions must be ordered after the rule which replaces head nouns like _fact_ by _it_.

\[
(59) \begin{cases}
\text{asserted} \\
\text{claimed} \\
\text{regretted}
\end{cases}
\] that Fred wore.

\[
(59) \begin{cases}
\text{assert} \\
\text{claim} \\
\text{regret}
\end{cases}
\] that Fred wore?
embedded clause, and that movement rules, therefore, cannot apply until after extraposition.

The head noun position can only be deleted without a change in meaning when it occurs as object of the verb hold, as in, e.g.

(60) (b) *John holds (the position) that students should have a voice in university affairs.

None of the raising rules apply to structures of this type, i.e. both RAIS TO OBJ and NEG RAIS are inapplicable, since there are no sentences like:

(60) (c) *John holds students to have a voice in university affairs.

and structures like the following do not have the same implication:

(60) (d) John holds that students shouldn’t have a voice in ...

(e) John doesn’t hold that students should have a voice ...

Relativization and interrogative apply also; cf.,

(60) (f) This is the voice which John holds that students should have ...

(g) What does John hold that students should have ... ?

but THAT DEL does not, cf.

(60) (h) *John holds students should have a voice ...

All of this implies that the deletion of position is the same rule as that which deletes the other head nouns, i.e. it applies after that deletion but before the relative and interrogative rules.

3.5 CONCLUSION

In this chapter, I have discussed embedded propositions in general. It was shown that matrix verbs are sensitive to the description type they allow to be embedded under them, and that the subcategorization of embedded sentences according to the major types outlined in Chapter 2 explains a number of otherwise accidental properties
in the syntactic behavior of complementation, as well as their semantic reading.

It was also shown that, as far as that clauses are concerned, there are, in addition to fact, at least proposition, idea, notion, position, and possibly thought, which exhibit the same semantic and syntactic properties as does fact, although only proposition has as wide a distribution as does fact. I argued that the embedded sentences which appear as sentential noun phrases in the surface structure are sentential complements on these head nouns in the deep structure (and not, incidentally, on it, as Rosenbaum argued). Having head nouns, Ross’ Complex NP Constraint applies to the complements, which means that no constituent can be moved out of the complements. Therefore, assuming these head nouns in the deep structure will not only assure their correct semantic reading, but it will also result in a principled explanation of their syntactic behavior because it obviates the need for a number of ad hoc exception features. It was also shown that these head nouns can all be deleted by the same rule, to be ordered somewhere after that deletion and extraposition, but before the relative clause and question rules.

Lastly, I argued that unless the grammar analyzes these sentential complements according to their description type, and specifically analyzes embedded actions and states as having different deep structures from embedded propositions and events, the rule of EQUI NP DEL must be governed by a feature and must apply to identical deep structures. Such an analysis, however, forces us to order the deletion of the head nouns before EQUI NP DEL, i.e. very early in the derivation. Once the head noun has been deleted, however, the Complex NP Constraint cannot be used to keep rules from moving constituents out of the complement. This, in turn, means that we are, again, forced to resort to ad hoc rule features.
EVENTS

4.0 INTRODUCTION

Because many of the parameters defining events have already been discussed in Chapters 2 and 3, this chapter will be rather brief. It will concentrate on reviewing and systematizing the evidence already discussed, and on showing that embedded sentences describing events are noun phrases and that they take the head noun event; and that, furthermore, their surface form is that of gerundive or derived nominal constructions. The major syntactic consequences of assuming this head noun will also be discussed. These seem to be three: first, assumption of this head noun for all gerundives can explain the fact that gerundives cannot be extraposed, which follows from the fact that gerundives are linked to their head noun by the preposition of; and the constituent to the right of this preposition cannot be separated from its head noun. Second, by assuming a head noun for these constructions, we are, in effect, claiming that they are complex noun phrases, and are, therefore, protected by the Complex NP Constraint. It will be shown that this is exactly the proper claim to make because constituents cannot, in fact, be moved out of gerundive or derived nominal constructions. Third, the presence of the head noun event can help to explain the so-called fact-manner ambiguity of gerundive and derived nominal constructions embedded under factive matrix verbs. This ambiguity was noted by Lees,\(^1\) and Katz and Postal,\(^2\) but ignored by later analyses of complementation.

\(^1\) See R. Lees, *The Grammar of English Nominalization*.
It was noted in section 2.2. that simple sentences of a certain type express propositions, but that they can, at the same time, describe events, or actions on the part of some agent, etc. This is in accord with the fact that those simplexcs which contain an action verb can, if gerundivized, occur as subject of the verb occur. Thus, a sentence like (1.a) is a proposition. The fact that it also describes an event can be seen from (1.b.):

(1) (a) Fred hit Bill.
      (b) Fred’s hitting Bill occurred at ten o’clock.

Note that neither that clauses (factive or otherwise) nor FOR-TO clauses refer to events, because they cannot act as subjects of the verb occur, cf.

(1) (c) *(The fact) that Fred left occurred at ten o’clock.
      (d) *For Fred to leave occurred at ten o’clock.

In the same section, it was shown that the verb occur also takes derived nominals as its subject, provided that the verb underlying the derived nominal is not a stative verb. Thus, the following sentences are grammatical:

(2) (a) John’s arrival
      (b) Fred’s promotion to colonel
      (c) The destruction of the city
      (d) The eruption of the volcano

occurred at ten o’clock.

The examples below, however, are not grammatical because the verbs underlying the derived nominals are stative:

(3) (a) *John’s knowledge occurred at
      (b) *Fred’s intention of committing suicide occurred at ten o’clock.

Similarly, gerundives describing states or properties cannot be the subject of occur, cf.

(4) (a) *John’s knowing the answer occurred at ten o’clock
      (b) *Joanne’s being beautiful occurred at ten o’clock
It was for this reason that events were characterized in section 2.3 as
(43) (b) An event has an action verb and is viewed as occurring
at a given time. The aspect of an event is the complete
real world change.

In this chapter it will be argued that gerundive and derived nominal
constructions fulfilling this characterization describe events, and
that this fact is reflected by assuming the head noun event in the
deep structure of these constructions. This will have exactly the
proper consequences with respect to the semantic reading and with
respect to predicting syntactic behavior of the constructions. Some
of the syntactic consequences are, again, due to the Complex NP
Constraint; others are due to the presence of the preposition of; and
others are due to the semantic properties of the noun event.

So far, we have only considered events in subject position. It is
clear, however, that events are not confined to this position since,
like that clauses, they are dominated by the node NP, and can thus
occur wherever the node NP can occur in the tree. In the examples
below, I will list events as objects in (5), as “oblique” noun phrases
(i.e. as objects of a preposition) alone after the verb in (6), and as
oblique noun phrases after an object in (7). The (a) and (b) examples
in each set will be gerundive; the (c) and (d) examples derived
nominals.

(5) (a) Ken survived Joanne’s attacking him.
    (b) Susan dreaded Harry’s proposing to her.
    (c) Charles noticed the eruption of the volcano.
    (d) Erwin denied Beverly’s arrival.

(6) (a) Daniel approved of Joanne’s attacking Ken.
    (b) Gwendolyn gambled on Charles’ proposing to her.
    (c) Mathilda gloated over Nick’s defeat.
    (d) Paul protested against Elvira’s arrest.

(7) (a) Ferdinand advised Isabella of Joanne’s attacking Ken.
    (b) Beatrice reminded Gwendolyn of Charles’ proposing to her.
    (c) The messenger notified the official of the eruption of the
        volcano.
    (d) Luigi warned Mario about Beverly’s arrival.
4.2 THE HEAD NOUN EVENT

The claim that gerundive and derived nominal constructions whose underlying verbs are action verbs are events is supported by the fact that the gerundives and derived nominals of this type can occur across the copula from the noun event, and as complements on the head noun event. I will exemplify events across the copula from event in (8), and as complements on the head noun event in (9), with gerundives again as (a) and (b), and derived nominals as (c) and (d).

(8) (a) Joanne’s attacking Ken (b) Charles’ proposing to Gwendolyn (c) The eruption of the volcano (d) Beverly’s arrival

(9) (a) Beth’s arriving at the station (b) Joe’s falling into the water (c) The event of The enemy’s destruction of the city (d) Serena’s refusal of the offer

Now, however, notice that in the examples in (9), the head noun event can be deleted without a change in meaning. That is, the examples in (9) and those in (10) have the same semantic reading.

(10) (a) Beth’s arriving at the station (b) Joe’s falling into the water (c) The enemy’s destruction of the city (d) Serena’s refusal of the offer

If the examples in (9) and (10) are a representative sample, we should be able to reinsert the head noun event into all embedded events without a change in meaning, and indeed we can. Compare the sentences in (11), (12), and (13) with those in (5), (6), and (7) respectively.

(11) (a) Ken survived the event of Joanne’s attacking him. (b) Gwendolyn dreaded the event of Charles’ proposing to her.
(c) Charles noticed the event of the eruption of the volcano.
(d) Erwin perceived the event of Beverly's arrival.

(12) (a) Daniel approved of the event of Joanne's attacking Ken.
(b) Helen gambled on the event of Abe's proposing to her.
(c) Mathilda gloated over the event of Nick's defeat.
(d) Paul protested against the event of Elvira's arrest.

(13) (a) Ferdinand advised Isabella of the event of Joanne's attacking Ken.
(b) Beatrice reminded Gwendolyn of the event of Charles' proposing to her.
(c) The messenger notified the official of the event of the eruption of the volcano.
(d) Luigi warned Mario about the event of Beverly's arrival.

I propose, therefore, that all gerundives and derived nominals describing events have the head noun *event*. The assumption of this head noun has several advantages. The first of these is that the Complex NP Constraint can be used to protect the constituents in the complement from being moved out of that complement, for constituents can no more be moved out of gerundive and derived nominal constructions than they can be moved out of other complex noun phrases. The second advantage of this proposal is that it allows us to account automatically for the fact that gerundive and derived nominal constructions cannot be extraposed. Lastly, the analysis helps to explain the fact-manner ambiguity of gerundive and derived nominal constructions embedded under factive matrix verbs.

It is important to note that unless we assume a head noun for all gerundive (not only for factive ones) and derived nominal constructions the only way to account for the fact that these structures do not extrapose is by an ad hoc condition on the rule of extraposition. This means that assuming a head noun only for factive gerunds will not account for the data under discussion because a number of non-factive matrix verbs also take eventive gerunds; and neither factive nor eventive gerunds extrapose. The claim that all gerundives and derived nominals have head nouns in the deep structure also means that those gerundives and derived nominals which do not have the
head noun event must have another head noun, such as process, state, or property. These head nouns will be discussed in Chapters 5 and 6.

In sections 3.2 and 3.3 it was argued that the rule which deletes the head nouns fact and proposition must be ordered after the rule of extraposition, in order to account for sentences like:

(14) (a) The fact surprised Bill that Harry was late again.
     (b) The proposition was asserted that Harry is a fink.
     (c) The idea occurred to Charles that Mary loves Janie.

It was also claimed there that if head nouns are not deleted until after extraposition, we can make use of the of present in gerundives and derived nominals to prevent their extraposition, since of phrases can not normally be separated from their head nouns, cf.

(15) (a) *John broke the blade yesterday of his knife.
     (b) *The canonization took place in 1953 of Saint Maria Glorietti.
     (c) *I saw the mayor yesterday of Los Angeles.

In this respect, derived nominals, gerundives, and action nominals act like all other of phrases, i.e. there are no sentences like:

(16) (a) *The event annoyed us { of John's departing suddenly. } { of John's sudden departure }

(b) *It annoyed us { John's departing suddenly. } { John's sudden departure. }

It is not important for my purpose whether the preposition of between the head noun and its complement is inserted transformationally, or whether it is present in the deep structure, as long as it is present by the time the rule of extraposition applies so that its presence can be used to stop this rule from applying to the structures in question. I will, therefore, not discuss here the question of deep structure versus inserted of, but will simply assume its presence when the rule of extraposition applies in the ordering of rules. Note that there is no reason to assume that even if the preposition of is inserted transformationally, that this insertion cannot precede
extraposition, since the latter rule is conditioned only by the presence of the head noun and the gerund. That is, *of insertion must follow gerundivization of the embedded verb but can precede extraposition. In other words, there appears to be no reason to doubt that the preposition *of will be present at the time when the rule of extraposition applies, regardless of whether this *of is assumed in the deep structure or inserted transformationally.

These considerations imply that there is a general constraint which prevents any rule from separating an *of construction. A closer look at the data, however, indicates that sentential *of constructions can be separated if they are embedded in an agentless, passive sentence, cf.

(16) (c) *Yesterday we ignored the importance of Mike’s discovery of the answer.
(d) We ignored the importance yesterday of Mike’s discovery of the answer.
(e) The importance of Mike’s discovery of the answer was ignored yesterday.
(f) The importance was ignored yesterday of Mike’s discovery of the answer.
(g) *It was ignored yesterday (the importance of) John’s discovery of the answer.

However, as was indicated in the examples in (15), above, nonsentential *of constructions cannot be separated at all.

From these data and considerations, we can now formulate the *of Constraint:

(A) The *of Constraint:
No rule may separate the constituent to the right of the preposition *of from its head noun if the former is not derived from a sentence. If the construction in question is derived from a sentence, it can be separated from its head noun if and only if the matrix sentence has undergone both passive and agent deletion. In this case, however, head noun deletion may not apply.
It remains, now to discuss the deep structure of events. The Kiparskys assume that factives have the following deep structure:

\[(17) \quad (a) \quad NP \quad NP \quad S\]

In this proposal, the *of* is part of the head noun, and is deleted before *that* clauses by an independently motivated rule which deletes all prepositions before *that* and FOR-TO clauses.\(^3\) It is clear, however, that this deep structure is not possible within the lexicalist framework since there are numerous noun phrases of the form, e.g.

\[(17) \quad (b) \quad the\ \text{mayor}\ \text{of}\ \text{London} \ldots \]
\[(c) \quad the\ \text{eruption}\ \text{of}\ \text{the}\ \text{volcano} \ldots \]
\[(d) \quad the\ \text{eating}\ \text{of}\ \text{the}\ \text{meat} \ldots \]
\[(e) \quad the\ \text{blade}\ \text{of}\ \text{the}\ \text{knife} \ldots \]

This was clearly the reason why Chomsky\(^4\) proposed that derived nominals have a deep structure like this (slightly simplified from his example (53)):

\[(18) \quad (a) \quad \tilde{N} \quad \tilde{N} \quad \tilde{N}\]
\[D \quad N \quad N \quad N\]
\[\text{[+DEF]} \quad \text{prove} \quad \text{the} \quad \text{theorem}\]

Fraser\(^5\) proposes a similar structure as the derived structure of Lees' action nominals\(^6\) except that his labels are the more traditional NP and N rather than N and \(\overline{N}\).

---

\(^3\) See P. Rosenbaum, *Grammar of Predicate Complement Constructions*.


\(^6\) See R. Lees, *Grammar of English Nominalization*. Note, incidentally, that
Stockwell, et al., use a similar deep structure for cases on head nouns, but without Chomsky's "X-bar" convention. According to this proposal, a phrase like (17.c) would have the deep structure as in (18.b):

\[(18) \ (b)\]

\[
\begin{array}{c}
\text{D} \\
\text{N} \\
\text{PREP} \\
\text{C_t} \\
\text{NP} \\
\text{NOM}
\end{array}
\]

For those linguists who work within the lexicalist framework, the deep structure of sentential complements on head nouns like fact, event, etc., must be something like the following:

\[(18) \ (c)\]

As was indicated in section 3.1, the findings presented in this work are essentially independent of the lexicalist-transformationalist controversy. I will, therefore, continue to use the deep structure pro-

---

Chomsky's node \( \overline{N} \) (in example (18.a) above) does not correspond to the node \( N \), but to a node like \( NOM \) proposed by R. Lees in the work cited here, and by R. Stockwell, et al., Integration.

See R. Stockwell, et al., "Base Component" and "Nominalization".
posed by the Kiparskys for noun complements, rather than show both lexicalist deep structures and transformationalist underlying structures.

Turning now to the impossibility of moving constituents out of gerundive and derived nominal constructions, the following considerations are relevant here: we have seen that the raising rules, the rule inverting relative pronouns, and the rule inverting *WH*-question words can move constituents out of sentences not protected by the Complex NP Constraint. It remains now to show that none of these rules can apply to gerundive and derived nominal constructions. I will exemplify the rule of RAIS TO OBJ in (19), that of NEG RAIS in (20), that of REL PRO INVERT in (21), and that of *WH* INVERT in (22), with the basic sentences containing gerundive and derived nominal constructions in (a) and (b), respectively and the sentences and strings resulting from the four rules in (c) and (d).

(19) (a) Ken survived Joanne's attacking him.
(b) Ken survived Joanne's attack on him.
(c) *Ken survived Joanne attacking him.
(d) *Ken survived Joanne attack on him.

(20) (a) David approved of Joanne's not attacking Ken.
(b) *David approved of Joanne's not attack on Ken.
(c) David didn't approve of Joanne's attacking Ken.
(d) David didn't approve of Joanne's attack on Ken.

Here, (20.b) is ungrammatical because the derived nominal can be negated only by a negative prefix like un-, and there is, of course, no form *unattack. Note also that (20.c,d), though grammatical do not mean the same as does (20.a), and the former thus cannot be derived from the same structure as that underlying (20.a).

(21) (a) Ken survived the man's attacking him.
(b) Ken survived the man's attack on him.
(c) *This is the man whose attacking him Ken survived.
(d) *This is the man whose attack on him Ken survived.
(22) (a) Mildred approved of Joanne’s attacking Ken.
   (b) Mildred approved of Joanne’s attack on Ken.
   (c) *Who did Mildred approve of attacking Ken?
   (d) *Who did Mildred approve of attack on Fred?
   (e) *Who did Mildred approve of Joanne’s attacking?
   (f) *Who did Mildred approve Joanne’s attack on?

We can see, then, that constituents cannot be moved out of gerundive and derived nominal constructions. This fact can, again, be predicted by the Complex NP Constraint if we assume that gerundive and derived nominal constructions have a head noun in the deep structure, and show this head noun is still present when the rules exemplified in (19) through (22) apply. It was shown in sections 3.2. and 3.3 that the analysis proposed here can account for the facts of complements on head nouns like proposition because the proposed analysis shows the need for different deep structures for different types of complements (i.e. propositions versus events versus actions, etc.) on semantic grounds, and shows then that these different deep structures have exactly the appropriate syntactic consequences (i.e. allow the grammar to predict the syntactic behavior of the different types of complements). Specifically, this analysis allows us to retain the head nouns on those complements that need these head nouns for semantic and syntactic reasons until after both extraposition and rules moving constituents out of embedded sentences have applied. Clearly, the arguments and examples cited in this section support the arguments of sections 3.2 and 3.3 because they show not only the need for the head noun event (i.e. a different deep structure for embedded propositions and events), but also that the noun event cannot be deleted until after extraposition and rules moving constituents out of sentences have applied.

4.3 THE DERIVED STRUCTURE OF EVENTS

In example (18.a) Chomsky’s deep structure for derived nominals was shown. Although there is some disagreement as to whether this
structure is, indeed, the deep structure of derived nominals (the lexicalist-transformationalist controversy), there is at least general agreement that the surface structure of derived nominals must be like that in (18.a), always excepting the X-bar convention, which has not been generally accepted. It is clear that action nominals must have the same structure as do derived nominal constructions because they exhibit the same syntactic behavior (see Chapter V) and appear to have the same constituent structure. Lexicalists have recognized this, and have therefore assumed that action nominals and derived nominals have the same deep structure. That is, they have, in effect, claimed that the gerunds in action nominals are a (type of) derived nominal which are entered in the lexicon as nouns. Transformationalists like Fraser have assumed that action nominals have the same surface structure as do derived nominals. Fraser, in fact, proposes a “mapping transformation” which turns deep structures like (23.a) into surface structures like (23.b):

\[
(23) \text{ (a)} \quad NP \\
\quad \quad D \\
\quad \quad \quad [+SG] \\
\quad \quad N \\
\quad \quad \quad [+ACT] \\
\quad \quad S \\
\quad \quad John \, \text{ride his bicycle}
\]

\[
(23) \text{ (b)} \quad NP \\
\quad \quad D \\
\quad \quad \quad [+SG] \\
\quad \quad N \\
\quad \quad \quad [+ACT] \\
\quad \quad John's \\
\quad \quad riding \, \text{of his bicycle}
\]

In order to ensure of insertion, Fraser’s node $N$ in (23.b) must have under it another node $N$, dominating the derived noun riding, and the $NP$ node of the direct object his bicycle in (23.a), since the rule of of insertion cannot apply to a string of the form $V + NP$. Thus,

\footnote{See B. Fraser, “Some Remarks on the Action Nominalization in English”, 7.}
Fraser's proposal entails structure building, as do all other such transformationalist proposals which have a separate level of deep structure.

It is clear that the derived structure of gerundives cannot be the same as that for action and derived nominals. For one thing, the latter allow definite and deictic articles under the determiner node, while the former allow only the possessive derived from the deep structure subject, cf.

\[
\begin{align*}
\text{(24) (a)} & \quad \{ \begin{array}{c} 
\text{The} \\
\text{This} \\
\text{John's} 
\end{array} \} \quad \{ \begin{array}{c} 
\text{eating of the meat} \\
\text{destruction of the property} 
\end{array} \} \\
\text{(b)} & \quad \{ \begin{array}{c} 
*\text{The} \\
*\text{This} \\
\text{John's} 
\end{array} \} \quad \text{eating the meat} 
\end{align*}
\]

In addition, the \text{V-ing} of gerundives like (24.b) should not be dominated by the node \text{N}. In the first place, this would yield a structure of the same form as for the nominals in (24.a), and we would have to explain why there is no \text{of} insertion with the structures in (24.b), while there is \text{of} insertion with the structures in (24.a). In the second place, the \text{V-ing} of gerundives is not a noun since it allows adverbs but not adjectives, cf.

\[
\text{(24) (c)} \quad \text{His} \quad \{ \begin{array}{c} 
\text{quickly} \\
*\text{quick} 
\end{array} \} \quad \text{eating the meat} 
\]

On the other hand, action nominals as well as derived nominals allow adjectives but not adverbs, cf.

\[
\text{(24) (d)} \quad \text{His} \quad \{ \begin{array}{c} 
*\text{quickly} \\
\text{quick} 
\end{array} \} \quad \{ \begin{array}{c} 
\text{eating of the meat} \\
\text{destruction of the property} 
\end{array} \}
\]

\footnote{Note that \text{v-ing} forms without surface structure objects, whether because the underlying verb is intransitive or by object deletion, are ambiguous between action nominal and gerundive, since both adjectives and adverbs are possible, cf.

\[
\begin{align*}
\text{(a) } & \quad \text{his quick} \quad \{ \begin{array}{c} 
\text{coming} \\
\text{eating} 
\end{array} \} \\
\text{(b) } & \quad \text{his} \quad \{ \begin{array}{c} 
\text{coming} \\
\text{eating} \\
\text{quickly} 
\end{array} \}
\end{align*}
\]
These observations and arguments indicate that gerundives will essentially retain their sentential structure, except for insertion of the possessive under the deep structure subject, and replacement of certain elements in the node $AUX$ by -$ing$.$^{10}$

This section can be summed up in this way: simple sentences describing events can be embedded as sentential complements on the head noun event. This noun can occur wherever the node $NP$ can occur in the matrix sentence governed only by restrictions of the matrix verb, and wherever the noun can occur alone; it can also occur as head noun of a sentential complement of the type described by the noun in question. Finally, the head noun can be deleted without meaning change, and its assumption in the deep structure explains certain syntactic behavior, so that there is this type of support for its assumption in the deep structure. Since the presence of the head noun explains the behavior of gerundives, derived nominals, and action nominals with respect to extraposition and rules raising a constituent out of the embedded sentence, the rule deleting the head noun must be ordered to apply after the rule of extraposition and after the rules moving such constituents. This accords well with the observations made in section 3.2, where it was shown that head nouns of that clauses should also not be deleted until after extraposition, since they appear as subjects of sentences with extraposed complements.

### 4.4 EVENTS AND FACTS

This section will deal with the relationship between gerundive events and facts. There can be little doubt that a relation exists between them, since all gerundives embedded on factive verbs allow the factive interpretation.$^{11}$ Consider the following sentences:

---

$^{10}$ For detailed rules, see, for example, P. Rosenbaum, *Grammar of Predicate Complement Constructions*; or R. Stockwell, et al., “Nominalization”.

$^{11}$ See, for example, R. Lees, *The Grammar of English Nominalization*; or Kiparsky and Kiparsky, “Fact”.

(25) (a) The event of John's eating the meat surprised us.
    (b) The fact of John's eating the meat surprised us.

It is important to note that gerundives containing a *have*, which is
inserted by the gerundive rule if the underlying form of the ger-
undive contains a PAST tense or may be in the underlying form as
*have*,\(^{12}\) are in some sense more factive than are gerundives without
*have*. Compare the following sentences to (25.a,b):

(25) (c) The event of his having left yesterday ...
    (d) The fact of his having left yesterday ...

In section 3.1 it was noted that the factive interpretation of gerun-
dives is acceptable because an event can be viewed as a fact, i.e. once
an event has occurred, its occurrence is a fact, whose truth can
therefore be presupposed by the speaker. This observation appears
to be the reason why gerundives containing a past or a perfective
seem to be more factive than gerundives not containing such a
morpheme or feature.

At least three analyses of nominalization and complementation
have observed and commented on the fact that gerundives can be
factive:\(^{13}\) Lees, and Katz and Postal discuss the ambiguity of sen-
tences like:

(26) (a) I approve of his writing.
    (b) I was surprised at his driving.
    (c) His drinking annoyed me.

and ascribe this ambiguity to a factive versus manner reading of the
gerundives in (26). The Kiparskys, on the other hand, concentrate
on the factive interpretation of gerunds.

Since the factive interpretation of gerundives has been shown to
exist in the three works cited and since there is general agreement

\(^{12}\) For details, see P. Rosenbaum, "Specification and Utilization of a Trans-
formational Grammar", in D. Lochak, *Scientific Report* No. 1 (T. J. Watson
Research Center, 1966).

\(^{13}\) They are: R. Lees, *The Grammar of English Nominalization*; J. Katz and
P. Postal, *An Integrated Theory of Linguistic Description*; and Kiparsky and
Kiparsky, "Fact".
that this observation is correct, there is no need to prove here that gerunds can be factive. Instead, I only have to show that factive gerunds are no more difficult to explain in my proposal than they are in anybody else's. This task is an easy one, since the difference between factive and eventive gerundives lies clearly in the factivity of the matrix verb. That is, the speaker's presupposition about the truth of gerundives depends on the factivity of the matrix verbs, just as it does with that clauses. In other words, just as there are that clauses which are not factive, so are there gerundives which are not factive. Compare the following sentences:

(27) (a) \[ \text{Fred} \left\{ \begin{array}{l} \text{regretted} \\ \text{resented} \end{array} \right\} \left\{ \begin{array}{l} \text{the} \\ \text{event} \end{array} \right\} \text{of Bill's hitting John.} \]

(b) \[ \text{The} \left\{ \begin{array}{l} \text{fact} \\ \text{event} \end{array} \right\} \text{of Bill's hitting John surprised us.} \]

(c) \[ \text{Fred} \left\{ \begin{array}{l} \text{saw} \\ \text{desired} \end{array} \right\} \left\{ \begin{array}{l} \text{the} \\ \text{event} \end{array} \right\} \text{of Bill's hitting John.} \]

And, just as with that clauses, some matrix verbs are indifferently factive,\(^{14}\) i.e. they can be factive but need not be.\(^{15}\) These include some of the verbs of assertion, as in:

(27) (d) \[ \text{Fred} \left\{ \begin{array}{l} \text{reported} \\ \text{signaled} \\ \text{denied} \end{array} \right\} \left\{ \begin{array}{l} \text{the} \\ \text{event} \end{array} \right\} \text{of Bill's hitting John.} \]

Since the factive reading of gerundives depends solely on the factivity of the matrix verb, the feature [+FACT] on the matrix

---

\(^{14}\) See Kiparsky and Kiparsky, "Fact", section 5.

\(^{15}\) These verbs, incidentally, do not allow the head noun fact to be deleted because deletion of this head noun is accompanied by a change in meaning, cf.

(a) John denied that his father is in town.
(b) John denied the fact that his father is in town.
(c) Fred reported Harry's leaving.
(d) Fred reported the fact of Harry's leaving.

These matrix verbs have the features [+\(-NP(FACT)]\), [+\(-NP(EVENT)]\), but not [+FACT], since they are not factive.
verb will yield this factive reading of the gerundive (and allow the head noun fact), just as it does with propositions embedded under factive matrix verbs. The Kiparskys note that factive matrix verbs can take either that clauses or gerundive constructions, and attempt to describe this and other semantic-syntactic factors by assuming the noun fact as head noun for these embedded sentences. In sections 3.2 and 3.3, however, it was argued that, with few exceptions, that clauses have the head noun proposition, while in this chapter it was argued that gerundive and derived nominal constructions have the head noun event. It was also argued in Chapter III that the head noun fact can be substituted for proposition if and only if the matrix verb is factive. It is clear that the same holds true for events embedded under factive matrix verbs. That is, factive verbs are always marked (+FACT). If the verb in question takes an embedded proposition, it will be so marked in the lexicon; if, on the other hand, it takes an embedded event, it will, of course, also be so marked in the lexicon. Whether the surface form of the embedded sentence is a that clause or a gerundive construction is determined by the feature [+PROPN] or [+EVENT]. Thus, the deep structure of the gerundive in (26.a), repeated below for convenience, is (roughly) as shown in (28).

\[(26)\] (a) I approve of his writing.

\[
\begin{array}{c}
(28) \\
\end{array}
\]

We can, then, account for the fact-manner ambiguity with the features listed under the matrix verb. The factive reading of the embedded sentence follows from the fact that approve (of) is factive (i.e. has the feature [+FACT]). The manner reading follows from the fact that the embedded sentence describes an event (i.e. the
matrix verb has the feature \([+\text{manner} \land \text{way} \land \text{EVENT}]\), because the nouns manner and way describe the way in which the agent of the embedded sentence performs the action indicated in the predicate of that sentence, or in the way the event occurs. The manner interpretation of gerundive and derived nominal constructions is thus a direct consequence of the fact that gerundives describe events or actions, since propositions are not true or false in any particular manner. It remains now only to decide whether the interpretation is due to an event or to an action.

For several reasons, the former seems to be the case. First, note that events which do not have agents but DATives (in Fillmore’s sense) still have the manner and factive ambiguity, cf.

(29) (a) John approved of the arrival of the train.
(b) Fred was surprised at the eruption of the volcano.
(c) Harry’s failing the exam shocked us.

Second, note that embedded actions do not seem to have the factive-manner ambiguity, cf.\(^{16}\)

(30) (a) John \(\begin{array}{c}
\text{regretted} \\
\text{insisted on}
\end{array}\) leaving.

It is only events of the type

(30) (b) Bill’s eating the meat ...

which have the ambiguity in question. Third, note that events embedded under non-factive matrix verbs do not have the fact-manner ambiguity, because they cannot have a factive reading, cf.

(30) (c) Fred \(\begin{array}{c}
\text{saw} \\
\text{heard}
\end{array}\) Bill’s leaving.

which cannot have a factive reading at all.

From this evidence, it seems clear that what has been called the manner reading of gerundive constructions is in reality their event

\(^{16}\) In this connection, cf. R. Lees’ remarks in his The Grammar of English Nominalization, 71f, that actions and facts occur as subjects of different matrix verbs.
reading, in the sense that a gerundive can only have a manner reading because it is an event. This seems to mean that the actual ambiguity between factive and manner is one between factive and eventive readings. What seems to have happened is that, because the eventive reading emerges most clearly when a manner adverbial is added to the gerundive, this fact was mistakenly assumed to be due to a separate type of nominalization.

4.5 CONCLUSION

In this brief chapter I have argued that gerundive and derived nominal constructions have the head noun event in the deep structure because they describe events. Assumption of this head noun in the deep structure will thus predict the appropriate semantic reading, as well as the syntactic behavior of the embedded structures. First, the head noun makes the constructions into complex noun phrases, thus enabling the grammar to utilize the independently motivated Complex NP Constraint to predict the fact that no constituent can be moved out of these constructions. Second, the head noun uniquely predicts the surface form of the embedded sentence to be that of a gerundive. The question of the structure underlying derived nominal constructions cannot be settled until linguists find a solution to the lexicalist-transformationalist controversy. Third, the presence of the head noun can be used to predict the fact that gerundive and derived nominal constructions cannot be extraposed because there is a general constraint of separating the constituent to the right of the preposition of from its head noun. Lastly, the head noun event can help explain the fact-manner ambiguity of gerundive and derived nominal constructions embedded under factive matrix verbs.
5

ACTIONS

5.0 INTRODUCTION

In this chapter it will be shown that embedded actions are noun phrases, and that they must not have a surface structure subject, while embedded events must have a surface structure subject. The relation between embedded actions and embedded states and properties with respect to the absence of the surface structure subject in all of these embedded sentence types will also be discussed. The syntactic implications of the different deep structures for actions, states, and properties, as opposed to events and propositions will then be taken up. The first of these implications is that the rule of \textit{EQUI NP DEL} is obligatory with the first three sentence types mentioned, but may not apply to any of the other sentence types. The second is that the deletion of the head nouns on the various types of complements does not have to precede \textit{EQUI NP DEL} (and thereby the raising rules), as it must in the analysis proposed by the Kiparskys and by Stockwell, et al., since in the analysis proposed here the difference between actions and factives is one of different deep structures, and not, as in earlier analyses, due to the optional rule of \textit{EQUI NP DEL}. The third is the optional agent on the head noun \textit{action}, its semantic implications and its syntactic source. Here it will be shown that this agent with the noun \textit{action} is not raised from the embedded sentence. The relationship between infinitival complements and gerunds describing actions will also be discussed. Lastly, I will discuss actions as sentential subjects, and their relation to infinitives and FOR-TO clauses which may also occur there.
In two brief sections at the end of this chapter, I will deal with the relation of acts and activities to actions, and that of imperatives to actions. In the former, it will be shown that in some dialects acts are a well-defined subset of actions, but that in other dialects the head noun *action* is quite consistently replaced by the head noun *act*. Activities, on the other hand, are simply generic actions. As for the relationship between imperatives and actions in general, and in particular actions embedded on the verbs of command, it will be shown that imperatives are actions embedded on the performative verb *command*. Verbs of request will also be dealt with briefly in this section. In the main, the latter are less constrained as to the types of complements they allow than are verbs of command.

5.1 ACTIONS

5.1.1 *Actions Without Surface Structure Subjects*

In section 2.2, actions were characterized as:

(C) An action is performed by a volitional agent. The aspect of an action is the agent performing the action in the real world change.

It was also stated that actions and events are closely related: i.e. if an event has an agent, then it can be said to describe an action performed by (or "on the part of") that agent. Thus, a simple sentence like:

(1) (a) *John ate the meat.*

in addition to expressing a proposition, describes an event. Some philosophers of language\(^1\) would say that it also describes an action.

---

\(^1\) See, for example, R. Chisholm, "The Descriptive Element in the Concept of Action"; D. Davidson, "The Logical Form of Action Sentences"; A. Kenny, *Action, Emotion, and Will*, as well as the discussion on action and agents in section 2.2.3.
There appear in general to be two problems with characterizing simple sentences as actions. The first is the apparent confusion among some philosophers of language as to whether whole sentences describe actions or only verb phrases (cf. section 2.1.2). The second is the fact that in order to be able to say that a simple sentence describes an action, we must:

1. say that the action is “on the part of the agent”; and,
2. split off the verb phrase and turn it into an action nominal of the form, e.g. the eating of the meat.

This seems to indicate that simple sentences do not really describe actions, but that the similarity between sentences like (1.a) and action nominals like the eating of the meat, coupled with the fact that in sentences of this type, the subject is the “agent of the action expressed by the verb”, has led some philosophers of language astray. In other words, simplexes describe actions only indirectly, through the possibility that the agent can be split off, and the verb phrase can be nominalized to an appropriate gerundive form. The relationship between actions and their underlying simplexes is thus the same as that between other embedded sentence types and their underlying simplexes.

We must be careful to distinguish between what Lees calls “action nominals” (e.g. the eating of the meat) and what I call “actions” (e.g. eating the meat), because these two structures exhibit different syntactic behavior. I will keep Lees’ term “action nominal” for the structures containing the of, and use the term “action complement” for the structures without the of. Now, part of the difference between these two structures was discussed in the preceding chapter, namely, the fact that action nominals take adjectival modifiers, but action complements take adverbial modifiers. In addition, action nominals, but not action complements, can act as subjects of occur, cf.

\[(1) \begin{array}{c}
\text{The hanging of the prisoner} \\
\text{The eating of the meat} \\
\text{The reading of the will}
\end{array} \quad \text{occurred at noon.}\]
Although both action nominals and action complements can occur across the copula from the noun action, only action complements can take the head noun action, cf.

\begin{enumerate}
\item \textit{The hanging of the prisoner
\begin{itemize}
\item The eating of the meat
\item The reading of the will
\end{itemize}
was an action.}
\item \textit{Hanging the prisoner
\begin{itemize}
\item Eating the meat
\item Reading the will
\end{itemize}
was an action.}
\item \textit{The action of
\begin{itemize}
\item the hanging of the prisoner
\item the eating of the meat
\item the reading of the will
\end{itemize}
on occurred
\begin{itemize}
\item at noon.
\end{itemize}}
\item \textit{The action of
\begin{itemize}
\item hanging the prisoner
\item eating the meat
\item reading the will
\end{itemize}
on occurred
\begin{itemize}
\item at noon.
\end{itemize}}
\end{enumerate}

Although I have no real explanation why action nominals cannot take the head noun action, I can give two possible reasons.

1) It is possible that Fraser’s mapping transformations\textsuperscript{2} operate on a dummy noun, while action complements have a lexical head noun action.

2) It is more likely that action nominals simply do not take the head noun action in the deep structure, i.e. that they are not complements but rather nominals. There is some support for this proposal since infinitivals also do not take the head noun action, and I will show that they describe actions as much as do action complements (cf. section 5.2.5). That is, there are no sentences like:

\begin{enumerate}
\item \textit{*Fred wanted the action to come.}
\end{enumerate}

To return to subjectless actions, there is some additional support

\textsuperscript{2} See B. Fraser, “Some Remarks on the Action Nominalization in English”.
for the claim that actions must be without surface structure subjects; namely, the fact that (3.b), but not (3.c), is possible.

(3) (b) his action of eating the meat ...
   (c) *the action of his eating the meat ...

Events, on the other hand, must have a surface structure subject, since (3.d), but not (3.e), is possible.

(3) (d) the event of his eating the meat ...
   (e) *his event of eating the meat ...

So far, we have only considered actions as sentential subjects. If actions are dominated by the node NP, they must occur under any such NP node, including direct object noun phrases and oblique noun phrases. The following examples show that they do so occur.

(4) (a) \[
\begin{array}{c}
\text{John} \\
\{ \text{abhorred, relished, regretted, missed} \}
\end{array}
\text{eating the meat.}
\]

(b) \[
\begin{array}{c}
\text{John} \\
\{ \text{absolved, deterred, coaxed, tricked} \}
\end{array}
\begin{array}{c}
\text{Bill} \\
\{ \text{of, from, into, into} \}
\end{array}
\text{eating the meat.}
\]

To establish complete parallelism between the head noun action and the other head nouns discussed in this work, I must show that the head noun action can be deleted without a change in meaning, and that this noun takes embedded actions as complements wherever it can occur alone. The first can be shown simply by inserting the head noun into some of the examples already cited in this section. I will cite actions as subjects in (5.a), as direct objects in (5.b), and as oblique noun phrases in (5.c).

(5) (a) \[
\begin{array}{c}
\text{(The action of)} \\
\{ \text{eating the meat, hitting Bill, hanging the condemned prisoner, reading the will} \}
\end{array}
\text{occurred at noon.}
\]
When we consider these examples, we find that the head noun *action* is, indeed, deletable without a change in meaning.\(^3\)

The second point to be shown in order to establish the parallelism between *action* and the other nouns under discussion can be demonstrated by deleting the complements, rather than the head noun, on the same verbs.

(6) (a)  
*The action*  
occurred at noon.  
surprised Bill.  
annoyed Bill.  

(b)  
*John*  
abhorred  
relished  
regretted  
missed  

(c)  
*John*  
absolved  
deterred  
coaxed  
suspected  

Linda  
of  
from  
into  

When we consider these examples, we find that the noun *action* can occur with or without a complement on the same verbs.

5.1.2. *The Rule of EQUI NP DEL*

In section 3.2, it was shown that within an analysis such as that

\(^3\) It should be pointed out that some of my informants found *action* as a head noun questionable, though they accepted *act*. A possible explanation for this will be offered in section 5.2. Until then, the reader who rejects *action* as head noun for these constructions can simply substitute *act*, as did the informants in question.
proposed by the Kiparskys\textsuperscript{4} or that of Stockwell, et al.,\textsuperscript{5} the rule of FACT DEL has to precede the rule of RAIS TO OBJ, which is the first of the raising rules. It was then argued that this fact makes it impossible in an analysis of this type to make use of the Complex NP Constraint to prevent the raising rules from applying to factives. And it was one of the major claims of the Kiparskys that the assumption of the deep structure head noun \textit{fact} for embedded factive clauses explains a number of otherwise accidental syntactic properties, such as the fact that the raising rules cannot apply to factives. Lastly, it was argued in that section that because extraposed propositions in general may either retain their head noun in the subject slot or replace it by an "anticipatory \textit{it}'", FACT DEL (or rather a more general rule of head noun deletion (should follow extraposition. This claim was supported in section 4.1 by showing that if head nouns are not deleted until after extraposition, we can account automatically for the fact that gerundives do not extrapose.

In this section I will show that in the analysis proposed here the rule deleting the head nouns in question can be ordered after the rule of extraposition. The crucial rule is that of EQUI \textit{NP} DEL, because it was shown in section 3.2 that in the analysis proposed by the Kiparskys the order has to be:

1. FACT DEL
2. EQUI \textit{NP} DEL
3. RAIS TO OBJ

I will repeat the examples cited in section 3.2 as evidence that FACT DEL must precede EQUI \textit{NP} DEL in these analyses.

(7) (a) \textit{I regretted the fact of my going.}
(b) \textit{*I regretted the fact of going.}
(c) \textit{I regretted my going.}
(d) \textit{I regretted going.}

When we consider these sentences, it is clear that the problem for the ordering lies in example (7.b). In other words, the reason why

\textsuperscript{4} See P. and C. Kiparsky, "Fact".
\textsuperscript{5} See R. Stockwell, et al., "Nominalization".
FACT DEL must precede EQUI NP DEL is because gerundive factives and actions are assumed to have the same deep structure. Since the analysis proposed here differentiates, among others, between factive gerundives and actions in the deep structure, examples (7.a) and (7.d) do not have the same deep structure in my analysis. Instead, the factive gerundive has the same deep structure as that shown in example (24) in section 4.1. The ungrammaticality of (7.b) is explained not by the ordering of EQUI NP DEL, but by the fact that actions have the deep structure as indicated in (8) below; thus, a string like (7.b) could never occur because factives do not allow EQUI NP DEL. The deep structure of (7.d) is thus roughly:

(8)

```
NP
   V
   NP
   I
   regret
   D
   the
   N
   action

V
   [ +FACT ]
   [ +ACTION ]

I AUX go

[ +S ]
```

The sentence *I regret the action of going* is grammatical, with the abovementioned rider on *act-action* (see footnote 3).

Note that the factive interpretation of the matrix verb *regret* is expressed by the feature [±FACT]. This feature enables the grammar to predict that the speaker presupposes the truth of the embedded clause, and is thus needed for all factives in general, regardless of whether they take *that* clauses, FOR constructions, events, actions, etc.?

---

6 As noted in section 3.2, in a sentence like:
The last question to be discussed in this section is that of the feature \([+\text{EQUI NP DEL}]\), used in previous analyses to relate the deep structures of sentences like:

(9) (a) *I regretted (my) going.*

From the foregoing discussion, it is clear that in the analysis proposed here matrix verbs taking embedded actions do not need this feature, since *all* embedded actions must undergo deletion of the agent of the action, whether by \(\text{EQUI NP DEL}\) or by indefinite \(\text{NP}\):

(a) *For John to eat the meat surprised us.*

the speaker presupposes the truth of the \(\text{FOR}\)-construction, exactly as he does with *that* clauses or so-called factive gerundives. For this reason, the matrix verbs which imply this presupposition on the part of the speaker must be marked with the feature \([+\text{FACT}]\) at all times, in addition to the features determining the shape of their sentential complements.

It should be noted that this feature, or one very much like it, will also enable us to account for the difference in the presupposition concerning the noun phrase *an ant* in sentences like:

(a) *I imagined an ant on my plate.*

As is pointed out by the Kiparskys in "Fact", (section 5), the factive verb *ignore* presupposes the existence of the ant (on my plate), while the non-factive *imagine* does not. It is clear that assumption of this feature will not adequately explain the complex question of the presupposition about truth and existence with factives as opposed to nonfactive verbs. Until we have found a way of representing presuppositions directly, however, this feature seems to be a reasonable interim measure.

Although the Kiparskys are clearly aware of the complexity of this problem, they seem to have ignored the following additional complication. If we compare the sentences in example (a) with:

(b) *I reported an ant on my plate.*

we find that *report*, as noted by the Kiparskys, is neutral as to factivity. Verbs like *imagine, dream (about), wish (for),* on the other hand, seem to be "anti" factive, in the sense that they express a "contrary to fact notion", cf.

(c) \[
\begin{align*}
{\text{imagined}} & \quad \text{dreamed about} \\
{\text{wished for}} & \quad \text{ignored} \\
\end{align*}
\]

\[\text{an ant on my plate and suddenly there was one.}\]
deletion, while embedded propositions or events must not undergo deletion of their subjects. This claim entails that the rule of EQUI NP DEL is no longer optional, but instead is obligatory with all actions. Although this claim appears to capture a generalization, it seems clear that there may be a problem with embedded passives like:

(9) (b) John persuaded Bill to be examined by the doctor.

The question of passives and their relationship to actions will be taken up in section 5.1.4.

5.1.3 Agents on the Noun ‘Action’

I should like to turn now to the question of agents on the noun action. It was shown in the preceding section that the noun action does not take whole sentences as its complements, but only verb phrases. At the same time, this noun does allow a (possessivized) agent; cf.,

(10) (a) \{ The \ \\
        \{ His \ \\
        action of eating the meat ...

In this section, I will discuss the question of the origin of this agent on the noun action in relation to the agent of the action. Even a brief consideration of examples like (10.a) will reveal that the possessive noun or pronoun on the head noun is, indeed, the agent of the action in the complement verb phrase. There appear to be two reasons, then, to consider the possibility that the possessive on the noun action is derived by a raising rule which raises the agent of the embedded action sentence to the determiner position on the head noun. In the first place, embedded actions do not have a surface structure subject (agent), and in the second place, the agent on the head noun is also the agent of the action of the complement.

The following considerations argue against such a raising rule. The constructions in question are complex noun phrases, and a raising rule would violate the Complex NP Constraint, which has been shown to hold in all the other cases of noun complementation.
Thus, if we wanted to derive these agents on the head noun by a raising rule, actions would have to be marked by an exception feature.

Now, consider some of the matrix verbs allowing embedded actions from the point of view of whether they allow an agent on the noun action. The matrix verbs seem to fall into three groups in this respect. The first group allows such an agent, cf.

\[
(10) \quad \begin{cases} 
\text{John} & \begin{cases} 
\text{regretted} \\
\text{postponed} \\
\text{contemplated} \\
\text{considered}_2 
\end{cases} 
\end{cases} 
\begin{cases} 
\text{the} \\
\text{his}_1 
\end{cases} 
\begin{cases} 
\text{action of eating the} \\
\text{meat.} 
\end{cases}
\]

The second group does not allow an agent on the noun action, cf.

\[
(10) \quad \begin{cases} 
\text{John} & \begin{cases} 
\text{risked} \\
\text{dreaded} \\
\text{preferred} \\
\text{considered}_1 
\end{cases} 
\end{cases} 
\begin{cases} 
\text{the} \\
^*\text{his} 
\end{cases} 
\begin{cases} 
\text{action of eating the} \\
\text{meat.} 
\end{cases}
\]

The third group allows an agent on the head noun, but there is a meaning difference depending on whether action has an agent or an article, cf.

\[
(10) \quad \begin{cases} 
\text{John} & \begin{cases} 
\text{discussed} \\
\text{endorsed} \\
\text{defended} \\
\text{praised} \\
\text{derided} \\
\text{glorified} \\
\text{questioned} 
\end{cases} 
\end{cases} 
\begin{cases} 
\text{the} \\
\text{his} 
\end{cases} 
\begin{cases} 
\text{action of eating the meat.} 
\end{cases}
\]

Note that there are two verbs consider. One, call it consider\(_1\), is a verb of belief, and allows RAIS TO OBJ with embedded propositions, cf.

\[
(\text{a}) \quad \text{Fred considered}_1 \text{John to be a fool.}
\]

The other, call it consider\(_2\), is a factive, and means “ruminate, give careful thought”; cf.,

\[
(\text{b}) \quad \text{John considered}_2 \text{the fact that}...
\]

It is only consider\(_2\) that allows an agent on the noun action.
This means that if we wanted to account for the data presented in the sentences of example (10) by means of a raising rule, the grammar would have to include the following: In order to account for the verbs which do not allow an agent on the noun action (cf. (10.c)), the grammar would have to have an exception feature on the exception feature mentioned earlier, or we would lose the generalization that action permits an agent. In order to account for the verbs which show a meaning change with an agent on the noun action (cf. (10.d)), the grammar would have to contain a rule which deletes indefinite agents after they have been raised since there are no sentences like:

(10) (f) 

*John discussed endorsed someone's action of eating the meat.\footnote{Note moreover, that structures like:}

(a) John's action of eating the meat...

are not actions but events, because the following sentences are possible:

(b) John's action of eating the meat was the most exciting event of the evening.
(c) The event of John's action of eating the meat occurred at noon.

However, there are no sentences like:

(d) *The action of John's action of eating the meat...
(e) *The action of John's eating the meat was an action.

Barbara Partee (personal communication) pointed out that there are sentences like:

(f) Eating the meat was the most exciting event of my early years.

Note that there are no sentences like:

(g) *Eating the meat was the most exciting event of the evening.

It seems reasonable to explain the fact that (a) is an event, rather than an action, by saying that this is due to the fact that the sentence has a surface structure subject (agent). Note sentences like:

(h) The event of Charley's seeing the action occurred at noon.

Examples like (f) are difficult to explain, though if we consider it as opposed to (g) we find that it is again the presence of the agent ("my") which makes the sentence into an event, since sentences like (f) contain the subject of the event in the of/phrase (modifying the noun event).
(i.e. there can be no indefinite possessive pronouns with the noun action). For these reasons, I propose that the agent on the head noun action is not derived by a raising rule, but in some other way. The different proposals for the base will derive this agent on the noun action differently. In a grammar containing an X-bar convention, the agent would be a deep structure possessive under the node SPEC-N. In a case grammar, particularly one incorporating a modified X-bar convention, the agent would be a deep structure agent on the head noun, and would be moved to prenominal position by the same rule which moves subject to a preverbal position in sentences. In a grammar based on the transformationalist position, finally, the agent on the head noun action would be derived from an underlying sentence embedded on the noun action, or more probably on the verb act.10

5.1.4 Passives and Actions

Because passive sentences can undergo EQUI NP DEL, and it was claimed in section 5.1.2 that all actions have obligatory EQUI NP DEL, it may be thought that embedded passives like:

(11) (a) John persuaded Bill to be examined by the doctor.

describe actions. A moment's reflection, however, will make it clear that passives cannot describe actions. In the first place, the agent of the action expressed in the verb phrase is present in the surface structure (i.e. by the doctor), and it was shown earlier (cf. section 5.1.1) that embedded actions do not contain an agent. In the second place, there are no sentences like:

(11) (b) *The action of being examined by the doctor occurred at noon.

10 See N. Chomsky, “Remarks on Nominalization”; R. Stockwell, et al., Integration (particularly “Base Component”, “Case Placement”, and “Genitive”); and R. Lakoff, “Deep and Surface Grammar”. In these three models of the base, a construction like (a) would have been derived from an underlying structure like (b), (c), and (d), respectively, for the three models.
(c) *Being examined by the doctor is an action.

On the other hand, it is clear that passives can describe events, since there are sentences like:

(a) John's action of eating the meat

(b)  

(c)  

(d)  

In all instances, the second occurrence of John is deleted by EQUI NP DEL.
(11) (d) *(The event of) our being overtaken occurred in the second lap.*\(^{11}\)

(e) *(The event of) Bill's being examined by the doctor occurred at noon.*

Note, however, that it was also shown (cf. section 4.1) that events must have surface structure subjects, and that, therefore, an embedded passive whose subject has been deleted cannot be an event. That is, there are no sentences like:

(11) (f) *The event of being examined by the doctor occurred at noon.*\(^{12}\)

While subjectless embedded passives can be neither actions nor events, it is clear that they can be processes or states because there are sentences like:

(12) (a) *the process of being examined by the doctor ...*
(b) *the state of having been examined by the doctor ...*

Here, the difference between (12.a) and (12.b) is that one can "undergo" a process (but not an action or an event); but, once having undergone that process, one is "in the state" of having undergone that process. If we now consider some of the verbs allowing embedded subjectless passives, we find the following sets:

(12) (c) \[
\begin{align*}
\text{John} & \quad \{ \text{advised, persuaded, convinced, warned} \} \\
\text{Bill to be examined by the doctor.} & \\
\end{align*}
\]

\(^{11}\) I owe this example to Barbara Partee, personal communication.

\(^{12}\) That is, the subject of an event must be present in the surface structure, while the agent of an action must have been deleted before we have derived the surface structure. This appears to be the reason why sentences like *John regretted going* describe events, but the embedded gerundive is an action on the part of the agent John. With passives, the subject of the event need not be the subject of the gerund, the same as with actives (cf. section 5.1.3). For this reason, sentences like the following, pointed out to me by Barbara Partee (personal communication) are grammatical.

(a) *Being elected president was the most thrilling event of John's career.*
The matrix verbs advise, persuade, convince, warn (about), caution (about), prevent (from), force (into), etc. have future implications, i.e. the process, action, or event described by the complement will happen in the future, as seen from the time of the utterance of the sentence. On the other hand, the verbs absolve (of), accuse (of), convict (of), cure (of), etc., have past implication, i.e. the action, process, or event described in the complement happened in the past, as seen from the time of the utterance of the sentence.

The complements whose matrix verbs have future implications allow the paraphrase with process, and with a that clause with should, cf.

(13) (a)  
\[
\begin{align*}
\text{John} & \quad \begin{cases}
\text{advised} \\
\text{persuaded} \\
\text{...}
\end{cases} & \quad \begin{cases}
\text{Bill that he should be examined} \\
\text{by the doctor.} \\
\text{to undergo the process of being} \\
\text{examined ...}
\end{cases}
\end{align*}
\]

while the complements whose matrix verbs have past implications allow the paraphrase with state, cf.

(13) (b)  
\[
\begin{align*}
\text{John} & \quad \begin{cases}
\text{absolved} \\
\text{accused} \\
\text{...}
\end{cases} & \quad \begin{cases}
\text{Bill of being in the state of having been examined ...}
\end{cases}
\end{align*}
\]

This brief discussion indicates that embedded passives without surface structure subjects either describe processes, if their matrix verbs have future implications; or states, if their matrix verbs have past implications. That is, if a matrix verb has future implications and is marked [+] PROCESS, then it allows embedded passive complements which describe processes. If, on the other hand, a matrix verb has past implications and is marked [+] STATE, then it allows passive complements which describe states.
In both cases the subject of the embedded sentence must be deleted.\footnote{Note that expect is both a verb of belief and a verb taking (infinitival) actions, etc. As a verb of belief, expect takes propositions which can have the surface form of infinitives if the rule of RAIS TO OBJ has been applied, cf.

(a) $I \text{ expect } \{ \text{ that John will eat the meat. } \}
\{ \text{ John to eat the meat. } \}$

As a verb taking infinitival actions, processes, and states, etc. expect must undergo EQUI NP DEL, cf.

(b) $I \text{ expect } \{ \text{ to go } \}
\{ \text{ to be examined by the doctor. } \}$

This discussion indicates that EQUI NP DEL is not an optional rule at all, not even one which is obligatorily specified in the lexicon. Instead, depending on the type of complement on a matrix verb, the subject of the complement must or must not be deleted.

5.1.5. Infinitives as Actions

In this section, I will discuss certain infinitival complements. It will be shown that a well-defined subset of infinitival complements describes actions, and that the difference between gerundive and infinitive actions is due to the presence, as opposed to the absence, of the head noun action. The absence of this head noun with infinitives will be shown to have the predictable syntactic consequence of allowing the raising rules to move constituents from the infinitival complements into the matrix sentence.

In section 2.2.3 it was noted that simplexes can describe actions only when their verbs are action (i.e. non-stative) verbs, and they have (volitional) agents. It is clear that this restriction holds also for embedded actions. Thus the simplex John ate the meat was said, among others, to describe an action on the part of the agent John. Such actions are embedded on the noun action, cf.

\begin{equation}
(14) \text{ (a) } \begin{array}{c}
\{ \text{ John relished } \\
\text{ enjoyed } \\
(\text{the action of}) \\
\text{ eating the meat.} \\
\end{array}
\end{equation}

i.e. as an embedded action complement. On the other hand, a simplex like John is rich describes a state on the part of the subject
John. Such states are embedded as complements on the noun state, cf.

(14) (b) \[ \text{John} \left\{ \begin{array}{l}
\text{relished} \\
\text{enjoyed} \\
\end{array} \right\} \text{ (the state of) being rich.} \]

Now, however, note that simple sentences describing states and actions can also appear as surface structure infinitival complements, cf.

(14) (c) \[ \text{John} \left\{ \begin{array}{l}
\text{wanted} \\
\text{intended} \\
\text{tried} \\
\end{array} \right\} \text{ to \begin{array}{l}
\text{eat the meat.} \\
\text{be rich.} \\
\end{array}} \]

It is clear that infinitival complements describe actions as opposed to states under exactly the same conditions as do gerundive complements, namely, when they do not contain surface structure subjects, but do contain non-stative verbs. That is, the semantic interpretation of an infinitival or gerundive complement with respect to its describing an action or a state depends on the stativity or non-stativity of the verb of that complement, just as it does with the simple sentence underlying such complements, though with simplices the question of whether or not it contains an agent is also pertinent.

We find, thus, that the subset of infinitival complements without surface structure subjects but with non-stative verbs describes actions on the part of the matrix subject (or object, in sentences like \textit{John persuaded Bill to go}), just as do gerundive complements without surface structure subjects but with non-stative verbs.

In section 2.2.2, it was claimed that states and processes do not seem to have very important syntactic consequences. In light of the discussion in this section and in section 5.1.4, this statement must be modified slightly. States and processes appear to have the same syntactic consequences as do actions, in that all of these sentence types can occur as (deletable) head nouns with appropriate complements, and in that none of the complements can have a surface structure subject. This is true of gerundive as well as of infinitival complements describing actions, states, or processes. Because of
this similarity of syntactic behavior between these three sentence types, I will confine my discussion of infinitival complements largely to those describing actions, as I did with gerundive complements, with the understanding that the syntactic behavior of states and processes is the same as that of actions. The only type of embedded construction which appears to be unique to states and processes is the passive (see section 5.1.4 for a detailed discussion).

The semantic interpretation of both infinitival and gerundive complements is thus the same with respect to their being actions if the complement contains an action verb, and with respect to the subject or object of the matrix sentence being the agent of the action described in the complement.

There is also some syntactic support for considering infinitival complements as actions, states, or processes. In the first place, infinitives can occur across the copula from the nouns action, state, or process, cf.

(15) (a) \[ \{ \text{To eat} \} \text{Eating} \]
(b) \[ \{ \text{To be} \} \text{Being} \]
(c) \[ \{ \text{To be} \} \text{Being} \]

the meat was an action.
rich is a state.
examined is a process.

In the second place, infinitives can occur as subjects of adjectives describing actions, states, and processes, but not events and facts.14

(15) (d) \[ \{ \text{To eat} \} \text{Eating} \]
(e) \[ \{ \text{To be} \} \text{Being} \]
(f) \[ \{ \text{To be} \} \text{Being} \]

the meat was fun. fashionable. commendable.
rich was fun. fashionable. commendable.
examined was fun. fashionable. commendable.

Lastly, infinitives must also have the subject removed in the course of the derivation; that is, infinitives must not have a subject in the surface structure, nor can action complements have a subject. (For a detailed discussion of infinitives and action complements as sentential subjects, see section 5.1.6 below.)

Since, however, there are no sentences like:

\[(16) \quad *\text{Bill wanted tried the action (to eat the meat).}\]

it is clear that the matrix verbs taking infinitival complements do not take the noun action. This observation indicates that these matrix verbs are like the verbs of belief and some of the verbs of assertion, in that they take a sentential complement, but do not take the noun describing that complement. With verbs of belief and the few verbs of assertion, it was shown (cf., section 3.1) that they take embedded propositions but do not take the noun proposition; with verbs taking infinitive actions, it appears that they take embedded actions but do not take the noun action.

The Kiparskys\(^{15}\) find that one of the most important syntactic consequences of not having a head noun is the fact that complements without them are not protected by the Complex NP Constraint, and that, therefore, rules removing constituents from the embedded complement are permitted by the grammar to apply. This means that if infinitive actions do not have head nouns, then the rules moving constituents out of these complements should apply to them. As was noted earlier (see sections 3.2, 3.3, and 4.2), there are various rules moving constituents out of embedded sentences, including the raising rules and the rules fronting relative pronouns and question words. Of the raising rules, only NEG RAIS can apply to embedded actions since the other two rules raise the embedded subjects, and embedded actions cannot have a surface structure subject. With respect to NEG RAIS, it appears that only

\(^{15}\) P. and C. Kiparsky, "Fact".
a small set of verbs, including want, intend, etc. allow this rule with infinitive actions, cf.

(17) (a)  
\[
\begin{aligned}
\text{Bill} & \quad \{ \ 	ext{wanted} \\ \text{intended} \\ \text{tried} \\ \text{hoped} \} \\
\text{not to} & \quad \{ \ 	ext{touch a hair on her head} \\
& \quad \text{lift a finger for him} \}
\end{aligned}
\]

(b)  
\[
\begin{aligned}
\text{Bill didn’t} & \quad \{ \ 	ext{want} \\ \text{intend} \\ \text{*try} \\ \text{*hope} \} \\
\text{to} & \quad \{ \ 	ext{touch a hair on her head} \\
& \quad \text{lift a finger for him} \}
\end{aligned}
\]

(c)  
\[
\begin{aligned}
\text{Bill} & \quad \{ \ 	ext{advised} \\ \text{persuaded} \\ \text{reminded} \} \\
\text{Fred not to} & \quad \{ \ 	ext{touch a hair} \\
& \quad \text{on her head} \\
& \quad \text{lift a finger for him} \}
\end{aligned}
\]

(d)  
\[
\begin{aligned}
\text{*Bill didn’t} & \quad \{ \ 	ext{advise} \\ \text{persuade} \\ \text{remind} \} \\
\text{Fred to} & \quad \{ \ 	ext{touch a hair} \\
& \quad \text{on her head} \\
& \quad \text{lift a finger for him} \}
\end{aligned}
\]

As far as I can see at this time, these facts are best captured by a lexical redundancy rule on embedded infinitive actions, stating that NEG RAIS cannot apply to them. Verbs like want, intend, etc., are marked with an exception feature for this rule. As we should predict from the Complex NP Constraint, NEG RAIS does not apply to gerundive actions (which have the head noun action in the deep structure), cf.

(18) (a)  
\[
\begin{aligned}
\text{Bill regretted not having} & \quad \{ \ 	ext{touched a hair on her head} \\
& \quad \text{lifted a finger for him} \}
\end{aligned}
\]

(b)  
\[
\begin{aligned}
\text{*Bill didn’t regret having} & \quad \{ \ 	ext{touched a hair on her head} \\
& \quad \text{lifted a finger for him} \}
\end{aligned}
\]

(c)  
\[
\begin{aligned}
\text{Bill absolved Fred of not} & \quad \{ \ 	ext{touching a hair on her head} \\
& \quad \text{lifting a finger for him} \}
\end{aligned}
\]

(d)  
\[
\begin{aligned}
\text{*Bill didn’t absolve Fred of} & \quad \{ \ 	ext{touching a hair on her head} \\
& \quad \text{lifting a finger for him} \}
\end{aligned}
\]

With respect to the rules fronting relative pronouns and question words, we find that infinitive actions allow these rules, as we should expect, cf.
On the other hand, gerundive actions, as we should, again, expect from the Complex NP Constraint, allow these rules after head noun deletion, but not before, cf.

(20) (a) This is the head Bill regretted having touched.
   (b) What did Bill regret having touched?
   (c) This is the head Bill absolved Fred of touching.
   (d) What did Bill absolve Fred of touching?

(21) (a) *This is the head Bill regretted the action of touching.
   (b) *What did Bill regret the action of touching?
   (c) *This is the head Bill absolved Fred the action of touching.
   (d) *What did Bill absolve Fred the action of touching?

The data just presented indicate that a slight revision is in order for the features on the matrix verbs which determine the type(s) of embedded sentences these verbs allow. It has thus far been assumed that these features are of the form, e.g. for embedded actions [+ACTION]. Features of this type, however, will not differentiate between matrix verbs taking both embedded actions and the noun action, and matrix verbs taking embedded actions but not the noun action. That is, the feature mentioned above will not differentiate between matrix verbs taking infinitive actions and those taking gerundive actions, since it was shown that these two parameters coincide. For this reason, I propose that the simplest way of accounting for these two sets of verbs is to change the features on the
matrix verbs which determine the type(s) of embedded sentences a
matrix verb allows from [+ACTION]

1) Features of the form [+NP[ACTION]] for matrix verbs
taking both the head noun and the complement, since the fact that
the matrix verbs in question take the sentential complement can be
predicted based on the fact that they take the noun.

2) Features of the form [+s[ACTION]] for matrix verbs
taking only the sentential complement.

There is one set of matrix verbs which takes both gerundive and
infinitive actions (cf. also section 5.1.2). Compare the following
sentences:

(22) (a) Bill \{decided
planned\} to eat the meat.
(22) (b) Bill \{enticed
forced\} John \{to eat the meat.
\quad into eating the meat.\}

Because a number of matrix verbs are cross-classified with respect
to the types of embedded sentences they take, it was noted re-
peatedly (cf. sections 3.1, 3.2, 4.1) that I assume obligatory specifi-
cation in the lexicon. Since the embedded sentences of both types are
optional with the matrix verbs under discussion (i.e. they can all
take simple noun phrases as well as sentential complements), these
verbs are automatically specified in the lexicon as to whether they
will have an infinitive action or a gerundive one. If both features
are chosen, then the redundancy rule noted under 1) on this page
will apply vacuously, and the matrix verb will show a gerundive
action. If only the feature [+NP[ACTION]] is chosen in the
lexicon, then the redundancy rule will apply non-vacuously, and the
matrix verb will also show a gerundive action. If only the feature
+[s[ACTION]] is chosen, the redundancy rule is not
applicable, and the matrix verb will show an infinitive action.

We can summarize this section by saying that it has been shown
that infinitival complements with action verbs describe actions, but
that their matrix verbs do not take the noun action. It has been
shown that infinitive actions exhibit predictable syntactic behavior
with respect to all rules other than NEG RAIS. The realization that certain matrix verbs take sentential complements but do not take the noun characterizing the type of complement they take, has led to a slight modification in the form of the features subclassifying the matrix verbs in this respect.

5.1.6 Actions as Sentential Subjects

In this section, I will briefly discuss the question of actions as sentential subjects, and the problem of the agents of these actions. In section 5.1.1 it was noted that actions can occur as subjects of verbs. I will repeat some of these examples here.

(23) (a) The hanging of the condemned prisoner, The eating of the meat, The reading of the will occurred at noon
(b) Eating the meat, Hitting Bill was an action.
(c) The action of eating the meat, hitting Bill, hanging the condemned prisoner occurred at noon.

In addition, actions can also occur as subjects of certain adjectives, cf.

(24) (a) Reading the poem is exciting.
(b) Disregarding Halle’s arguments against phonemes can be dangerous.
(c) Watching the astronauts land on the moon is fascinating.

There are three problems in connection with actions as sentential subjects. The first is that of the deep structure agent of these actions; the second is that of their relation to the infinitives which can occur with the adjectives exemplified in (24); and, the third is that of the FOR-constructions which can occur with the adjectives in question.

The question of the deep structure agents of these actions is the
most central of the three mentioned, and I will therefore consider it first. In sections 5.1.1 and 5.1.5, it was noted that there are actions embedded in the verb phrase whose agent is indeterminate, and that this agent cannot occur in the surface structure. A moment's reflection will make it clear that this is also the case with actions as sentential subjects. Note, first of all, that there are no sentences like:

(25) (a) *(Some)one's reading the poem is exciting.
(b) *(Some)one's disregarding Halle's arguments against phonemes can be dangerous.
(c) *(Some)one's watching the astronauts land on the moon is fascinating.

just as there are no sentences like:

(25) (d) *John intended (some) one's leaving the house.

This general constraint on actions with indeterminate agents is in accordance with the fact, noted in section 5.1.1, that embedded actions must not have a surface structure agent within the embedded. Since there is a rule of indefinite NP deletion in the grammar in any case, it seems clear that this rule should be broadened to cover these cases also. In section 5.1.2 it was noted that EQUI NP DEL is not an optional rule, but is obligatory with embedded actions, states, or processes. It is clear now that this was only half of the generalization. The condition must be that embedded actions, states, and processes must delete their subject, if it is identical with the appropriate noun phrase in the matrix sentence or if it is indefinite. (Otherwise the sentence must block in any case.) These observations and arguments indicate that EQUI NP DEL is part of a more general rule of embedded subject deletion on certain embedded sentence types, as long as this deletion is recoverable (i.e. the deleted noun phrase must be identical with the appropriate noun phrase in the matrix sentence, or it must be indefinite).

In addition to gerundive actions, the set of adjectives under discussion also allows infinitive actions, cf.
(26) (a) To read the poem is exciting.
(b) To disregard Halle's arguments against phonemes can be dangerous.
(c) To watch the astronauts land on the moon is fascinating.

Because these infinitive actions are not of phrases (cf. section 4.2), they can be extraposed. That is, gerundive actions as subjects obey the general constraint that of phrases cannot be extraposed, while infinitive actions as subjects do not fall under this constraint and thus can be extraposed, cf.

(27) (a) *It is exciting reading the poem.
(b) *It can be dangerous disregarding Halle's argument ... 
(c) *It is fascinating watching the astronauts land on the moon.
(d) It is exciting to read the poem.
(e) It can be dangerous to disregard Halle's argument ...
(f) It is fascinating to watch the astronauts ...

Stockwell, et al. assume, correctly I believe, an impersonal one as the subject (agent) for both the gerundive actions and the infinitive actions in, e.g. (27). The authors do not relate, however, the absence of the agent of these actions-as-subjects to the absence of the agents of actions-as-objects.\(^{16}\) It was shown above and in sections 5.1.1 and 5.1.5 that this relation does exist. Also, they do not make the deletion of the agent obligatory with infinitive actions, so that the "impersonal one" deletion rule is quite unmotivated, and allows the grammar to derive the extremely marginal:

(28) *?!*It is exciting for one to read the poem.

as a fully grammatical structure. It will be shown below that structures like (28) could not be derived from an action-as-subject without the for phrase being part of the matrix sentence. It seems that this fact explains the marginal character of (28).

It is clear, however, that the infinitive actions under discussion are actions, and that they must, therefore, delete the agent just as gerundive actions must.

\(^{16}\) See R. Stockwell, et al., "Nominalization".
In addition to infinitive actions, the adjectives in question also allow for phrases in the predicate, cf.

(29) (a) To read the poem is exciting for him.
(b) To disregard Halle's arguments against phonemes can be dangerous for a phonologist.
(c) To watch the astronauts land on the moon is fascinating for us.

Because these structures look like FOR-constructions which have somehow been split, it has been assumed\(^\text{17}\) that the structures exemplified in (29) are related to those in (30) below.

(30) (a) For him to read the poem is exciting.
(b) For a phonologist to disregard Halle's arguments against phonemes can be dangerous.
(c) For us to watch the astronauts land on the moon is exciting.

If sentences like (29) are, indeed, derived from sentences like (30) they would constitute a serious counter-example to my claim that actions do not have surface structure subjects. It will be shown, however, that sentences like (29) are not derived from, and probably are not even related to, sentences like (30).

In the first place, gerundive actions can occur as subjects of these adjectives, and the adjectives can take a for phrase in the predicate in addition to the gerundive action, cf.

(31) (a) Reading the poem is exciting for him.
(b) Disregarding Halle's arguments against phonemes can be dangerous for a phonologist.
(c) Watching the astronauts land on the moon is fascinating for us.

It could not be argued that the noun phrase in the FOR-construction is the subject of the gerundive actions since gerundives never

---

show subjects which are in for phrases. In the second place, another for phrase can be added to at least some of the sentences like those (30), cf.

(32) (a) For him to read the poem is exciting for us.
(b) For the author to disregard Halle's argument against phonemes can be dangerous for the reader.
(c) For us to watch the astronauts land on the moon is fascinating for (to?) our children.

Lastly, note that the FOR-constructions in (30) and (32) are not actions. As was shown by Lees\textsuperscript{18} actions can be "healthful", "fun", etc. The FOR-constructions in the examples above, however, cannot occur as subjects of adjectives like fun, healthful, enjoyable, cf.

(33) \begin{align*}
&\text{For him to read the poem} \\
&\text{For a phonologist to disregard Halle's argument against phonemes} \\
&\text{For us to watch the astronauts land on the moon}
\end{align*}

\begin{align*}
&\text{enjoyable.} \\
&\text{fun.} \\
&\text{healthful.}
\end{align*}

For these reasons, it seems clear that FOR-constructions are not actions.

As a last piece of evidence that infinitive actions in subject positions are not derived from FOR-constructions, note that there are numerous gerundive and infinitive actions which show that the person(s) in the for phrase are not the agent(s) of the embedded action. Consider the following:

(34) (a) \begin{align*}
&\text{Surfing} \\
&\text{To surf}
\end{align*}

\begin{align*}
&\text{dangerous} \\
&\text{exciting} \\
&\text{enjoyable}
\end{align*}

\text{for the spectators.}

(b) \begin{align*}
&\text{Flying} \\
&\text{To fly}
\end{align*}

at an altitude of less than 100 feet can be

\textsuperscript{18} See R. Lees, Grammar of English Nominalization, 71f.
ACTIONS

\[
\begin{align*}
\{ \text{dangerous} \} & \quad \text{for the} \quad \{ \text{passengers} \} \\
\{ \text{enjoyable} \} & \quad \text{for the} \quad \{ \text{spectators} \} \\
\{ \text{exciting} \} & \quad \text{(Producing)} \quad \text{shows full of violence and sex can be dan-} \\
& \quad \text{gerous for the morals of the public.}
\end{align*}
\]

From this discussion, it is clear that the FOR-constructions which can occur as subjects of this class of adjectives do not underlie infinitive actions which can also occur there, and that, furthermore, structures of the form:

\[(34)\]

\[
\begin{align*}
(d) & \quad \text{It is exciting for him to read the poem.} \\
(e) & \quad \text{It can be dangerous for the author to disregard Halle's argument against phonemes.} \\
(f) & \quad \text{It is fascinating for us to watch the astronauts land on the moon.}
\end{align*}
\]

are ambiguous between an extraposed FOR-construction and an embedded infinitive action extraposed beyond a for phrase in the matrix sentence.\(^{19}\)

In summary, it has been shown in this section that actions as subjects can be of two forms, gerundive and infinitive. The former, since they are derived from of phrases do not allow extraposition,

\(^{19}\) Barbara Partee (personal communication), pointed out to me that there are sentences of the form:

\[(a)\]

\[
\begin{align*}
\{ \text{Seeing} \} & \quad \{ \text{herself} \} \quad \text{on TV was exciting for Susan.} \\
\{ \text{To see} \} & \quad \{ \text{himself} \}
\end{align*}
\]

I think that these are from an underlying sentence with an embedded action, cf.

\[(b)\]

\[
\begin{align*}
\text{NP} & \quad [\text{NP[the action]} \quad \text{[one AUX see one on TV]}] \quad \text{was exciting for Susan.}
\end{align*}
\]

with reflexivization applying on the lower cycle, and subject deletion on the cycle of the matrix verb, because in a sentence like:

\[(c)\]

\[
\begin{align*}
\{ \text{Seeing} \} & \quad \{ \text{herself on TV was exciting for Susan but not for Betty} \\
\{ \text{To see} \}
\end{align*}
\]

the herself is ambiguous between Betty and Susan for the conjoined sentence. I do not, at this point, have an explanation for how the reflexive is made to agree with the noun phrase in the for phrase. Note, however, that this is not the only case where the rule of reflexivization must “go down into” an embedded sentence. In his paper, “On Declarative Sentences”, J. Ross showed this to be necessary for the verb declare; and Jackendoff’s “An Interpretive Theory of Pronouns and Reflexives”, shows this for picture nouns.
while the latter do. Actions as sentential subjects behave like other actions with respect to the fact that they do not allow surface structure agents. This observation led to the conclusion that EQUI NP DEL is part of a more general rule which deletes the subjects of embedded actions, states, and processes. Lastly, it was shown that the for phrases possible with adjectives taking action subjects are independent of the action (i.e. are not necessarily the agent of the action), and that the apparently related FOR-constructions, which also show up with these adjectives, are not from deep structures having the features \( +_{NP}[\text{ACTION}] \) for gerundive actions, and \( +_{s}[\text{ACTION}] \) for infinitive actions respectively (i.e. the former are not embedded actions).

It should be pointed out here that although this analysis appears to double the features needed for complementation, this is really not the case. In the first place, note that only those few verbs which take both gerundive and infinitive actions will have both of the last-mentioned features. In the second place, and more important, features like these are needed in any analysis of complementation in order to avoid generating the ungrammatical strings in, e.g.

\[
\begin{align*}
(35) \quad & (a) \quad \text{John} \left\{ \begin{array}{l}
\text{intended} \\
\text{expected}
\end{array} \right\} \left\{ \begin{array}{l}
to \text{eat} \\
*\text{eating}
\end{array} \right\} \text{the meat.}
\end{align*}
\]

\[
\begin{align*}
& (b) \quad \text{John} \left\{ \begin{array}{l}
\text{enjoyed} \\
\text{practiced}
\end{array} \right\} \left\{ \begin{array}{l}
*\text{to eat} \\
\text{eating}
\end{array} \right\} \text{the meat.}
\end{align*}
\]

There is, however, another point worth noting with respect to features in general. While I have kept the discussion on complementation in general free of considerations of the type of base which needs to be assumed for an adequate explanation of syntactic and semantic phenomena, mainly because an analysis of complementation is essentially independent of the type of base assumed, it is clear that there are arguments of various kinds which can be brought to bear upon this question. One such argument is based on features and feature savings. Any base like the (modified) standard theory[^20]

[^20]: For detailed discussion, see N. Chomsky, "Some Empirical Issues in the Theory of Transformational Grammar".
which differentiates between subject and object in the deep structure will have a much larger number of features than will, for example, a case grammar. There are two reasons for this difference in the number of features. The first has to do with verbs like break,\textsuperscript{21} the second has to do with sentential complements on abstract head nouns like fact, etc. as opposed to sentential noun phrases. If Stockwell, et al. are correct in concluding that a structure of the form the fact + S is a deep structure INST case, while a sentential noun phrase is a deep structure OBJ (NEUTRAL) case, then it stands to reason to assume that in this grammar all structures of the form head noun + S are deep structure INST cases, while sentential noun phrases are deep structures OBJ (NEUTRAL) cases — at least until there is some evidence to the contrary.\textsuperscript{22} In other words, a case grammar, for example, represents substantial savings in terms of the syntactic features to describe various types of restrictions, in addition to any other advantages claimed for it. Needless to say, an adequate theory of linguistics will allow us to weigh such savings of features, as compared with savings, simplifications, or complications in other parts of the grammar.

5.1.7 Further Remarks on EQUINP DEL

In sections 5.1.2 through 5.1.6, various constructions which do not have a surface structure subject were discussed. In this section, I would like to discuss and summarize the evidence presented in the earlier sections from the point of view of EQUINP DEL. I should also like to offer some additional evidence, taken from a paper by Postal and one by Perlmutter.

As been noted before, the rule of EQUINP DEL has traditionally been stated as a rule which is optional with some verbs (e.g. want, expect), obligatory with other verbs (e.g. condescend, try), and in-

\textsuperscript{21} For detailed discussion, see C. Fillmore, “The Case for Case”.
\textsuperscript{22} For detailed discussion, see R. Stockwell, et al., “Nominalization”. In this connection, note that if we accept S. Thompson’s proposal (summarized in section 3.1.2), the features can be simplified even further.
applicable to a third set of verbs (e.g. say, believe). The problem is 
this: if verbs like want, expect, etc. are either unmarked for EQUi
NP DEL or have a syntactic feature [+/-EQUi NP DEL] (the 
two are notational equivalents of each other) in the tree, then the 
grammar will generate sentences like

(36) *John \{ wanted \}
   \{ expected \}
   \{ himi \}
   \{ himself \}
   \{ to go. \}

One way of avoiding the generation of sentences like (36) is to have 
obligatory specification in the lexicon. In terms of EQUi NP DEL, 
obligatory specification means that all verbs which take this rule 
optionally will be specified positively or negatively when they are 
inserted into the tree, so that, as far as the actual rule of EQUi NP 
DEL is concerned, this rule is no longer optional, since the verb 
will be marked positively or negatively for EQUi NP DEL, just as 
are verbs which must or may not take this rule respectively.

While the solution of obligatory specification outlined here will 
obliterate the problem of EQUi NP DEL with verbs like want, expect, 
etc., this solution does not solve the problem created by the neces-
sity to delete head nouns like fact before application of the rule of 
EQUi NP DEL, and before the raising rules, since the EQUi NP 
DEL must precede the raising rules. It was noted earlier (see section 
3.2 for a detailed discussion), that ordering the rule deleting the 
head noun before the raising rules does away with many of the 
syntactic advantages claimed by the Kiparskys for these head nouns. 
It was also noted that the general analysis of complementation 
proposed here can order the rule deleting head nouns late enough to 
use the Complex NP Constraint to prevent the raising rules from 
applying to complements having head nouns, and late enough to 
account for extraposed complements whose head nouns were left 
in their original position. It was then shown (see section 4.2) that 
this late (post-extraposition) deletion of head nouns will auto-
matically account for the fact that gerundive clauses cannot be 
extraposed, since, in the analysis proposed here, gerundive clauses 
are still of phrases (cf. the fact of his leaving ... (when the rule of
extraposition applies, and in English *of* phrases cannot in general be separated from their head nouns.

The analysis proposed here achieves these solutions by differentiating between propositions (including factives) and events, on the one hand, and action, states, and processes on the other. It was shown that propositions and events must have surface structure subjects, while actions (etc.) may not have surface structure subjects. This observation was taken to mean that the former types of embedded sentences do not allow the rule of EQUi NP DEL, while the latter type demands this rule.

It is clear from sections 5.1.6 and 5.2.2, however, that actions (including activities, cf. section 5.2.2), states, and processes can also occur with either the impersonal *one* or an indefinite *NP* as their subjects. In both cases, these subjects must be deleted with embedded actions(etc.). This observation, coupled with the earlier one concerning the fact that embedded actions (etc.) may not have a surface structure subject, was taken to mean that the rule of EQUi NP DEL is only one realization of a more general constraint which says that embedded actions, states, and processes, must not have surface structure subjects, and that the grammar must, therefore, delete such subjects. Since the grammar also contains a constraint on the recoverability of deletions, subject deletion in embedded actions, etc. will occur only under the appropriate circumstances, namely, when the subject *NP* of an embedded action (etc.) is indefinite, an impersonal *one*, or identical with the appropriate *NP* in the matrix sentence.

It is interesting to note that there are two papers dealing with related questions which provide independent support for the analysis of subject deletion on embedded actions (etc.) proposed here. The first of these is found in a paper by Perlmutter who finds that there are two verbs (or two lexical entries for the one verb) *begin*. One, call it *begin₁*, occurs in sentences like (37.a), with a deep structure like (37.b):

(37) (a) The house began to crumble.

23 See D. Perlmutter, "Two Verbs *begin". 
The deep structure in (37.b) is thus the same as that for verbs like seem, appear, likely, etc. Whereas the latter verbs have either obligatory extraposition or obligatory RAIS TO SUBJ, begin has only obligatory RAIS TO SUBJ (cf. it appears that John is here and John appears to be here versus *it began that the house crumbled).

Perlmutter supports his analysis by the following examples and observations:

1. Begin takes nominalized sentences of the form

(37) (c) The doling out of emergency rations began.

2. There are sentences like

(37) (d) There \{ seemed, appeared, began \} to be a commotion.

Here Perlmutter notes that sentences like (37.d) would be impossible if we took there to be the deep structure subject of begin since there is independent evidence suggesting that there is not present in the deep structure at all, but must be transformationally inserted. This evidence has to do with the fact that there can only occur with a small number of intransitive verbs like seem, appear, likely, and be. There cannot occur with kill, for example, i.e. there are no sentences of the form

(37) (e) *There killed a policeman a demonstrator.

However, the passive of (37.e) does have a corresponding sentence with there, cf.

(37) (f) A demonstrator was killed by a policeman.
(g) There was a demonstrator killed by a policeman.

Perlmutter concludes from these examples that

Whether or not there can occur in such sentences cannot be determined on the basis of their deep structure alone, for their deep structures do not contain a verb with which there can co-occur. It is only if the passive transformation has applied introducing be, that these sentences can contain there.  

The other begin, call it $begin_2$, is found in sentences like (38.a), with a deep structure like (38.b):

(38) (a) John began to eat.

(b) 

```
      S
     /\  
    /  \ 
 NP  VP
     |  |
   John begin John AUX eat
```

The structure exemplified in (38.b) is that traditionally assumed for the verb begin, and I will, therefore, not discuss it beyond saying that this is clearly the deep structure which the present analysis assumes to underlie actions, states, etc. embedded under the verb begin$_2$.

What is noteworthy from the point of view of the present analysis is the fact that verbs like begin, seem, appear, etc. are the only verbs in English which apparently have deep structure subjects in their complements which are not agents, but which must be deleted. That is, if a sentence like (37.a) had a deep structure like that shown in (38.b), my claim that embedded propositions do not allow deletion of their subject would be incorrect, as would its correlary that only embedded actions (etc.) demand this deletion. The deep structure

---

24 See D. Perlmutter, “Two Verbs begin”, and footnote 5, above.
for sentences like (37.a) which was proposed by Perlmutter (and shown as (37.b)) supports the present analysis in that it shows that there is no deletion of an embedded subject in sentences like (37.a), e.e. with begin₁.

The second paper I would like to discuss here is one by Postal. Postal shows that what had been thought of as a single rule of EQUI NP DEL is in reality two rules, at least in the framework traditionally assumed, i.e. that discussed at the beginning of this section. Postal also finds that the rules of EQUI NP DEL and pronominalization operate under identical circumstances (in identical environments), and he comes to the conclusion that EQUI NP DEL is really part of the pronominalization rule(s). Since Postal’s work is generally available, I will only summarize his arguments briefly.

Postal points out that Lakoff argues that EQUI NP DEL must be a cyclical rule on the grounds that it applies in some sentences between what I have called RAIS TO OBJ and passive. Since it can be shown that both of the latter rules are cyclical, it follows that EQUI NP DEL must also be a cyclical rule. The sentence given by Postal as the crucial example is

\[
(39) \text{(a)} \quad \text{Joe was thought by everyone to want to be seen by Mary trying to kiss Lucille.}
\]

This sentence must have a deep structure like

\[
(39) \text{(b)} \quad \text{everyone thought } s₄ \ [\text{Joe wanted } s₃ \ [\text{Mary see } s₂ \ [\text{Joe try } a \ [\text{Joe kiss Lucille} \ s₁]s₂]s₃]s₄]
\]

(The occurrence of Joe was lettered for ease of reference.) Here

Joeₑ must be elided before Joeₑ is raised. Consequently, application of EQUI NP DEL precedes that of RAIS TO OBJ. Joeₑ must be raised and then passivized, before it will be a subject which will be subject to

\[26\] See G. Lakoff, “Deep and Surface Grammar”.
deletion by EQUI NP DEL. And then Joe, must be deleted before Joe is raised. Overall, then, there must be the sequence of rule application:

EQUI NP DEL
RAIS TO OBJ
PASSIVE
EQUI NP DEL
RAIS TO OBJ
PASSIVE

... Thus one seems to have shown, using Lakoff's argument, that EQUI NP DEL is a cyclical rule...27

The second step in Postal's argument is to show that pronominalization cannot be a cyclical rule. This follows from the fact that pronominalization must follow WH FRONTING in questions, and it can be shown that WH FRONTING must be a last cyclic or a post-cyclic rule. This latter fact follows from sentences like

(39) (c) Who did you think Bill wanted Mary to talk to?
(d) To whom did you think Bill wanted Mary to talk?
(e) *Who did you think Bill wanted to Mary to talk?
(f) *Who did you think to Bill wanted Mary to talk?
(g) *Who did to you think Bill wanted Mary to talk?

That is, a preposition like to can occur either in its original position, or before the WH question word, but not at the beginning of any of the sentences to which that WH question word would have to be transported if WH FRONTING were a cyclical rule. This constraint follows automatically if WH FRONTING is a last or post-cyclic rule, and the rule contains the option of carrying the preposition with it.

But now note the following sentence pair:

(40) (a) Which of the men who visited her do you think Betty hated?
(b) Which of the men who visited Betty do you think she hated?

Here (40.b) cannot be derived if pronominalization is assumed to be

27 See P. Postal, "On Coreferential Subject Deletion", 12
a cyclical rule, since the occurrence of Betty in the relative clause does not command that in the matrix sentence. This means that the pronominalization shown in (40.b) cannot occur until after WH FRONTING has occurred, which places the NP, including the relative clause containing Betty, to the left of the Betty occurring in the matrix sentence. The latter occurrence of Betty can then be pronominalized by forward pronominalization.

The third step in Postal's argument is the observation that pronominalization and EQUI NP DEL share a number of environments. This means that "certain otherwise ad hoc restrictions on EQUI NP DEL are predictable from independently necessary constraints on pronominalization, if EQUI NP DEL applies to structures only when they have already undergone pronominalization."28

In a series of rather complex arguments which I will not enumerate here, Postal then shows that the claim quoted above is correct.

From these two arguments Postal then draws the conclusion that we have the contradictory evidence that EQUI NP DEL must be at once a cyclical and a last or post-cyclical rule. It is clear, however, that no rule can be both cyclical and post or last-cyclical. Postal's proposal for ridding the grammar of this dilemma is this: EQUI NP DEL is not one rule but two. The first part of this rule, which he calls DOOM MARKING is cyclical; the second part of this rule, the actual deletion of the pronoun (since pronominalization has turned the NP into a pronoun) is last or post-cyclical, and simply deletes all pronouns marked [+DOOM].

From the facts presented by Postal in the paper discussed here, it appears that his conclusions are correct. It is clear, however, that if the analysis of actions (etc.) as opposed to propositions and events proposed here is correct, then the cyclical rule of DOOM MARKING is not necessary. I have proposed a general constraint on actions, states, and processes which states that these sentence types may not have a surface structure subject when they are embedded. There are two situations in which the constraints on recoverability allow the grammar to delete such subjects:

28 See P. Postal, "On Coreferential Subject Deletion", 16
1. if they are indefinite or impersonal pronouns;
2. if they are identical to an appropriate NP in the matrix sentence.

The first case is not at issue here since Postal's paper does not deal with pronouns of this type. Deletion of indefinite and impersonal pronouns is thus not affected by Postal's arguments. In the second case, Postal's arguments indicate that the subject NP in embedded actions (etc.) must first undergo DOOM MARKING (in the cycle), then pronominalization (last or post-cyclic), and finally erasure (also last or post-cyclic). The rule of DOOM MARKING is thus needed only to ensure erasure in the proper environments, i.e. to avoid generating sentences like

(40) (c) *John\textsubscript{t} wanted\textsubscript{t}/expected\textsubscript{t}/etc. him\textsubscript{t} to go.
(d) *John\textsubscript{t} wanted to be seen by Mary his\textsubscript{t} kissing Lucille.

But now note that the deep structure subject of an embedded action (etc.) will be pronominalized only if it is identical to an NP in the matrix sentence. It is clear, therefore, that we do not need both DOOM MARKING and the constraint on subject deletion of embedded actions if the latter is reformulated slightly:

(41) The deep structure subject of an embedded action, state, or process must be deleted. Definite pronouns may only be deleted if they refer to the appropriate NP in the matrix sentence.

This constraint is to be interpreted in conjunction with Postal's constraint on deletion,\textsuperscript{29} which states that NP deletion is confined to pronouns. Postal supports this constraint by nothing that there are various environments in which pronominalization precedes deletion. Some of his examples are:

(42) (a) The reptile (which) Harry carries around...
(b) (i) The oldest man who ever batted 350 ...
(ii) The oldes man ever to bat 350 ...

\textsuperscript{29} See P. Postal, "On Coreferential Subject Deletion", 41
(c) (i) John is so ugly that Mary won't kiss him.
(ii) John is too ugly for Mary to kiss.
(d) I visited France in order to assassinate DeGaulle.
(e) John annoyed Harry by (his) pinching Lucille.

It is clear that such a constraint would have some additional advantages not noted by Postal. In the first place, such a constraint would allow us to relate complements and conjunctions like the following in a more explicit manner.

\[
(43) \begin{align*}
(a) & \quad \text{John expects} \quad \{ \text{that he will go.} \\
& \quad \text{to go} \\
(b) & \quad \text{John sang and (he) danced.}
\end{align*}
\]

On the other hand, it is also clear from conjunctions like

\[
(43) \begin{align*}
(c) & \quad \text{John ate the cake and Mary did too.} \\
(d) & \quad \text{John and Mary ate the cake.}
\end{align*}
\]

that ultimately the constraint on deletion proposed by Postal will have to be extended to cover both nominal and verbal elements as erasing constituents, and both pronominal and proverbal forms as erased constituents.

5.2 ACTS AND ACTIVITIES

In section 3.3.2, it was noted that acts and activities are subtypes of actions. There are, however, some minor problems with embedded acts and activities which I want to discuss briefly in this section. I will consider acts first, and activities second.

5.2.1 Acts

It was claimed in section 2.2.3 that:

\( \text{(D) An act is an action which the speaker considers to be important.} \)

This statement implies that the (head) noun act carries the im-
plication of importance by itself, regardless of the semantic content of the rest of the sentence. Thus, although the head noun *act* is often used in sentences overtly expressing, e.g. censure or admiration, its use alone implies such emotions on the part of the speaker. Consider the following sentences.

(44) I saw him in the act of \{stealing the bike. sneaking a smoke looking at her legs. having a drink.\}

and note that, while the first two embedded actions carry the censure overtly, the last two actions certainly do not. Notice, moreover, that the act of *looking at his chest* may be one the speaker admires or censures, as expressed by the intonation pattern one uses when uttering the sentence.

There is, however, one problem with the usage of the head nouns *act* and *action*, in relation to the characterization given in (D), above. As was noted in section 5.1.3, a number of my informants find the head noun *action* to be marginal in their speech, and prefer the head noun *act*. Since I did not want to influence their judgment unduly with my own (and Vendler’s, cf. section 2.2.3) notion about the usage of the head noun *act*, I did not press them to explain their preference. It is clear, however, that the head noun *action* carries very little semantic information, while *act* carries the notion of importance discussed earlier. That is, it is clear to the speaker that embedded subjectless gerunds and infinitives can express actions, and since this information is present in the type of verb of the gerund or infinitive and in the fact that there is no agent in the surface structure of the embedded sentence, the head noun *action* may be felt to be tautologous.

On the other hand, it is possible that not all speakers share the notion that the (head) noun *act* carries the semantic notion of “important action”. The latter speculation has some support from historical considerations, as well as from the fact that those of my

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30 As was noted in section 2.23, the speaker must consider an action to be important before it can merit either censure or admiration.
informants who find the (head) noun *action* not quite acceptable do seem to use the (head) noun *act* as implying a significant action. In general, the use of the head nouns with which I am concerned here are fairly recent innovations. Compare, in this connection, the O.E.D. on *fact, idea, act, action*, etc.

It appears at this point that there is no complete agreement as to where head nouns like the ones under consideration may appear in the surface structure. From the data and arguments I have cited, however, it would appear that even those of my informants who do not find the head noun *action* fully acceptable in many cases, have the same constraints on extraposition, pronominalization, and passivization with respect to gerundive actions as do people in whose dialect this head noun occurs freely. For this reason, it seems that it is simplest to assume the existence of this head noun in the deep structure of all speakers of English, and have a late deletion rule for some of them (and for others an obligatory morphological spelling rule which changes *action* to *act*).

### 5.2.2 Activities

In addition to *act* and *action*, the head noun *activity* can also be found occasionally on gerundive verb phrases. Consider the following sentences.

31 The O.E.D. entry for *fact* shows that phrases like *the fact that* and *the fact of* are recent innovations used in order to avoid certain types of gerundive constructions, particularly those with inanimate subjects, like:

(a) *I was unaware of the Kitchen's being draughty.*

(b) *The kitchen's being draughty annoyed him.*

The earliest citation for *the fact of* is from the eighteenth century, and there is no citation for *the fact that*. As an interesting sidelight, in the sixteenth and seventeenth centuries, *fact* meant "feat", i.e. "deed" or "action", especially "criminal action". The originally extended reading of "something which has really occurred" replaced the original reading, and was then again extended to "something known (hence "presupposed") to be true".

I should also like to point out that in "Fact", Kiparsky and Kiparsky indicate that A. A. Hill has informed them that he is able to use the head noun *fact* with matrix verbs which do not, at least to the Kiparskys and to my informants, imply the presupposition that the complement is true.
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(45) (a) He \{\text{likes, enjoys}\} (the activity of) \{\text{hunting lions, skiing, surfing at high tide}\}

(b) (The activity of) \{\text{hunting lions, skiing, surfing at high tide}\} \text{can be} \{\text{fun, healthful, dangerous}\}

From the discussion in section 5.1.6, it is clear that the gerunds in these examples describe actions. In addition, note that extraposable infinitives without the head noun *activity* can also be found with this set of adjectives; cf.,

(45) (c) \text{It is} \{\text{fun, healthful, dangerous}\} \text{to} \{\text{ski, surf at high tide}\}

The question, of course, is what makes activities differ from actions. The answer will become clear if we consider the following ungrammatical strings.

(45) (d) \text{*The activity of} \{\text{reading the poem at noon, disregarding Halle's arguments against phonemes in his book on phonology}\} \text{was fun.}

(45) (e) \text{*He} \{\text{enjoyed, liked}\} \text{the activity of} \{\text{reading the poem at noon, disregarding Halle's argument against phonemes in his book on phonology}\}

These examples indicate that activities are generic actions.

As for matrix verbs and adjectives allowing activities, the restrictions for this type of embedded sentence are exactly the same as they are for the other head nouns discussed in this work. Any verb or adjective which takes the noun *activity* also takes a gerundive complement describing activities. A brief look at the verbs and adjectives which take actions will show that apparently all of
them also take activities. Thus, in subject position we find, e.g.\(^{32}\)


Similarly, in object position we find, e.g.

(46) (b) John abhorred/considered/defended/endorsed/feared/glorified/hated/justified/liked/missed/noticed/praised/questioned/recommended/savored/vetoed/welcomed/etc. (the activity of) hunting lions.

And in oblique position we find, e.g.

(46) (c) John approved of/boasted about/engaged in/planned on/protested against/reacted against/etc. (the activity of) hunting lions.

and

(46) (d) \(\begin{aligned}
\text{absolved} & \quad \text{of} \\
\text{bullied} & \quad \text{into} \\
\text{coaxed} & \quad \text{into} \\
\text{deterred} & \quad \text{into} \\
\text{enticed} & \quad \text{into} \\
\text{forced} & \quad \text{into} \\
\text{goaded} & \quad \text{about} \\
\text{lectured} & \quad \text{about} \\
\text{pestered} & \quad \text{of} \\
\text{reminded} & \quad \text{from} \\
\text{saved} & \quad \text{into} \\
\text{tricked} & \quad \text{into}
\end{aligned}\)

\(\text{John}\) \(\text{Bill}\) (the activity of) hunting lions.

With adjectives, we find the following, e.g.

(46) (e) \(\text{(The activity of)} \) hunting lions is alarming/dangerous/exciting/fun/horrifying/interesting/justified/laudable/praiseworthy/etc.

\(^{32}\) The verbs are taken from P. Rosenbaum, \textit{The Grammar of English Predicate Complement Constructions}, Appendixes.
These examples indicate that the grammar contains a set of verbs and adjectives which are marked positively in the lexicon for taking activity as subject, object, or in oblique position. This class appears to be coextensive with the class of verbs and adjectives taking action, so that the marking for activity can be introduced by a redundancy rule on the marking for action. The features in question are \([+_\text{NP}\text{[ACTIVITY]}]\) for objects, \([+_\text{NP}\text{[ACTIVITY]}]\) for subjects, and \([+_\text{[PREPNP}\text{[ACTIVITY]}]\) or \([+_\text{NP}\text{[PREPNP}\text{[ACTIVITY]}]\) for the oblique positions. As with other head nouns, the semantic rules operate on the embedded activities and check whether they are compatible with the head noun. (For a detailed discussion, see section 3.1.2).

### 5.3 ACTIONS, PERFORMATIVES, AND IMPERATIVES

Austin\textsuperscript{33} notes that there appears to be a relationship between performatives and imperatives, although he does not explain what this relationship may be. If we accept Ross' proposal\textsuperscript{34} concerning declaratives (propositions), then propositions which appear as simple sentences in the surface structure will have a deep structure like:

\[(47) \, (a)\]

![Diagram](image)

while performatives like (47.b) will have a deep structure like (47.c):

\textsuperscript{33} See J. Austin, “Performative Sentences”, and his How to do Things with Words.

\textsuperscript{34} See J. Ross, “On Declarative Sentences.”
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(47) (b) *I (hereby) sentence you to spend six months in jail.*

If we follow Austin's suggestion and Ross' deep structure, then imperatives like (47.d) will have a deep structure like (47.e):

(47) (d) *Eat the meat!*

Thus, all three structures would at least have parallel deep structures under this proposal. The only difference would be that declaratives and imperatives (optionally) delete their respective matrix sentences, while other performatives would not.

There may be a question as to how the grammar disallows the occurrence of performative verbs as verbs of embedded sentences, i.e. how to avoid generating sentences like (47.f). This does not present a problem, however. Note that declare is the only performative verb marked [+s[PROPOSITION]]. Performative verbs like command, sentence, christen, pronounce, etc. are not matrix verbs of sentences expressing propositions but verbs describing actions, and they are marked with a feature indicating this fact. Hence, the semantic rules will block deep structures like (47.f) from being realized as wellformed surface structures. (For
(47) (f)

detailed discussion, see section 3.1.2.) The same mechanism will disallow recursion of the verb *declare*. On the other hand, the embedding of a performative verb like *sentence* under another performative verb like *command* will be blocked because structures like these cannot delete the agent of the embedded action. Performative verbs, however, are marked [+\_\_\_\_S[ACTION]], and therefore must delete the agent of the embedded action, since embedded actions do not have surface structure agents (cf. sections 5.1.1 and 5.1.2). Compare the following deep structure.35

35 Note that the sentence embedded under command in, e.g.
Note that the subject of *command* must be the first-person singular since this is the only possible subject for performative verbs. The indirect object of *sentence*, however, must be *you*, since this is the only possible indirect object for performative verbs. The rule of EQUI NP DEL therefore cannot apply on the cycle of *sentence*, nor can the rule of INDEF NP DEL. The structure, therefore, blocks automatically since it does not fulfill the condition on embedded actions, which is deletion of the agent.

In addition to the parallel deep structures for the three sentence types mentioned, the structure in (47.e) has two syntactic advantages. First, it is clear that the sentences under the verbs of command are actions. Since, moreover, they are infinitive actions, cf. (48) (a) *I command you to eat the meat.*

we do not expect the verbs of command to take the noun *action* (since, as shown in section 5.1.5, infinitives do not take this noun), as indeed they do not, cf.

(48) (b) *I command (you) the action.*

but we do expect them to take the verb *perform*, which they do, cf.

(48) (c) *I command you to perform the action.*

(See section 5.1.5 for a detailed discussion.) Thus, the assumption of the deep structure in (47.e) for imperatives automatically explains the restriction that embedded commands must be infinitival actions. This restriction is captured by marking the verbs of command with the feature [+----ACTION] in the lexicon. The analysis proposed here automatically deletes the agent of imperatives by the rule of EQUI NP DEL (i.e. an instance of the general constraint against surface structure agents in embedded actions), since matrix verbs marked for actions obligatorily delete the agent of the embedded action. (For detailed discussion, see sections 5.1.5 and

(a) *I (hereby) command you to sentence him to six months in jail.*

is not a performative, and hence is generated in another way.
5.1.7.) The analysis proposed here, therefore, does not need the otherwise unmotivated rule of subject deletion with imperatives (also called "you deletion") which is normally assumed in analyses dealing with the imperative.

Incidentally, there is no problem with deriving imperatives containing reflexives, as in:

(48) (d) *Help yourself!*

since the rule of reflexivization applies in the lower cycle, while EQU iNP DEL applies on the cycle of the matrix verb *command*. Imperatives like:

(48) (e) *Sit down everybody!* 

(f) *Help your {self | selves} everybody!*

are no more difficult to derive in this proposal than they are in any other. That is, imperatives like those in (48.e,f) present very grave problems to any analysis with which I am familiar. As far as I can see, however, the analysis proposed here does not present any additional problems for the analysis of these structures.36

The second advantage of the deep structure shown in (47.e) lies in the fact that verbs of command and request are performative verbs; that is, the verbs of command and request have the feature [+PERFORM]. This brings me to the question of defending the deep structure proposed in (47.e).

Before I can defend that deep structure, however, I must briefly discuss the difference between verbs of command and verbs of request. Note, first of all, that verbs of command take an indirect object plus an infinitive action in the verb phrase, while verbs of request take a *that* clause (usually said to be in the "subjunctive") plus an optionally deletable *of* phrase indicating the indirect object. Compare the following sentences.

---

36 For a discussion of some of the problems connected with imperatives like those in (48.e,f), see P. Schachter, et al., "Imperatives", in R. Stockwell, et al., *Integration*. 
Now, verbs like *demand* have traditionally been analyzed as taking the subjunctive (cf. *I demand that you/he/they be dismissed*), and some linguists have remarked that there is a relation between the subjunctive and the imperative in English, because the former appears only with verbs of request which do not have an (indirect) object next to the embedded action in the verb phrase. I will discuss the implications of the form of this embedded command later in this section. At this point I only want to demonstrate the fact that embedded actions on verbs of request have the form indicated in (49.b).

I can now turn to the defense of the deep structure proposed in (47.e). I will not defend the form of the subject of the matrix sentence beyond saying that the fact that it must be the first-person singular pronoun is clear from Austin's observations about performatives. As Austin notes, if the first-person subject of a performative is changed to any other form, the sentence in question ceases to be a performative (cf. section 2.1). In the same manner, if the subject of the matrix sentence of an embedded command is changed, the sentence ceases to be an imperative, cf.

(49) (c) *He (*hereby*) commands you to do it.*

Note that the adverb *hereby* can no longer be inserted, and the sentence in (49.c) is now either true or false, i.e. it is a proposition.

The form of the verb needs more justification than does the subject. Ross argues that the matrix verb he assumes for declaratives must have the following features:

---

I will argue that the matrix verb for imperatives must have the features:

(50) (b) + VERB
  + PERFORMATIVE
  + COMMUNICATION
  + LINGUISTIC
  + COMMAND

That is, the two verbs differ only with respect to one feature, [+DECLARATIVE] as opposed to [+COMMAND].

The feature [+PERFORMATIVE] is needed on the matrix verb in order to explain the fact that verbs of command behave like performatives. That is, they allow insertion of the adverb hereby, they are not true or false, they must have a first-person subject, and they take embedded actions.

The feature [+COMMUNICATION] is needed on the matrix verb to show that commands can only be embedded under verbs of communication, since there are no sentences of the form:

(51) (a) *I thought/knew/believed/doubted/etc. you to do it.

Note that verbs like expect, want, etc. have surface structures of the form you to do it, the same as do verbs of communication. However, these surface structures are derived from deep structure that clauses (i.e. propositions), by the rule of RAIS TO OBJ (cf. section 3.0.2). There is, however, another class of verbs which takes indirect objects plus embedded actions, exactly as do the verbs of command, cf.

(51) (b) \( I \left\{ \begin{array}{l}
\text{persuaded} \\
\text{advised} \\
\text{convinced}
\end{array} \right. \) you to do it.
all these matrix verbs have the feature [+COMMUNICATION] since they clearly imply that the subject of the matrix verb *communicates* to the (person in) the indirect object that he is to perform an action.

The feature [+LINGUISTIC] is needed on the verbs of command because linguistic commands can only be embedded under verbs having this feature, cf.

\[
(51) \quad \text{(c)} \quad *I \left\{ \begin{array}{l}
\text{frowned my displeasure} \\
\text{smiled my encouragement}
\end{array} \right\} \text{you to do it.}
\]

Finally, the feature [+COMMAND] must be present on the verbs of command to differentiate them from the verbs of request, which, as was shown above, exhibit different syntactic behavior. The verbs of request will have the feature [+REQUEST] instead of [+COMMAND] to account for this difference in syntactic behavior.

The assumption of the (indirect) object noun phrase *you* can be supported by the following observations. Although sentences like:

\[
(52) \quad \text{(a)} \quad \text{I commanded him to do it.}
\]

are possible, they are not performatives but are declaratives. The truth of this claim lies in the fact that the adverb *hereby* cannot be inserted into (52.a), and that (52.a) is either true or false, cf.

\[
(52) \quad \text{(b)} \quad *I \text{ hereby commanded him to do it.}
\]

\[
(52) \quad \text{(c)} \quad \text{It is true that you commanded him to do it?}
\]

Moreover, there are no sentences of the form:

\[
(52) \quad \text{(d)} \quad *I \text{ hereby command him \{ }\begin{array}{l}
\text{to do it.} \\
\text{that he do it} \\
\text{that you do it.}
\end{array} \}
\]

Finally, it is obvious that a command must be directed to the person who is commanded to perform the action described in the command, and not to some other person. And the form of the person who is directly addressed is that of the second person (at least in English).

Note, incidentally, that the data presented in examples (49.c) and (52.a-d) indicate that verbs of command (and also verbs of request)
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can also occur as non-performative verbs, e.g. with third-person subjects or indirect objects, and with non-present tense. This fact is accounted for by the negative value of the feature [+/—PERFORMATIVE]. This negative value indicates also that the matrix sentence cannot be deleted, since only matrix sentences whose verb is marked [+PERFORMATIVE] can be deleted.

I should like to turn now to the verbs of request. It is clear that, with one exception, they will have the same deep structure as do verbs of command, since the arguments cited for the deep structure of the latter also hold for verbs of request. The only difference between these two classes of verbs is that verbs of request have the feature [+REQUEST], instead of the feature [+COMMAND], to account for the fact that verbs of request are less constrained as to the types of sentences they allow as complements than are verbs of command. In the first place, they take the noun action, cf.

(53) (a) 

\[
I \begin{cases} 
\text{demand} \\
\text{request} \\
\text{require} 
\end{cases} \quad \text{the action} \\
\quad \text{(of hanging the condemned prisoner).}
\]

so that this class of verbs will be marked as [+____NP[ACTION]]. As for embedded actions without the head noun, these verbs allow only action nominals, cf.

(53) (b) 

\[
I \begin{cases} 
\text{demand} \\
\text{request} \\
\text{require} 
\end{cases} \quad \{ \text{the hanging of the condemned} \\
\quad \text{prisoner.} \\
\quad \ast \text{hanging the condemned prisoner.} 
\}
\]

Clearly, we will have to account for this fact with an exception feature of the form (—HEAD NOUN DEL] on the verbs of this class.

In addition, verbs of request take events as complements, cf.

(53) (c) 

\[
I \begin{cases} 
\text{demand} \\
\text{request} \\
\text{require} 
\end{cases} \quad \{ \text{his dismissal.} \\
\quad \text{the criminal's conviction.} \\
\quad \text{the death penalty for the criminal.} 
\}
\]

so that the verbs of request must also be marked for events, i.e. with the feature [+____.NP[EVENT]].
More important, however, is the well-known fact that verbs of request take that clauses "in the subjunctive", cf.

(53) (d) \[
\begin{array}{l}
\text{demand} \\
\text{request} \\
\text{require}
\end{array}
\]

\[
I \{ \text{that you/he/we/they} \}
\begin{array}{l}
do it. \\
\text{be dismissed.}
\end{array}
\]

Verbs of request are not unique among performatives in taking that clauses; note Austin's example

(53) (e) *I (hereby) bet you sixpence that it will rain tomorrow.*

The confirmation of truth with the verbs of request is exactly the same as with performative verbs like *bet* in example (53.e). Both sentences share the fact that the that clause cannot be true or false, since this is a general property of performative verbs.\(^{38}\)

\(^{38}\) Barbara Partee (personal communication) suggested that performative verbs should have the feature [+PRONOUNCEMENT] because performative sentences are often overt pronouncements, and always appear to be covert pronouncements. Consider sentences like:

(a) *I hereby pronounce you man and wife.*
(b) *I hereby pronounce your sentence to be six months at hard labor.*

In general, all performative sentences which are uttered by someone in an official capacity or in a formal or ritual situation, such as namings, initiations, curses, retributions (all "acts", by the way), have the tone of pronouncements. On the other hand, sentences like Austin's

(c) *I bet you sixpence that it will rain tomorrow.*

are performatives, but do not seem to have the tone of a pronouncement. There appear to be a number of reasons why sentences like those in (c) are different from pronouncement-type performatives. First, the former occur in informal situations, while pronouncements are always formal. Second, a bet is not made solely by uttering it, but needs a hand clasp or a verbal formula of acceptance, while other performatives are valid when they are pronounced (provided, of course, that they are pronounced in an appropriate situation by someone who has authority to perform the act). Third, a bet is not only an act but also a forecast that some proposition will or will not be true at some future time. It is for this reason that performatives like those in (c) are the only ones that allow an embedded proposition (that clause).

These considerations indicate that the feature [+PRONOUNCEMENT] should be reserved for performative sentences uttered in a formal situation, where the utterance of the sentence constitutes the act. Note, incidentally,
For these reasons, I propose that we analyze the *that* clauses which can occur as complements on verbs of request as embedded propositions, and account for the fact that they must be in the subjunctive by the feature [+REQUEST]; that is, the subjunctive form of *that* clauses embedded under verbs of request (verbs marked [+REQUEST]) is determined by this feature. The relationship of verbs of command and verbs of request is expressed by the fact that these two classes share all features except [+COMMAND] and [+REQUEST].

In summary, we can say that verbs of command appear to behave according to our predictions, and that their syntactic behavior is automatically accounted for by the proposed deep structure. In addition, by unifying imperatives and verbs of command, we can explain in part the syntactic behavior of imperatives by the behavior of actions embedded on verbs of command. In particular, we can do away with the otherwise unmotivated rule of subject deletion in imperatives. Verbs of request, on the other hand, are less constrained as to the types of embedded sentences they take, and are also less regular than verbs of command.

5.4 CONCLUSION

This chapter has dealt with actions and has shown that embedded actions must not have surface structure subjects (agents), the same as embedded states and processes, since the presence of a subject turns an action into an event. It was also shown that if the analysis proposed here is accepted the head nouns of sentential complements do not have to be deleted until after the rule of extraposition, and the Complex *NP* Constraint can therefore be invoked to protect constituents in the embedded sentences from being raised into the

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that the verbs *declare* and *claim*, when used as performatives, are pronouncements, cf.

(d) \[
I \langle \text{declare} \rangle \quad \langle (as) \text{ my prisoner} \rangle \\
\langle \text{claim} \rangle \quad \langle \text{you (to be) the winner} \rangle
\]
matrix sentence. The fact that gerundives cannot be extraposed is then also automatically explained. This is due to the fact that the analysis proposed here assumes different deep structures for actions and facts, and justifies these deep structures. It was also shown that the rule of EQUI NP DEL is a special case of a more general constraint on certain types of embedded sentences (i.e. actions, states, and some processes) which must not have surface structure subjects.

In two brief final sections, I discussed the relation of acts and activities to actions, and that of imperatives to actions. In the former section, it was found that in some dialects acts are a well-defined subset of actions, but in other dialects there does not appear to be such a sharp dividing line, since, in the latter dialects, the head noun action does not occur freely in the surface structure. Activities, on the other hand, were found to be generic actions. As for the relation between imperatives and actions, it was found that actions embedded on verbs of command allow us to predict at least part of the syntactic behavior of imperatives. It was also found that the verb needed as a matrix verb of imperatives is identical to the verb command, except that it must have the feature [+PERFORMATIVE], while verbs of command in general can have this feature in its positive value. Verbs of request, on the other hand, were seen to be less constrained than verbs of action with respect to their complements, and were also found to be less regular than verbs of command.
In this work, I have attempted to investigate the syntactic consequences of certain semantic properties of embedded sentences. It has been shown here that the analysis proposed by Kiparsky and Kiparsky, which investigates the interaction of semantics and syntax with respect to factive verbs and their complements presents an important insight into the interrelation between semantics and syntax of complementation. However, there are a number of other such semantic factors in the area of complementation which also have syntactic consequences. The major semantic factors which exhibit syntactic consequences were found to be some of the sentence types recognized by philosophers of language, i.e. propositions, facts, events, actions, and to a lesser degree states, and processes.

Before turning to a summary of my findings, I should like to discuss briefly the question of FOR constructions. The Kiparskys point out that FOR-constructions occur with matrix verbs which imply an emotional or subjective reaction on the part of the speaker to the meaning of the embedded sentence. For this reason, the Kiparskys call FOR-constructions “emotives”. When discussing their findings (cf. sections 1.4 and 3.0, above), I took issue with their attempt to account for the syntactic behavior of all the matrix verbs taking embedded sentences (and that of the embedded sentence) with two binary cross classifying features. I found the four classes of matrix verbs resulting from the classification pro-

1 See P. Kiparsky and C. Kiparsky, “Fact.”
posed by the Kiparskys to be too few; a fact which leads to a number of problems with their analysis. These problems are discussed in detail in Chapters 3, 4, and 5. In particular, I argued that the class of matrix verbs assumed to be defined by the features (—FACT] [—EMOT] includes a number of classes of verbs which exhibit separate semantic and syntactic properties, both with respect to complementation and with respect to other syntactic processes. Needless to say, my disagreement with the fact that the Kiparskys have only two binary features in their analysis does not say anything about the validity of the features they have established. My disagreement only points to the fact that the two features they have assumed are not enough.

In Chapter 2, processes were characterized as:

(1) A process has duration. The aspect of a process is the patient undergoing the action.

In Chapters 3, 4, and 5 it was shown that various gerundive constructions and derived nominal constructions can occur as sentential complements on the (head) noun process, or across the copula from this noun. Examples cited there include passives like (2.a), and verb phrases like (2.b) and (2.c):

(2) (a) He is undergoing the process of being examined by the doctor.
(b) Bill watched the process of the eating of the meat.
(c) Finding the answer was a difficult process.

It was also noted that, just as there exists a test frame for events (i.e. "_____ occur + point time expression"), so there exists a test frame for processes (i.e. "_____take + duration of time expression"). According to this test frame, the gerundives in (2) are, of course, processes, cf.

(3) (the process of) \[
\begin{align*}
\text{being examined by the doctor} \\
\text{the eating of the meat} \\
\text{finding the answer}
\end{align*}
\] took an hour.
If we now consider FOR-constructions from this point of view, we find that they can also occur as subjects of *take*, cf.

(4) (a) For John to eat the meat
(b) For the volcano to errupt
(c) For Harry to arrive at the station
(d) For Nancy to fail the exam

At the same times, it is clear that FOR-constructions cannot make propositions or describe events, because they cannot occur as subjects of *true* (or *false*) or of *occur*, which are the test frames for propositions and events, respectively, cf.

(5) (a) *For John to eat the meat
(b) *For the volcano to errupt
(c) *For Harry to arrive at the station
(d) *For Nancy to fail the exam

(6) (a) *For John to eat the meat
(b) *For the volcano to errupt
(c) *For Harry to arrive at the station
(d) *For Nancy to fail the exam

From these test frames, then, we can conclude that FOR-constructions describe processes. There is, however, one objection to this conclusion: except for FOR-constructions, processes do not have surface structure subjects. This fact is, of course, reflected in the characterization in (1), above. I think that an explanation for this apparent exception can be offered along the following lines. The deep structure subject of the FOR-construction is not felt to be a subject in the surface structure by the speaker of English, because it does, in fact, not act as a subject, but as an object of the preposition *for*. The only words in English which still preserve an overt marking distinction between subject and object form are pronouns, and with these words the object for occurs with FOR-constructions:

(7) For {him
he} to have done this surprised us.

As the Kiparskys pointed out, it is because the deep structure sub-
ject of the FOR-constructions acts as the object of the preposition *for* that these constructions show the uninflected infinitive form of the verb. In English, infinitives always occur with embedded sentences when such a sentence does not have a subject at the time agreement takes place. There are, according to the Kiparskys, three environments when this state of affairs can be found. If the deep structure subject has been deleted, raised out of the embedded sentence, or become the surface structure object of the preposition *for*.

There is some additional evidence that FOR-constructions do, indeed, describe processes. This evidence has to do with real world events. In Chapter 2, it was pointed out that, as far as the real world is concerned, there are a few “instantaneous events”, such as winning a race, hitting someone, etc. Note that, as we would expect, the following strings are ungrammatical:

\[(8) \begin{align*}
(\text{a}) & \quad *\text{John's hitting Mary} \quad \text{took a long time.} \\
(\text{b}) & \quad *\text{Fred's winning the race} \quad \text{took a long time.}
\end{align*}\]

With a FOR-construction instead of a gerundive, however, strings like those in (8) become grammatical, cf.

\[(9) \begin{align*}
(\text{a}) & \quad \text{For John to hit Mary} \quad \text{took a long time.} \\
(\text{b}) & \quad \text{For Fred to win the race} \quad \text{took a long time.}
\end{align*}\]

It should be pointed out that, because the embedded sentences in (9) describe instantaneous events, the only way in which we can interpret a sentence like (9.a) is in the sense of “the decision to do it”, and the only way in which we can interpret a sentence like (9.b) is in the sense of “the preparation for it”. However, this does not change the fact that a FOR-construction has a strong enough sense of duration to allow us to force even an instantaneous event into a durational interpretation.

It remains now to consider the question of whether FOR-constructions are complements on the head noun *process*, or sentential noun phrases. Because these constructions do not allow the head noun *process* (or any other head noun, for that matter), they must be sentential noun phrases, just as the related infinitival constructions, cf.
We can now return to the summary of my findings. The first chapter contains a brief discussion of the more important T.G. analyses of complementation and nominalization. It concentrates on the major contributions of each analysis. The analyses dealt with in Chapter I are Chomsky,² Lees,³ Rosenbaum,⁴ Kiparsky and Kiparsky,⁵ and Stockwell et al.⁶ It was noted that the analyses of complementation, along with other analyses within the T.G. framework, took semantics more and more into consideration as we move from earlier to later analyses.

In Chapter 2, the semantic framework for the present investigation was erected. In this chapter, it was noted that from the semantic viewpoint sentences fall into two cross classifying categories, depending on whether the sentences are viewed as to what they express or as to what they describe. Simple sentences were said to express:

(11) Declaratives
    Performatives
    Imperatives
    Interrogatives

They were said to describe:

(12) Events Activities States
    Actions Processes Properties
    Acts

² See N. Chomsky, "A Transformational Approach to Syntax".
⁵ See P. Kiparsky and C. Kiparsky, "Fact".
⁶ See Stockwell et al., "Nominalization".
Let me now restate these observations formally:

(13) (a) A proposition is either true or false.
(b) An event has an action verb and is viewed as occurring at a given time. The aspect of an event is the complete real world change.
(c) An action is performed by a volitional agent. The aspect of an action is the agent performing the action in the real world change.
(d) An act is an action which the speaker considers to be important.
(e) A process has duration. The aspect of a process is the patient undergoing the action.
(f) An object possesses a property. The aspect of a property is the object possessing it.
(g) The aspect of a state can be the complete real world condition or the object which is in this condition.

In the former case, (i) states prevail;
in the latter case, (ii) an object is in a state.

The introductory section of Chapter 3 deals in more detail with some of the claims of the analyses proposed by Rosenbaum. Here it is pointed out that Rosenbaum deals with what had hitherto been called nominalization as "noun phrase complements", because he finds some evidence that these structures have the head noun it. This is the only type of noun complement with which Rosenbaum is concerned. Arguments were adduced against the it + S analysis. These were of the form that in English the anticipatory it is semantically empty and that its occurrence is predictable, because this it always takes the place of an extraposed sentence, or rather the head noun of such a sentence.

The analysis of complements into factives and emotives, proposed by the Kiparskys was also discussed in this section. In particular, it was claimed that the four way distinction of the two

8 See P. Kiparsky and C. Kiparsky, "Fact".
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binary, cross classifying features, [+/-FACT] and [+/-EMOT] is insufficient to describe the semantic syntactic properties of complementation. The present work is largely in support of this claim.

In section one of Chapter 3, the restrictions between matrix verbs and their embedded sentences were investigated from the point of view of the semantic framework proposed in Chapter 2. It was shown that there are restrictions between the class to which a matrix verb belongs and the type(s) of embedded sentences it allows. The surface forms of the embedded sentences (i.e. whether they are *that* clauses, gerundives with or without surface structure subject, or infinitives) was found to be largely a surface structure reflex of the sentence type the matrix verb allows. That is, it was shown that embedded propositions have the surface form of a *that* clause, while embedded events have the surface form of a gerund, and embedded actions, states or processes have the surface form of subjectless gerundives, or infinitives. This observation means that while simple sentences may belong to more than one sentence type (e.g. *John ate the meat* at the same time expresses a proposition and describes an event and an action on the part of John), embedded sentences can only belong to one sentence type, and the fact that the embedded sentence is a *that* clause, a gerund with a subject, or a subjectless gerund or infinitive is determined by the restriction of the matrix verb (i.e. the type of embedded sentence the matrix verb allows).

These observations led to a proposal concerning the classification of matrix verbs. Matrix verbs are marked with features of the form e.g. [+_____PROPNN], [+_____EVENT], [+_____ACTN], etc. (the features are refined in section 5.1.5). The characterization of the sentence types formulated in Chapter 2 is made part of the semantic rules, which can then operate on the deep structure of embedded sentences to determine whether such a sentence is of the type prescribed by the features of the matrix verb. If the type of the embedded sentence and the corresponding feature on the matrix verb agree, nothing happens; if, however, they do not, the sentence is blocked by the semantic rules. It was noted that the semantic rules must be able to block unacceptable strings of the form *John drank the meat* in any case, so that the proposal to use the semantic
rules to check the compatibility of the embedded sentence type and (the feature on) its matrix verb does not make the semantic rules more powerful than they need to be. Because many of the matrix verbs allow more than one type of sentence to be embedded under them, it was found necessary to make use of "obligatory specification". This term, coined by Stockwell et al.,\(^9\) means that for any item marked \([+/0—F\_1]\) in the dictionary, the insertion rules must choose one value, either positive or negative, and bring that value with the item in question into the deep structure on which they are operating.

Finally, the sentence type of the embedded sentence was correlated to a head noun describing that sentence type. That is, it was found that embedded propositions take the head noun *proposition*, embedded events take the head noun *event*, embedded actions take the head noun *action*, etc. These head nouns were shown to have a number of syntactic consequences, such as the Complex NP Constraint, an explanation why gerundives cannot be extraposed, etc. There are some matrix verbs which do not allow the head noun *proposition*, and others which do not allow the head noun *action*; this fact was also found to have certain syntactic consequences, such as the fact that the Complex NP Constraint does not apply, and the fact that these structures may be extraposed, etc.

In the second section of Chapter 3 it was shown that most of the syntactic advantages claimed by the Kiparskys for their factive analysis cannot be realized in the framework within which they work. This is due to the fact that they assume the same deep structure for propositions and actions, i.e. because the four way distinction of the two binary features is not enough to characterize the syntactic (and semantic) properties of complementation. If, however, the analysis proposed here is accepted, the syntactic advantages claimed by the Kiparskys for the factive analysis can be realized, as well as several others which they cannot use because they assume only the head noun *fact*. Thus the complements on the head nouns *proposition, idea, notion, and position*, exhibit the same properties

\(^9\) See R. Stockwell et al., "Nominalization".
as do complements on the head noun *fact*, i.e. the Complex NP Constraint applies to all of these structures, and protects items inside these complements from being moved out of the complement as long as the head noun in question is not deleted. The fact that the Kiparskys do not differentiate between facts and actions, however, necessitates that they delete the head noun *fact* before any of the rules removing items from the embedded sentence can apply, so that the Complex NP Constraint cannot be invoked to protect these structures.

It was also argued in this section that the proposal made by the Kiparskys that the head noun *the fact (of)* pronominalizes to *it*, and that this “factive *it*” is different from the *it* of extraposition, cannot be upheld. This was shown to be due to the fact that definite pronouns like *it* are always substituted for a head item plus its modifiers, while the so-called factive *it* would be substituted for the head noun only. In addition, this factive *it* would be restricted to the object position of factive *that* clauses, while pronominalization in general is not so restricted. Lastly, there is no antecedent for this pronoun *it*, while pronominalization is an anaphoric process; i.e. must have an antecedent.

In the remaining sections of Chapter 3, I investigated the syntactic properties of other head nouns on embedded propositions. It was found that these head nouns are *proposition, idea, notion*, and *position*, and that their syntactic properties, as mentioned in the preceding paragraphs, are exactly like those of the head noun *fact*.

Embedded events were discussed in Chapter 4. It is shown there that all embedded events must have the surface form of gerundives, and that all embedded events have the head noun *event* in the deep structure. This head noun was found to have two syntactic advantages. In the first place, the so-called “manner” interpretation of gerundives is due to the fact that these gerundives are events; the “manner” label appears to have been attached to these gerunds because a manner adverbial clarifies the eventive nature of the gerund, i.e. most clearly differentiates it from the factive reading. This means that the head nouns *event* and *fact* (the latter for the factive reading) can adequately account for the so-called “factive-
manner" ambiguity noted by e.g. Lees\textsuperscript{10} and Katz and Postal,\textsuperscript{11} but ignored by later analyses.

The second advantage of the head noun event (and action, state, and process) lies in the fact that it allows us to explain why gerundives do not extrapose. This is due to the fact that gerundives are linked to their head noun by the preposition of, and of phrases cannot normally be separated from their head noun. It should be noted here that the fact that of phrases cannot be extraposed can be used to explain the ungrammaticality of extraposed gerundives only if (1) all gerundives have head nouns, and (2) the head nouns are not deleted until after the rule of extraposition has applied. These conditions are both met by the analysis proposed here.

Actions were discussed in Chapter 5, where it was shown that embedded actions must not have a surface structure subject, while events must have a surface structure subject. This observation was seen to be true not only for matrix verbs taking embedded actions which have to undergo the rule of EQUI NP DEL, but also for matrix verbs taking embedded actions whose agent is indefinite. This fact was interpreted to mean that there is a general constraint on embedded actions which states that their subject must be deleted, i.e. probably a redundancy rule of the form:

\begin{equation}
(+ [\text{ACTION}]) \rightarrow (+ \text{SUBJECT DEL})
\end{equation}

\begin{equation}
(+ [\text{ACTION}])
\end{equation}

The general constraint on the recoverability of deletions, which must be in the grammar in any case, constrains the deletion of these subjects to cases where it is either identical to the appropriate noun phrase in the matrix sentence, or is an indefinite noun phrase. This implies that the rule of EQUI NP DEL is only one instance of the constraint on embedded actions, and that its application depends on the feature \(+ [\text{ACTION}]) in the matrix verb. Now, however, note that making EQUI NP DEL depend on the presence of the feature mentioned above enables us to postpone the deletion of the different head nouns for the different complements until after

\textsuperscript{10} See R. Lees, \textit{The Grammar of English Nominalization}.
\textsuperscript{11} See J. Katz and P. Postal, \textit{An Integrated Theory of Linguistic Description}. 
the rule of extraposition has applied. It was shown that in the
framework adopted by the Kiparskys\textsuperscript{12} and by Stockwell et al.,\textsuperscript{13}
the only way to avoid generating the ungrammatical string in the
set of sentences below is to order $\text{FACT \ DEL}$ to precede $\text{EQUI \ NP \ DEL}$, cf.

\begin{enumerate}
\item[(15)] (a) $I$ regret the fact of my going.
\item[(b)] *$I$ regret the fact of going.
\item[(c)] $I$ regret my going.
\item[(d)] $I$ regret going.
\end{enumerate}

If, however, the matrix verb in (15.a) is marked $[+_____[EVENT]]$, that in (15.b) is marked $[+_____[ACTION]]$, while all matrix
verbs share the feature $[- \text{FACT}]$, then the ungrammatical (15.b)
is excluded because actions do not take the head noun $\text{fact}$, and we
do not need to have the rule of $\text{FACT \ DEL}$ precede that of $\text{EQUI \ NP \ DEL}$. The sentence:

\begin{enumerate}
\item[(15)] (e) $I$ regret the action of going.
\end{enumerate}

is grammatical. The consequence of this reordering is not only that
the rule which deletes the different head nouns can be unified into
one rule, but also that this rule can be postponed until after that of
extraposition. This enables the grammar to use the Complex $\text{NP}$
Constraint to account for the inapplicability of the raising rules to
these complements, and to explain the fact that gerundives do not
extrapose without having to invoke any new rules or ad hoc restric-
tions. This fact was seen to support the analysis proposed here.

In this Chapter, I also investigated infinitives. Briefly, it was
found that infinitives are actions without the head noun $\text{action}$ in the
depth structure (while gerundive actions have this head noun in the
deep structure). The investigation of infinitive and gerundive ac-
tions led to a revision of the features on the matrix verbs. It was
found that the features in question must differentiate between em-
bbeded sentences which have a head noun in the deep structure, and
embedded sentences which do not. The following features were

\textsuperscript{12} See Kiparsky and Kiparsky, "Fact".
\textsuperscript{13} See Stockwell et al., "Nominalization".
CONCLUDING REMARKS

proposed for to account this fact: for embedded sentences having a deep structure head noun, the matrix verb is marked e.g. \([+_____NP\ [PROPOSITION]], [+_____NP[ACTION]], etc.\) For embedded sentences not having a deep structure head noun, the matrix verb is marked e.g. \([+_____s[PROPOSITION]], [+_____s[ACTION]]\). The former feature is needed for e.g. the verbs of belief and the performative verbs of assertion; the latter feature is needed for matrix verbs taking infinitive actions. Because all matrix verbs which allow the noun describing a sentence type also allow that sentence type as a complement on the head noun in question, this fact can be captured by a redundancy rule, roughly of the form, e.g.

\[
(16) \ [+_____NP[ACTION]] \rightarrow [+_____s[ACTION]]
\]

This chapter also dealt briefly with actions as sentential subjects. Here it was shown that embedded actions as subjects of verbs and adjectives can be either gerundives or infinitives, but that their subjects must be deleted in either case (cf. the constraint discussed above). More important, it was found that embedded actions of the form:

\[
(17) \ (a) \ \begin{align*}
\text{Doing} \\
\text{To do}
\end{align*} \text{ this is difficult for us.}
\]

are not derived from FOR-TO clauses of the form:

\[
(17) \ (b) \ \text{For us to do this is difficult.}
\]

The reason for this claim was seen to lie in the fact that:

1. The FOR-TO clauses are not actions, cf.

\[
(17) \ (c) \ *\text{For John to do this} \quad \begin{align*}
\text{occurred at noon.} \\
in \text{an action.}
\end{align*}
\]

2. A for phrase in the predicate is possible with gerundives, cf.

\[
(17) \ (d) \ \text{Doing this is difficult for us.}
\]

3. Another for phrase is possible at least with some FOR-constructions, cf.
(17) (e) *For the author to disregard this fact can be dangerous for the reader.*

4. There are both gerundive and infinitival actions as sentential subjects which allow a *for* phrase that cannot be the agent of embedded action, cf.

(17) (f) \{ Flying \} \{ To fly \} at an altitude of less than 100 feet can be dangerous for the \{ passengers. \} \{ spectators. \}

In section three of Chapter 5, I briefly discussed acts and activities and their relationship to actions. It was found that the dividing line between acts and actions is not as clear cut as I had originally believed, because a number of my informants (though informally polled) found that they could not use the head noun *action* freely. Most of them, however, found the same sentences acceptable with the head noun *act*. A brief historical consideration led to the speculation that the difference in usage is due to the comparatively recent introduction of all the (head) nouns with which I am concerned here. Nonetheless, it was found that even for those of my informants who could not use the head noun *action* freely, I am justified to assume this head noun in the deep structure. With respect to activities, however, usage was uniform. It was found that activities are generic actions. This fact can be captured quite simply by having two features of the form \(+\_\_\_\_NP[ACTIVITY]\), and \(+NP[ACTIVITY]\_\_\_\_.\). The feature appears to be redundant on the corresponding features for embedded actions, since all matrix verbs and adjectives taking *action* as subject or object also take activity.

In the final section of Chapter 5, I considered the relation between imperatives and actions embedded on the verbs of command. It was found there that verbs of command are performative verbs, and that they are therefore related to both the performative verb *declare*, shown by Ross\(^{14}\) to be the matrix verb above apparently

\(^{14}\) See J. Ross, “On Declarative Sentences”.
simple propositions, and performative verbs like *christen*, *sentence*, *pronounce*, etc. If we assume the deep structure below for imperatives, then this structure explains at once the syntactic behavior of actions embedded under verbs of command and that of imperatives.

(18) (a)  
```
NP    VP
  |  |
 V  NP     NP
  |      |
 I  command you  you eat the meat
```

In particular, the otherwise unmotivated rule deleting the subject of imperatives is no longer needed, since the rule of EQUi NP DEL will delete the subject of the embedded command as well as that of the imperative. Finally, it was shown that no special machinery is needed to avoid embedded performative verbs, because the features on the matrix verbs and the fact that the subject of an embedded action must be deleted will automatically block a structure containing an embedded performative verb from being realized as a well formed surface structure. This is accomplished because the subject of an action embedded under a performative verb must be *you*, while the subject of the performative verb must be *I*. Therefore, both EQUi NP DEL and INDEF NP DEL will fail to apply to a structure which is marked for obligatory deletion of the subject of the embedded sentence. This is, of course, sufficient to block this structure.
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