RULE ORDERING IN SYNTAX

by

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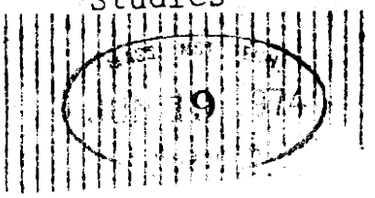

Title: Rule Ordering in Syntax

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ABSTRACT

The aim of the work is to explain why rules are ordered the way that they are. For instance, why is Dative Movement ordered before Passive, and Passive before WH Movement (Question Formation)? The initial observation is that the maximal domains within which these rules apply are small or large, depending on whether the rule is late or early. Thus, Dative Movement has the Predicate Phrase as its domain, Passive has the domain S, and WH Movement has the domain $\overline{S}$, where $\overline{S} \rightarrow$ COMP $\frown$ S $\frown$ X. Four domains are established, VP, Pred Phrase, S, and $\overline{S}$, and the claim tested is that all rules that have a given domain as their maximal domain of application are ordered before all rules of any larger domain. Evidence is presented that in the domain Pred Phrase ordering does not obtain, and an attempt at a principled account of ordering that does obtain among rules of domain S is made.

Aknowledgements

I wish to thank the Faculty of the Linguistic Department at MIT, especially Professors Noam Chomsky and Haj Ross; students of the same department, especially Mark Aronoff, Jill Carrier, Dick Oehrle, and Alan Prince; and my parents; all for advice and encouragement during the past four years.

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Table of Contents

Chapter 1

1.0 This thesis is an attempt to relate the ordering of transformations to other properties of rules, the most important being their maximal domain of application. What the domain of a rule is will be discussed below.

In recent years there has been two important theories of ordering. The first was the cycle. This theory has been a part of the theoretical background of almost all transformational literature, and it will be so here as well, without much further discussion. The main results of the work here are about what are generally considered cyclic rules. The notion precyclic rule does not figure here at all, although something will be said about rules that have been called last cyclic, post cyclic, and root.

Part of the original theory of the cycle (Chomsky, 1965)[FN1] also specified that within the cycle, the order of application of rules was given by a list, the first in the list applying first, the second second, etc. Once a rule has been passed on the list it cannot apply on the current cycle, whether or not it applied at its point. This is the (full) extrinsic ordering hypothesis. In very recent years, an opposing theory has been formulated and called the unordered rule hypothesis (URH), (Lakoff, Koutsoudas, Kisseberth, Ringen)[FN2]. For this theory, the list of

cyclic transformations imposes no conditions on what order the rules will actually apply in, in any given derivation. A rule applies whenever it can. Thus, transformations in this theory are analogous to rules of inference in an axiomatic theory.

There are several empirical questions that this theory does not answer. One is about the cycle - most proponents of the URH have opted for the cycle. The theory of the cycle is actually independent of URH. Another question is, can rules apply more than once in a cycle, if its structural description is met more than once. This question is of interest only if the cycle is assumed, since it is easy to think of sentences where a rule has applied more than once but in two different cycles. For some rules, like passive, the question does not arise; for some like affix hopping it seems the answer must be yes. There are several directions the theory could go in, here, which I will not follow up. For instance, the answer no could be given, and a simultaneous application scheme be provided for such rules as affix hopping.

A theory that might be considered intermediate between the extrinsic and the unordered theory is the partially ordered theory. In the extrinsic theory, it is required that for every pair of rules, one of them must be ordered on the list later than the other. The partial ordering theory does not make this requirement. Only the minimal conditions of ordering are made - if A

is ordered after B, then B is not ordered after A, and if A is ordered after B and B is ordered after C, then A is ordered after C. Such a list will not totally determine the application in any given derivation.

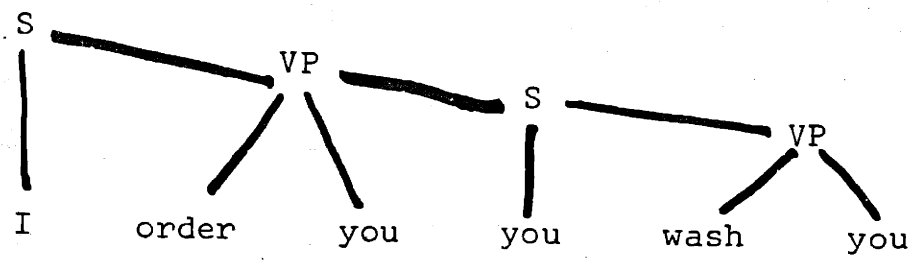
In much of transformational grammar, many arguments are given for a particular extrinsic ordering for a pair of rules. Ross (1967) contains many such arguments. Much of the discussion by proponents of URH has focused on showing that these arguments embody logical oversights or unwarranted or incorrect theoretical assumptions. This is exactly the type of discussion that is called for, since a single clear case of a pair of rules that are extrinsically ordered invalidates URH. On the other hand, Koutsoudas has given arguments that two particular rules (conjunction reduction and gapping)[FN3] must be unordered. If he is correct, then the extrinsic ordering theory is falsified, though the partial ordering theory is not.

The theory presented here imposes a partial ordering on the list of rules. Thus, we are not concerned with the difference between the full extrinsic theory and the partial theory, although in later chapters, I will discuss the possibility that some rules are unordered.

The proponents of URH, as I have said, must show that each case of arguments that a pair of rules must be ordered in a particular

way is fallacious. Lakoff (Hate Rule Ordering Orgy, CLS 8, 1972) for instance, considers the following argument - reflexivization and imperative you deletion must apply in that order to get sentences like "wash yourself" and to avoid sentences like "wash you". In the last sentence imperative deletion has bled reflexivization by applying before it. This has been taken as presumptive evidence that this pair of rules is ordered. Lakoff, however, argues that the underlying structure of imperatives contains a performative cycle, which is deleted on the surface:

1.



and that imperative deletion applies on the higher cycle, and reflexivization on the lower cycle. Thus, the principle of the cycle handles 1 and extrinsic ordering is unnecessary.

This is a typical argument for URH, and again, the kind that is called for. Normally, a restructuring of the base or a rewriting of a transformation is involved. If it turns out that each case must be handled differently by proponents of URH, this is no weakness of their position, as long as each case can be motivated independently of URH. The above example, for instance, rests on the theory of the performative cycle. You be the judge.

It follows, then, that the best kind of arguments against URH and for partial or full extrinsic ordering are examples of rules that must apply in a certain order. Below, I will present some arguments of this kind.

The first pair of rules is subject verb agreement and passive. It is an obvious fact that the NP with which the verb agrees is the subject after passive. For the extrinsic theory, one simply orders the two rules, SV agreement > passive. Under URH, something else must be said - we must prevent passive from applying to a clause to which SV agreement has applied, and we must insure that SV agreement does apply to passivized sentences. A number of ways suggest themselves - SV agreement could bleed passive. Agreement could be a surface filter. If passive inserts be + en, SV agreement could block affix hopping, and unhopped affixes are filtered on the surface.

The second pair of rules is passive and q-float (discussed by Postal in class lectures, 1972). Q-float relates sentences like a and b :

2. a. They all were watching me.
   b. They were all watching me.

The discussion below could be made to support the assumed claim that a underlies b. The problem for URH here is sentences like:

3. *I was being all watched by them.
   * all being

where passive has applied to a sentence to which q-float has applied. The extrinsic proponent orders q-float after passive; the URH proponent might take a position similar to that suggested in the preceeding case - q-float bleeds passive. That is, once q-float has applied, the quantifier in the auxilliary blocks passive. An obstacle to this analysis, however, is that there is a class of adverbs such as merely which yield the best sentences when they are in the auxilliary:

4. a. John was merely watching me.
   b. Bill was merely being beaten up.
   c. ?Bill merely was being beaten up.
   c. ?John merely was watching me.

This is elementary evidence that the Aux position is the underlying one for merely, as Jackendoff[FN4] has argued. But the presence of merely does not block passive. The question, then, is why should a floated quantifier in the auxilliary block passive.

The third pair of rules is passive and a rule that I will call without equi. This rule deletes or interprets the subject of clauses following the preposition without as in the following:

5. John hit Sam without Ø hurting him.

The argument that this rule must follow passive is based on the non-synonymy of the following sentences:

6. The police arrested John six times without ever telling anyone about it.

7. John was arrested by the police six times without ever telling anyone about it.

The subject of the without clause in 6 is the police, and in 7 is John. That is, it is always the subject after passive. I cannot think of how a URH proponent would handle this case; in particular, it does not seem to me that the application of without equi could block passive from applying.

In the chapters which follow, cases which provide arguments for ordering which is extrinsic (to particular derivations) will be pointed out as the arise.

2.0. The main results of the theory proposed here involves cyclic rules. The idea of cyclic that we will be using here is based on J. Emonds' idea of root transformation. A root transformation is a rule which adjoins an item to the highest S node in a sentence. Root transformations are the only noncyclic transformations. This leaves open whether rules of surface interpre-

tation are cyclic. Thus, to show whether a rule is cyclic or not, one need show only that it happens in embedded sentences, under this definition.

This is quite different from a theory (or metatheory) which requires that it be demonstrated that a rule cannot be post-cyclic, to show that it is cyclic.

The status of root transformations wrt the theory developed here will be discussed in Chapter 4. It will be argued that these rules are postcyclic. We will argue that these rules are not last cyclic. Where we can give arguments of the "strong" form for cyclicity, we will.

3.0. Part of the ordering theory here is based on the following set of base rules, or schema for them (as given in Williams, 1971)[FN5]

8. $\overline{S} \rightarrow x \ S \ y$

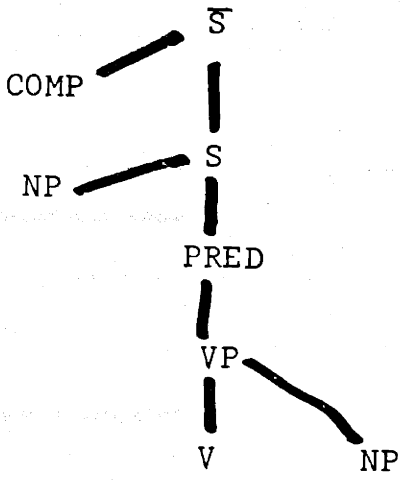
$S \rightarrow x \ NP \ y \ PRED \ z$

$PRED \rightarrow x \ VP \ y$

$VP \rightarrow x \ V \ y.$

These rules provide the following frame for clause structure:

9.



The vertical line from V to $\overline{S}$ is meant to suggest that the clause is a projection of the lexical category V, as the NP is the projection of the lexical category N, though nothing depends on this view of things. The four nodes $\overline{S}$, S, Pred, VP define four phrasal domains of the clause which we shall refer to by the defining node labels. These domains are nested inside each other:

10. $\overline{S} \supset S \supset PRED \supset VP$

This notion of domain can be used to partition the set of transformations as follows - a rule is assigned to phrase X if X is the smallest domain in the inclusion hierarchy 10 that includes all of the material in a clause which is relevant to the structural description of a rule for any application of the rule to any clause. This partitions the rule into four sets, each assigned to a different label in 10.

It is the purpose of this thesis to show that this partition can be interpreted as a partial ordering of rules - if X is larger than Y on the inclusion hierarchy, then all rules in the set assigned to X apply after all rules that are assigned to Y.

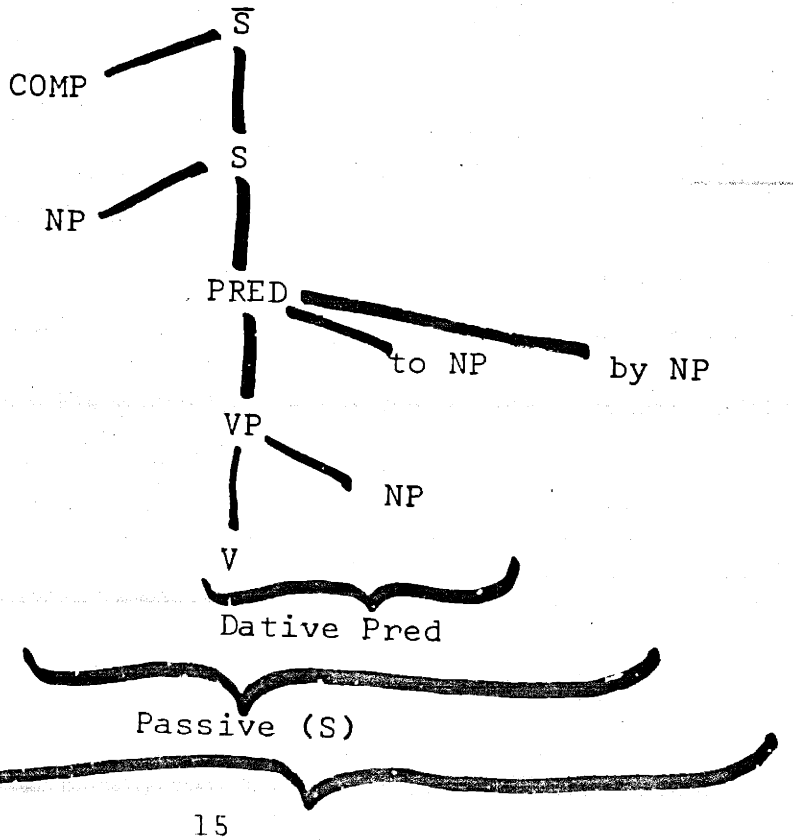
Here is an example, for the three rules dative movement, passive, and question formation. The question to answer for each rule is, what domain is it to be assigned to. Question formation (WH fronting) always moves an item into the complementizer position. Thus, question formation never applies within a domain smaller than $\overline{S}$, so it is an $\overline{S}$ rule. The rule passive has its domain limited on the left by the subject position, and on the right by the by-phrase. Assuming that the by-phrase is a part of the predicate phrase (Chomsky, 1965) we see that the domain of passive is entirely contained within the phrase S, and since the subject NP is not in Pred, S is the smallest such domain, so passive is an S rule. Notice here, we are ignoring end-variables - in the normal structural description of passive, an end variable (z in 11) would be analyzed as including all the material from the by-phrase to the end of the clause - in particular, it would contain material outside of S. There will be more said about end variables later; for the time being, it is simply assumed that end variables are not relevant for determining the domain of a rule, since if they were, all rules would be $\overline{S}$ rules.

11. x - NP - y - V - NP - by - z

Finally, for dative movement, we see that the only relevant material for this rule is the object NP and the to-phrase, again ignoring variables. We may also want to include the verb, since the rule is verb-governed. Making the assumption that the to-phrase is a part of the predicate phrase, we can say that dative movement is a Pred rule, since the material V-NP-to-phrase is all contained within the Predicate phrase. These assumptions about where various prepositional phrases are generated will be discussed in detail later, but I think the assumptions we have made about the to-phrase and the by-phrase are consistent with all analyses in the literature.

To summarize, 12 presents the domains relevant to these three rules:

12.



The inclusion hierarchy 10 predicts, via these assignments, the following order for these three rules, where ⟩ means "applies later than":

13. $\overline{S}$ ⟩ S ⟩ PRED ⇒ Q formation ⟩ Passive ⟩ Dative Move

That Question formation follows Passive can be seen from sentences where Q formation has applied to the output of passive, and passive could not have applied if it has preceeded passive:

14. Who has John beaten up by?

If Q-formation preceded passive, we would get the derivation :

15. a. [Who beat up John?]
    b. [Who [beat up John?]]
    c. *Who was John beaten up?

Although passive does apply to null subjects, as in b - c,

16. John was beaten up

the null subject after Q-formation has applied (a → b) does not qualify for an application of passive of this kind. 16, on the other hand is generated directly by the order Q-formation passive.

To see that passive follows dative movement, we need pairs of sentences like 17a and b:

17. a. John was given a book by Mary.
    b. A book was given to John by Mary.

The obvious description is that the input to passive can either be dative-moved or not:

18. a. Mary gave a book to John.
    b. Mary gave John a book.

Then the rule passive will give 18a from 17a and 18b from 17b, and we can use the same rule of passive as was used above. If dative followed passive, then 18b could not be generated by the simple rule of dative we have described. Notice that this argument does not depend on which is underlying, 17a or b. If it is 17b, then it is not a that the order dative passive will not generate.

Since we are working in a framework of partial ordering, Q-formation passive and passive dative q-formation dative. A problem with this is that sentences like:

19. *Who did John give a book?

are marginal or ungrammatical for most Americans, and the simplest capturing of this would be to say that dative follows Q-formation, and that Q-formation bleeds dative by removing one of the relevant NP's. I do not believe that this is a correct generalization, and will try to show so later. For now, note that the same argument could be applied to dative and tough movement (or deletion):

20. a. *John is tough to give a book.
    b. John is tough to give a book to.

Here, we cannot say that tough movement precedes dative movement and bleeds it (so we get a but not b) because tough movement in these examples applies on the cycle after the cycle on which dative has its chance to apply. Because of this, although there is some generalization here about movement or deletion rules vis a vis dative movement, it is doubtful that it has anything to do with ordering. Sentence a and b,note, are problems for all theories of ordering, partial, full, and unordered.

The predictions made in this example and the arguments used are typical of the kind that should be expected in this thesis.

One aspect of the theory that is not illustrated by these examples, but which should be called attention to, is that the

ordering of a rule does not have to do with the domain in which the rule applies in a given clause, but with the largest domain to which it can apply in any clause. This means that the order of rules is fixed in the grammar, and is derivation-independent. For instance, reflexivization has domain Pred in this sentence:

21. John told Mary a story about herself

since the antecedent and the reflexive are contained in the Predicate. We still maintain that reflexive is an S (at least) rule, and applies later than all predicate rules, since reflexivization also applies with the subject as antecedent.

4.0 The theory thus far suffers from two classical problems with theories in general: it is too strong and too weak. It is too strong in that it makes a surprising number of ordering predictions which cannot be tested. Some pairs of rules, like Q-formation and dative, above, have no direct argument for their ordering that I know of. They can be ordered by transitivity with passive as the middle term. Passive is especially useful in this role. For some pairs of rules I can think of no ordering arguments of any kind. Such a pair of rules is adverb preposing and subject-verb agreement. Adverb preposing moves adverbs to presubject position:

22. a. John opened the door quickly.

b. Quickly, John opened the door.

This rule is thus an $\overline{S}$ rule. Subject verb agreement need look at only the subject and the verb and is therefore an S rule. The theory predicts that adverb preposing will follow subject verb agreement. I know of no way to verify this ordering, though nothing seems to prevent it either.

The theory is too weak in that there are cases of ordered rules whose order is not predicted by the theory. The theory says nothing about the ordering of rules within a domain. In some cases, such as the case of the two predicate rules dative movement and particle movement, I will suggest that an ordering cannot be established. However, in other cases, such as with certain pairs of S rules, there is an ordering, but not one predicted by the phrase inclusion hierarchy. Such a pair are passive and q-float, both S rules (q float is bounded on the left by the subject and on the right by the verb). We have seen that these rules are ordered q-float passive. The S rules seem to fall into two classes - rules which treat the subject in its thematic relation[FN6] to the verb - passive and reflexive are two such rules, as Jackendoff 1972[FN7] has shown with the thematic hierarchy condition of these two rules - and rules such as q-float, which treat the subject nonthematically, that is, "purely

syntactically". The latter rules are independent of the verb involved, while the former are not, showing various dependencies on the matrix verb, such as via the thematic hierarchy condition. The former we will call thematic S rules, the latter nonthematic S rules. These notions will be refined in a later chapter. For now, I would like to suggest that all thematic rules precede all nonthematic S rules, and to point out that the phraseal inclusion hierarchy does not predict this generalization; in fact, no simple refinement (adding nodes to it) of it could predict this, because both sets of rules are bound on the left by the same item - the subject. We also claim that no rule with $\overline{S}$ domain (that can analyze material in $\overline{S}$) can be governed by the semantic classes to which the main predicate of the clause belongs.

The phrase inclusion ordering theory and the thematic-nonthematic ordering theory constitute the main of my claims about ordering. It strikes me that these two parts of the theory are not independent, but I have not been able to find a way to express them as a single phenomenon. The thematic distinction is orthogonal, but not opposed to the phrasal inclusion theory, and is, in fact, a patch up job on it. If there is, as I believe, a natural connection between these two parts of the theory, it is fairly abstract.

We will thus accept the ordering predictions given by the S

thematic distinction as independent of the phrase ordering hierarchy for the time being. They are included here because it is felt that there is a theory that will give both of these theories as consequences. There will be other such wrinkles as we proceed.

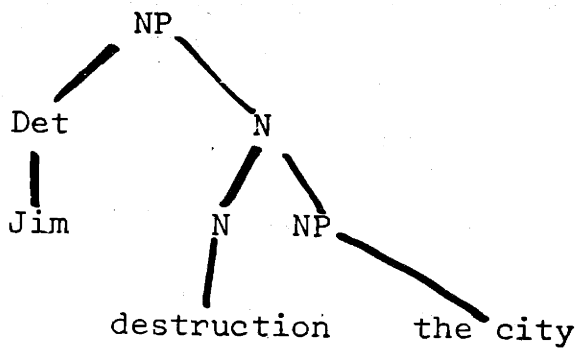
5.0. Deteriming what constituents of a clause are daughters of what nodes $\overline{S}$, S, Pred, VP, is tricky business. Several simple tests were introduced in Williams 1971; the degree to which an item subcategorizes a verb has to do with it; the more it does, the lower on tree 9. it is generated. The next chapter will discuss ideas about subcategorization in detail. The more preposable a post verbal constituent is, the higher on the tree it is generated. And the further from the verb a post-verbal constituent appears on the tree 9. the higher it is generated. Obviously, none of these tests predict that there are exactly four relevant nodes, $\overline{S}$, S, Pred, and VP, much less do they make any prediction about which of these nodes a given constituent is generated directly under. They make only relative decisions for pairs of constituents. The tree 9. (and the associated base rules, 8.) are nothing more than a useful, I think, first guess which seems to accomodate a large number of cases. I will discuss possible refinements (addition of nodes) having to do with the by-phrase. Even given 9. and the tests above, there is still tremendous room for different analyses of constituents.

New tests will be proposed, and an attempt will be made to use a consistent interpretation of the tests. 9. will remain, nevertheless, as one of many possible approximations of the phenomena discussed.

On the other hand, many determinations about grammar can be left completely in the air. For instance, whether a rule is syntactic or semantic, whether it is a deletion or movement rule, and often the directionality of movement rules. When a prediction about one of these questions is made by the theory, I will try to point it out. Many rules are discussed in their "standard" form. Some reanalysis of old rules, and some new rules, will be suggested.

5.0. We present here a counterexample. There is an NP cyclic rule which inserts <u>of</u> in the environment N__NP. This rule accounts for one of the most systematic differences between verbs and derived nominals: Jim's destruction of the city/Jim destroyed the city. In a mirror image theory, <u>of</u> is deleted in S's. If we extend the ordering theory to NP's, and if we believe that there is a phrase in NP's which includes the head of the NP but does not include the subject or determiner (as proposed by Chomsky)[FN8]

23.



then this insertion rule has $\overline{N}$ domain. However, it must follow object preposing, and NP rule, to avoid:

*The city's destruction of (by Jim).

The few places in S's where an <u>of</u> appears between verb and object, it remains after object preposing (passive):

John was spoken of frequently.

Thus, we find a fule with small domain applying after a rule with a larger domain. We will comment again briefly on the structure of NP's wrt our theory in Chapter 3.

6.0. I have not seriously investigated the universality of the theory here, but it would be fairly surprising if the theory were true for English, but not for other languages. The universal statement would run something like this:

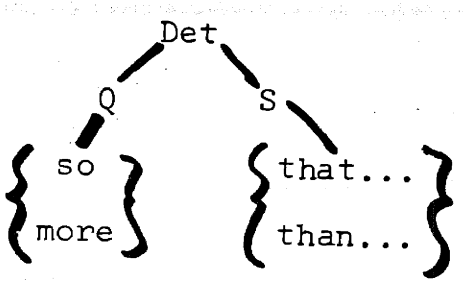
> Wherever in a language there is a phrasing internal to cyclic nodes, the transformations of that language can be partitioned and the partitions labeled with phrase nodes such that no rule that is a member of partition X ever need analyze material outside of phrase X, and for all partitions Y bigger than but including X, the rules of X are ordered before the rules of Y.

The most problematic languages for this theory would be V S O languages. Is there a phrase which includes the verb and the subject? The phrasing that obtains in such languages must be determined before the consequences of the universal statement can be derived.

How does a language learner assign rules to phrase categories? The weakest theory I can think of is one in which the language learner assigns a rule to the lowest phrase domain compatible with the data he hears. A stronger theory would be one in which the assignments could be made on the basis of the form of the rest of the grammar. Consider the full set of forms that can be generated by the four base rules for $\overline{S}$, S, Pred, and VP. Suppose that a rule was assigned to the smallest of these

phrases that contained material satisfying the structural description of the rule. It is easy to see that particle movement and dative movement would be assigned to Pred, and passive to S, as required. An important case where this will not work is the rules of result clause extraposition and comparative clause extraposition, and other rules extraposing quantifier-determining clauses. These are argued in Chapter 4 to be $\overline{S}$ rules, namely the quantifying work and the associated clause:

24.



will always be generated in strictly S phrases in base forms. This would lead to the incorrect assignment of these rules to S by the procedure just mentioned. It seems unlikely that the assignment of these rules to $\overline{S}$ domain isn't connected to the fact that these Q-S structures can arrive in $\overline{S}$ immediate domination in the course of derivation. If this were incorporated into the procedure above, we would have to take pains to insure that the procedure was still effective. On the other hand,perhaps some substantive universal rules are universally assigned to paticular domains.

Footnotes to Chapter 1

1. Chomsky, N., 1966, pp. 132-136.

2. Lakoff, G., and C. Kisseberth, Hate Rule Ordering Orgy, CLS8, 1972.
   Ringen, 1972.
   Koutsoudas, 1972.

3. Koutsoudas, 1971.

4. Jackendoff, 1972. Chapter 3.

5. Williams, 1971.

6. Gruber, 1965. Chapter 1.

7. Jackendoff, 1972, pp. 148-168.

8. Chomsky, 1970.

CHAPTER 2

1.0. This chapter has two purposes. One is to discuss in detail systematic differences between VP and Pred. The other is to distinguish daughters of Pred from daughters of S. For each case, we will show that a number of laws converge on the distinctions we are trying to make. In the case of VP versus Pred, the subject of section two, we will show that generalizations about semantics, morphology, subcategorization and syntax refer to this distinction. In many cases we will say that some daughter of VP is "the same" as some daughter of Pred "modulo" the systematic difference between VP and Pred which these generalizations represent. In section 3, we will look at systematic ambiguities which we will attribute to domination by Pred versus domination by a higher node, such as S.

In the remainder of this introductory section, we will consider the ordering of the two principal Pred rules, particle movement and dative movement, and we will look at the only case I was able to find of a VP rule.

1.1 A VP Rule. One rule with an essential variable with VP scope is the projection rule of Modal Dependency in want (i.e., opaque) contexts.[FN 1] We will rely here on Jackedoff's rule of modal structure. Jackendoff proposes an optional rule, his "Type I" rule, assigns NP's within the scope of want, and other verbs,

to modal dependence on the verb, which is structurally represented as:

1. John wants a fish → John, want (a fish).

Since the rule is optional, we can also have the structure:

2. John, a fish, want ( ).

These two modal structures represent the specific/nonspecific ambiguities that occur in want type contexts. That this rule has an essential variable can be seen from:

3. John wants Fred to tell Harry...to catch a fish.

The same ambiguity arises in indefinitely deep embeddings.

Jackendoff divides modal operators into three classes, depending on what scope they allow to the projection rule that assigns modal dependence. Want, and all verbs that contain modal operators are called Type I, and Type I scope consists of "one of the NP's it (the lexical item) strictly subcategorizes". The rule for Type I scope is clearly a VP rule, then, since only the VP contains NP's subcategorized by the verb.

Jackendoff believes that Type I scope rules apply at deep structure, unlike Type II and Type III scope rules, which he shows must apply to derived structure. The Type I rule is also responsible for the ambiguity between the specific and nonspecific readings of the object in the following:

4. &We need 300 more signatures.

That this rule precedes passive can be seen from the following:

5. &300 more signatures are needed.

The subject of this sentence is ambiguous the same way the object of 4. is. It is not ambiguous because it is the derived subject of need, much less because it is the derived subject alone - neither of the following are ambiguous:

6. a. 300 more people needed blood.
   b. 300 more people were killed.

It is ambiguous by virtue of having been the deep object of need. This is the same as saying that the Type III scope rule precedes passive, since it is the prepassive structure which is relevant.

Type I scope interacts with Type III scope in the following:

7. &How many people does John want to fight?

This is ambiguous - John wants to fight certain persons, or he wants to fight a certain number of unspecified people. This is the specific/nonspecific ambiguity again. Since this ambiguity does not arise in the absence of a <u>want</u> type operator or when the questioned item does not originate in the subcategorized - for complement of a want-type verb:

8. a. &How many people does John know?
   b. & want to fight John?

and since WH is a rule of unbounded movement, it is necessary to tie Type I scope to deep structure in some way. This we essentially accomplish by making the Type I scope rule for <u>want</u> contexts a VP rule - as such, it must apply very early to virtual deep structure, in our theory, and its domain is automatically limited to subcategorized-for items. The application of WH movement, as in 7. does not change the potential ambiguities that the optionality of the Type I scope rule gives rise to. Under our theory, WH movement and the Type I scope rule are widely separated - one applies at the beginning of the cycle, the other at the end. We will see in Chapter 4 that WH movement and other scope rules, ones which our theory orders in the vicinity of WH movement, interact strongly. Here, there is no

interaction - WH movement preserves the ambiguities that the earlier rule creates.

1.2. Upward Ordering of Pred Rules. The ordering dative movement passive is well known, as well as the examples showing it. The claim that dative movement follows WH movement was answered in the introductory chapter. Fillmore's argument that for dative movement follows passive is answered in this chapter in Section 2. The latter two claims are counterexamples to the ordering hypothesis, but we feel the evidence against them is good.

In the case of particle movement, in a passivized sentence such as:

9. The cake was eaten up.

assuming that particle movement is left to right (argument given latter) there is no direct indication whether particle movement has taken place. There are several alternative hypotheses here - one is that this sentence is generated in the same way as:

10. The matter was looked into.

by the rule of pseudopassive, a rule that differes from passive by having a P in the structural description of the rule between

the verb and the NP to be passivized. This approach would allow particle movement to follow passive. However, the particle passives do not behave like other sentences generated by pseudo-passive, like B. Real pseudopassive often needs extenuating circumstances to operate, while the passive of particled passives is as general as ordinary passive:

11. This bed has been slept in by {*Max / George Washington. / everyone I know.}

Pseudopassive is highly sensitive to what preposition is present, and gives semi or ungrammatical sentences when the wrong one is chosen:

12. The battlefield was looked {into / *around} by the generals.

But with particles, passive is not sensitive to the particle:

13. The books were put {away. / back. / down.}

The order was put through.

The battle was put off.

Minimal: Bill was run over.
?Bill was run into.

Because of this freedom of application differential, we want to say that particle passives are real passives; that is, they are not given by the rule $X^{\frown}V^{\frown}P^{\frown}NP$, but by the rule $X^{\frown}V^{\frown}NP$. One way this could be done is to have the base rule $V \rightarrow V^{\frown}P$. The A over A constraint would force passive to analyze the higher V as the V of its structural description. It must be required, then, that verbal affixes attach to the higher V. This theory also would allow particle movement to follow passive. I have not found cogent reasons for accepting or rejecting this solution. Carrier and Knecht[FN2] give discussion. One observation to make is that there are phrases like <u>eat right up</u> which under this analysis forces the following situation: right up is not a member or a lexical category; it is a phrase of some kind. This in the phrase:

14. Q $[_{V}$ eat $[_{\text{phrase}}$ right up $]_{\text{phrase}}]_{V}$

we have a lexical category dominating a phrase node of some kind. That <u>right up</u> is a phrase apart from <u>eat</u> is shown by the fact that particle movement moves it in its entirity. We may want to discard this solution on the grounds that a lexical node cannot dominate phrase nodes, but at the most, other lexical nodes.

Anyway, this suggests a third theory, one with the base rules $VP \rightarrow V^{\frown}P^{\frown}NP$ and the order of rules, Passive > particle movement.

Then particled passives are derived by the real rule of passive after particle movement has moved the particle out of the way. This solution is the only one of the three that involves rule ordering, and the ordering required is predicted by our theory. See Section 2.5 for further arguments.

Ross' argument that particle movement is postcyclic is a counter-argument to our theory. It, however, has been pointed out several times to depend on the transformational hypothesis concerning action nominals, which it would be inappropriate to try to evaluate here.

2.1. Subcategorization is the major function of the verb phrase. The verb is subcategorized by items that are daughters of VP, but not by daughters of Pred. For an initial example of this difference, we will look at objecthood. Berbs are highly subcategorized for __NP, that is, for objects and for other members of class VP. On the other hand, any verb which can be interpreted as having an agent subject can have a by phrase adverbial of the Pred phrase. This is a very different state of affairs from VP; no subcategorization of verbs in terms of objecthood rests on a semantic fact like agenthood. In fact, real subcategorization can be semantically meaningless, as in:

15. ...to smile a smile...
...to dream a dream...

...to homer in the ninth...
...to hit a homer in the ninth...

Compare this with by and from phrases in 16 a. and b.:

16. a. John got sick from eating so much.
b. John offended Mary by telling jokes.

Both are in Pred since they normally precede time adverbials of equivalent weight. They cannot both occur in the same Pred because one requires an agent subject (by) and the other a non-agent one (from):

16. c. John formed his opinion of the President by reading the newspapers.
d. John formed his opinion of the President from reading the newspapers.

c. and d. are subtly different semantically. This difference can be brought out be embedding each as a try complement:

17. a. John tried to form his opinion of the President by reading the newspapers.
b. John tried to form his opinion of the President from reading the newspapers.

b. is bad because try requires that its complement have an agent subject, and the from phrase requires that the same subject be

nonagent.

The simplest statement about what is going on here is that form an opinion is unspecified for the agenthood of its subject, and that agenthood is determined here by the configuration in which the phrase appears. That is, form an opinion does not belong to either the category by manner adverbial or the category from adverbial. There will be no cases where a verb will arbitrarily (from a semantic point of view) belong to one of these categories, as we saw could be the case __NP. Thus, to call both the relation between a verb and its object and the relation of a verb and a by phrase cases of subcategorization obscures the difference between them. The Aspects notation partially explains this by using parentheses to indicate optionality:

18. __NP S by manner adverbial).

But the aspects notation does not express the fact that subcategorizations such as:

19. __(NP) by manner adverb

are unlikely or impossible. This can be expressed, however, by limiting subcategorization, and therefore obligatoriness to the VP, to which manner adverbs do not belong. Ross (pers. comm.)

has pointed out to me the following counter examples:

20. a. John worded the letter *(carefully).
    b. John dressed *(well).

The arbitrariness of objecthood is seen also in the subcategorization of complement types. For instance, the three verbs decree, order, and demand are similar semantically, but their complement structures differ radically:

21. a. John { decreed / *ordered / demanded } that Bill leave.
    b. John { *decreed / *ordered / demanded } of Bill that he leave.
    c. John { *decreed / ordered / *demanded } Bill to leave.
    d. John { *decreed / *ordered / demanded } to leave.

These three verbs do not share a single frame with sentoid complement. Verbs require complements of different syntactic shapes. Despite regularities observed by Bresnan[FN3] and others, it is doubtful that these requirements can be completely explicated in terms of meaning.

Gruber's work[FN4] largely illustrates the arbitrariness of subcategorization. For instance, for the two verbs wait and await, Gruber would provide the following substitution frames:

22. a. await: V FOR NP
    b. wait: V FOR NP

Which says, await is substituted for a V plus for sequence, but wait only for a V. In Gruber's language, the for has been "incorporated" into await. This incorporation, widely illustrated in his dissertation, is idiosyncratic - it is governed by the length of the underlining bar in the lexical substitution frame.

On the other hand, the shape of a purpose clause, a manner adverbial, or a time adverbial clause is invariant from verb to verb. This is because they are not members of VP.

The crux of VP subcategorization is categories. Consider the three verbs, say, tell, and let on. Say appears most generally with sentential complements; the frame __NP for say is highly restricted and idiosyncratic - prayer, few words, something. This restriction on the NP's cannot follow from its meaning. Tell appears with both NP's and S's, but with S's it must have an indirect object:

23. a. John told (me) a lie, story, etc.

b. *John told that he was leaving.

c. *John told a way to do it.

The appearance of the direct object with S's is an idiosyncratic fact about tell. Let on cannot appear with NP's at all; it is restricted absolutely to S's:

24. a. John let on { that he was leaving.
b. { *a lie
c. { *a rumor
d. { *his departure. }

By comparison, various prepositional phrases are disjunctive with manner adverbs:

25. maliciously

with malice

*maliciously with malice

To my knowledge, no verb is subcategorized for one of these over the other. Thus the situation here has nothing to do with categories, as it did with the difference between tell and let on. But we would expect this if subcategorization were operative in the predicate phrase - and at least occassional arbitrariness in the syntactic category of the daughters of the predicate.

Rather we find semantically non-arbitrary selection.

In the above examples, the arbitariness of category selection for the complement of say versus the freedom of such selection for manner adverbials is related to the obligatoriness of a complement to say versus the optionality of the manner adverbial. In the case of the to-phrase, it is not so simple. Sometimes the to-phrase is not necessary, and sometimes it is:

26. *John gave the book.
John threw the ball.

It is impossible to give something without there being a benefactee, but it is possible to throw something without there being a receiver. This fact has interesting syntactic consequences we will look at at the end of this chapter. But is this a case of subcategorization? We have decided not, since other phrase types can be substituted for the PP:

27. John took Bill { to Sam's (PP) / away (P) / wherever he wanted to go (NP or S) / there (Pro) }

That is, there is a semantic requirement that take have a goal phrase, but any appropriate syntactic category can satisfy this requirement.

2.2. Double Objects. In this section we will look at double object constructions. We will examine parallels between double objects and to and from constructions. The parallels are interesting because we are going to claim that the constructions are the "same" modulo certain systematic differences which we attribute to the differences between Pred and VP, differences we see elsewhere (2.1 - 2.6).

We will first look at systematic differences between the following two frames:

28: a. (give) $[_{Pred}\ [_{VP}\ V\ NP\ NP\ ]_{VP}\ ]_{Pred}$

b. (give) $[_{Pred}\ [_{VP}\ V\ NP\ ]_{VP}\ to\ NP]_{Pred}$

in terms of a set of internominal relationships subsumed under the rule of Oehrle, so-called because these relationships are most exhaustively studied in Oehrle (forthcoming). A better name might be the Law of Oehrle, since these relationships do not resemble transformations, as will become clear.

A whole class of cases of double objects has been studied under the name of dative movement. The rule of dative movement itself, motivated without reference to a semantic notion like goal, expresses the relation between 28 a. and b. Recently, it

has been contended that dative movement is not involved in a number of dative constructions (Bowers)[FN5] or in none at all (Oehrle)[FN6]. This contention is based on the observation that in many cases there are semantic entailments and restrictions that play a role in the double object construction that play no role in the (related) to-phrase construction.

For instance, cases where there is an "intrinsic possessional" relation between the two NP's allow the double object, but not NP to NP:

29. a. John gave Bill a cold.
    b. *John gave a cold to Bill.

(see Bowers, Oehrle). Oehrle has discovered that, for instance, in communication verbs, (X communicates Y to Z) that there is a strong entailment that the communicatee has "understood" the message where the double object construction is used, but no such entailment where the NP to NP construction is used. The reader may check this with tell vs. announce. Since these kinds of cases are treated so extensively by Bowers and Oehrle, we will not go into them here. These "special relations" and entailments are very mysterious and elusive; we will refer to them collectively as the "rule of Oehrle". I feel that the material in the next few sections is all related to the rule of Oehrle.

For instance, Anderson's "holistic" interpretation discussed in the next section. We are interested in these relations because they are bounded on the right by VP, and they are helpful in understanding the VP.

Rather than discuss further the extensively examined NP to NP cases, we will look at a parallel set of cases with "negative" verbs, and "negative" propositions:

30. a. steal $[_{pred}\ [_{vp}\ V\ \ NP]\ from\ NP]$

b. rob $[_{pred}\ [_{vp}\ V\ \ NP\ of\ NP]\ ]$

The parallel between 29. and 30. is obvious - to=from and Ø=of. Gruber[FN 7], shows that <u>from</u> is negative:

31. a. John was restricted from watching any TV.

b. *John was restricted to watching any TV.

We will thus assume that <u>to</u> and <u>from</u> are negatively related antonyms, and look at several assymetries that this negativity difference gives rise to.

To and from both take locative expressions as their objects. These can be NP's, PP's, or <u>where</u> clauses. In the case of

PP's, to → ∅ obligatorily. In the case of where clauses, to → ∅ optionally. From cannot delete in either case.

32. John ran { *to / from } under the table.

The antonyms into and out of differ in the same way. There is a relation between of and from we will consider later.

33. John went { in / into / out of / *out } the room

John went { in / out } the door.

If of is negative like from, we can say of the above that to → ∅ optionally, but from and of, the negative prepositions, cannot.

34. The same fork { as / that } I saw yesterday.

The same fork as yours.

An answer different from yours.

A different answer than you got.

*A different answer that you got.

*An answer different than you got.

Why can't different have a that clause like same? Because as,

like to, can delete, and the unmarked complementizer "that" is inserted; but than, because of its negativity, like from, cannot.

In addition to the into/out of // to/from pair above, there are several places where from and of are parallel in many respects. For instance, there is the pair free of and free from, which differ in subtle ways, but which do not differ in the negativity of the preposition in each case.

A more interesting relation is shown by the following pairs:

35. rob x of y
steal x from y
deprive x of y
take x from y
empty x of y
remove y from x
drain x of y
drain y from x

There are many such cases; in each case we can semanticize, "cause x not to be in y" or "cause x not to have y". Thus, we can say that of and from both appear with negative verbs. This is not completely right, since deny is negative, and appear with to:

36. They denied any further help to the linguists.

In the pairs in 35, we see that the arguments with from are reversed with of. Theme from Source, Source of Theme. Suppose that dative movement were generalized to relate the pairs in 35:

37. V NP {to / from} NP → V NP NP.

such a rule would violate the tendency illustrated earlier, that negative prepositions are not deletable. But if of is negative like from, then we can regard the pairs in 35 as related in much the same way as dative movement relates pairs:

38. a. They stole {your / my} wallet from me.
b.

c. They robbed me of {*your / my} wallet.
d.

e. They robbed John of his pride.

f. *They stole John's pride from him.

The "possession" restriction between the source (here me) and the theme (here wallet) occurs only in the NP of NP construction and not in the NP from NP construction. This is the strongest parallel between negative dative movement and dative movement to my mind. We find another mysterious but no doubt related paradigm where the theme is a "modal" noun:

40. a. They cured John of {*his / the} desire to procreate.

b. They cured John of {his / *the} desire to punish his sister.

c. The accident deprived John of {the / *his} ability to walk.

d. The accident deprived John of {*the / his} ability to fly.

e. It freed John of {*his / the} obligation to pay taxes.

f. It freed John of {his / *the} obligation to take care of Fred.

If the ability or desire or obligation is one accorded to all human beings under normal circumstances, the is used. But if it is specifically John's own special ability, etc., a pronoun is used. This paradigm also occurs when the theme is direct object and the source is the subject, but not when the theme is direct object and the source is in a from phrase:

41. a. John lost {*the / his} ability to fly due to the accident.

b. John lost {the / *his} ability to walk due to the accident.

These are not facts about "ability to", etc., because in other contexts, one does not find this restriction:

42. John said that the accident impaired his ability to walk.

What John needs is the ability to fly.

Also, we find "inherent" possession prohibited in some from phrases:

43. They removed { a bullet / *a kidney } from him.

Thus, cure, for these reasons, could never have a from subcategorization, since it always involves an inherent relation:

44. *They cured him from his cold.

Negative dative movement is unlike dative movement in a couple of ways. First, there are from/of pairs, where the arguments are not reversed:

45. Free John from X.
Free John of X.

Even in these cases, however, the semantics of special possession are at work, distinguishing the two cases. More important, the pairs of verbs related by negative dative movement are rarely homophonous, unlike the cases related by regular dative movement, and the cases where they are, like drain, one feels are accidental. By the lexical hypothesis this relation between such pairs as rob of and steal from would not be syntactic. If dative movement never is, then the rule of Oehrle and the similarity expressed in 36 are deep generalizations, indeed, cutting

across separate components of the grammar (lexicon and syntax). We are not concerned with that here - our purpose is to use the relations to separate VP from Pred.

1.3. Anderson's Paradigms.[FN8] Steve Anderson gives interesting discussion on the role of deep structure from paradigms of the following kind:

46. a. John loaded the {hay into the wagon.
    b. {wagon with hay.}

47. a. John sprayed the {paint on the wall.
    b. {wall with paint.}

Anderson noted that the NP objects in the b sentences receive a "holistic" as opposed to a "partitive" interpretation. The synonymy of the a-b pairs is captured by the system of thematic relations, in which, for instance, hay and paint are themes, and wagon and wall are goals. The difference in meaning is stated in one deep structure. Anderson thus calls into question whether the two systems, thematic and deep structural, are congruent. We will give argument in the next chapter that they are not.

At any rate, at whatever level we assume the a sentences to differ from the b sentences, we see again a difference between VP and Pred domination. If this level is deep structure, then this paradigm aligns itself nicely with other cases we have looked at, like dative movement. In fact, this relation is like dative movement in a number of ways: first, the synonymy that holds between the pairs related by either relation is thematic; second, the difference in meaning that holds between the pairs

is subtle, but decisive enough to determine the application of the rule in some cases, if we assume that there is a rule involved. Bowers and Oehrle have discussed this aspect of the dative movement rule. As far as Anderson's paradigms go, notice that the B sentences are worsened if indefinite PP is substituted for the definite ones. Third, there are verbs that do not undergo the rule at all; donate in the case of dative movement, and fill and put in the case of Anderson's paradigms. As far as assessing the transformational status of rules here, the only difference between Anderson's paradigms and dative movement is that dative movement has many more productive pairs to relate.

1.4. Manner Adverb vs. Pred Adjective. Four our purposes we want to distinguish two kinds of manner adverbs. We will use the two adverbs quickly and nicely:

48. John painted the house { quickly. / *nicely. }

49. John { quickly / nicely } painted the house.

One of these, quickly, modifies John's activity. The other, nicely, modifies the result of it. In the passive adjective, we get only the result adverb:

50. The furniture is { nicely / *quickly } painted.

In the passive adjective, the result of the activity is asserted; the activity itself is presupposed and cannot (though I can't say why) bear modification.

The sentences in 48 might indicate that these adverbs have different deep sources:

51. $[_{\text{Pred}}$ quickly VP nicely $]_{\text{Pred}}$

with an optional structure preserving rightward movement rule

52. *John painted the house nicely quickly.

Many adverbs can function as both kinds of manner adverb:

53. John runs nicely.

In this sentence it is obvious that it is John's activity that is being modified. Second, the surface distribution is affected by several other factors:

54. a. John quickly ran up the hill.
    b. *John quickly ran.
    c. John quickly cleaned the pots.
    d. John ran quickly.

Also, most of these adverbs function as sentential rather than manner adverbs - thus, there is a difference in meaning between:

54. a. John ate quickly.
b. Quickly, John ate.

To turn to our main point, we want to describe several contrasts between result modifying manner adverbs and predicate adjectives, as in John painted it red. In order for these contrasts to be of any interest, we must first establish a context of similarity between the two constructions.

First, there are two coocurrance facts that indicate that these two items have something to do with each other. The first one is fairly simple - these two items have trouble occuring in the same clause:

55. a. *John shaped it square beatifully.
b. John shaped it square.
c. John shaped it beautifully.
d. It is shaped square.
e. It is beautifully shaped.
f. *It is beautifully shaped square.

With non-result manner adverbs, we do not find this restriction:

56. John quickly shaped it square.

This could be taken as evidence for a base rule:

57. VP → V NP {adj. / adv.}

However, I believe that some of the differences between the adjective and adverb aligns with other differences between VP and Pred, and that the analysis called for is:

58. PRED → VP ADV.
VP → V NP ADJ.

This gives us no way to represent the cooccurence facts with base rules. A second cooccurance fact is seen in the following:

59. a. John painted it {red. / green. / *beautiful}
b.
c.

d. John hammered it {flat. / smooth. / *round}
e.
f.

g. John washed the dishes {clean. / *dirty.}
h.

i. *John washed the dishes cleanly.
j. *John hammered the metal smoothly. (in result meaning).

The predicate adjective is limited to one dimension of modification, and this dimension is specified by each verb that allows them. For paint it is colors, for hammer it is a certain shape

or texture, for wash it is cleanness. Not only that, but in most cases only a subset of the predicates of that dimension can appear, although others are imagineable. Further, the predicates allowed in the predicate adjective are excluded in the manner adverbial. Where this does not seem to be the case, it is probably that different verbs are involved:

60. a. John made the cabinets beatifully.
    b. John made the cabinets beautiful.

In the first sentence, the cabinets are created by John; in the second they are not. These sentences also show that predicates cannot be divided into two categories, one for predicate adjectives and one for manner adverbs - beautiful must be available for both positions. This varies from verb to verb. Very specific categories, such as shape and color, do seem to be limited to the predicate adjective position.

In Williams (1972)[FN9] it is argued that there is a commonality of goalhood in the predicate adjective, the result manner adverbial, and the (in) to phrase. This can be seen in the rough synonymy of the following:

61. a. Shape it square.
    b. Shape it into a square.
    c. Shape it beautifull .
    d. Shape it into something beautiful.

The into phrase, like the to phrase of spatial motion is indicative of goal. With spatial motion verbs, the adverb slightly cannot appear if there is an explicitly goal phrase, although it can appear with an explicit source phrase:

62. John moved slightly (from the line).
*John moved slightly to the line.

If we regard the Pred adjective, the manner adjective, and the into phrase all as indication of goal, then we can explain the nonoccurence of slightly in all three:

63. a. John slightly reshaped it.
b. John reshaped it.
c. *John slightly reshaped it { square. / beautifully. / into something beautiful.
d.
e.

This move entails identifying the notions goal and result. This identification is argued in Williams (1973) and will be seen here later on.

Again, the base rule:

64. VP → V NP { Pred adj. / manner adv. / (in)to NP }

might be used to express this fact. But this says nothing about the special status of the predicate adjective, that it is tightly governed by the verb, semantically and syntactically, while the manner adverb is much freer. It might be countered that a base rule is no place to say such things, but this same difference characterized several other pairs of constructions we have been looking at and will look at in this chapter, where the conjunctive bracketing used above is inapplicable.

The structure proposed here is given by:

65. PRED → VP { Manner adv. / into NP }
VP → V NP Pred adj.

With these base rules it is easier to talk about the difference in control the verb has over the two constructions, since the restrictions on the predicate adjective are typical of restrictions on subcategorized-for items. And it is possible to limit subcategorization to the VP. This means that verbs like paint and wash have frames like:

66. __NP (Adj.) or __NP Adj.

but that there are no such frames:

67. __NP (manner)

This embodies the claim that the occurence of manner adverbs is syntactically and lexically free, whereas the appearance of predicate adjectives is a lexical fact, and subject to idiosyncratic restrictions, etc.

Another argument for the latter set of base rules is the rule of nitching:

68. a. He painted it, we agreed, *as black as was possible.

b. He painted it, we agreed *as beautifully as was possible.

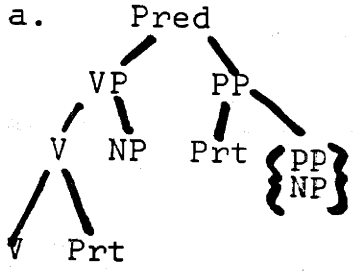
If nitching is best in higher constituent breaks, then the latter set of base rules gives this result, but the former does not.

The identity of manner adverbs and predicate adjectives on the thematic level (i.e., they are both manifestations of GOAL) should lead to a theory that explains the cooccurrence facts that we have mentioned, but we will not go into that here.

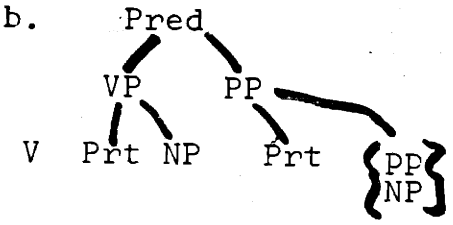
1.5. Particle Movement. Emonds[FN10] presents evidence that particle movement is leftward, and that it is a minor movement rule. Here, we will look at a theory where it is a structure preserving rule, and basically rightward.

1.5.1. We are argueing for either of the following:

69 . a.



b.



In a., the particle to the left of the object is dominated by VP, and in b., by Pred. This distinction by domination is not crucial for the immediate discussion, but is consistent with considerations of other aspects of base structure presented here.

1.5.2. Consider the following more or less systematic ambiguity of all particles:

70. a. John put the two items together.
b. John put the airplane together.

One use of together (the one in a) requires a plural object and describes a spacial relationship between the items that make up

that plurality. The other means to assemble the parts of, and can take a singular object. Below is a chart of particles that can be described by this ambiguity. The left side we will call the "object as object" (oao) meaning; the right, the "object in space" (ois) meaning.

71	a. clean up	up	bring up (to)
	b. kick in (=bash)	in	kick in (to)
	c. kick over (=invert)	over	kick over (to)
	d. nail sq. together	together	nail pl. together
	e. pierce through X	through	pierce X through (to)
	f. clean out	out	toss out

(An interesting question is, are there idiomatic ois particles?)

The theory we will give evidence for says that oao particles are VP dominated and that particle movement moves oao particles into ois position.

72. a.?*I threw out the football. (*to Fred)

b. I threw the football out.

c. I cleaned out the oven.

d. I cleaned the oven out.

e. I put together the model planes.

f. &I put the model planes together.

g. John kicked over a milk carton.

h. &John kicked a milk carton over.

a. is out because there is an ois particle in oao position. The reverse, as in d., is fine. This distribution:

73. $\left\{\begin{matrix}\text{oao}\\ \text{*ois}\end{matrix}\right\}$ NP $\left\{\begin{matrix}\text{oao}\\ \text{ois}\end{matrix}\right\}$

is evidence for a rightward movement rule. Such a rule predicts f and h as ambiguous, and e and g as not. Most idiomatic particles work like oao:

74. a. John threw up his lunch.
b. &John threw his lunch up (in the air).

1.5.2. -Ing Nom. Ois particles are very unusual in -ing nominals.

75. a. &The putting together of the planes.
b. *The putting of the planes together.
c. The placing of the planes.
d. ??The placing together of the planes.
e. *The placing of the planes together.
f. John $\left\{\begin{matrix}\text{put}\\ \text{*placed}\end{matrix}\right\}$ together the toys.
g. .
h. John placed the toys together.

a. and c. show that place and put have -ing nominals. f. and h. show that both take together. g. shows that place takes only ois together. Put, as we have seen, takes both ois and oao together. a. is not ambiguous, however; it has only oao reading.

d. shows that place, which takes only ois cannot nominalize with together at all. b. and e. show that -ing nominals do not allow particle movement. Perhaps these two restrictions are related. The structure preserving restriction might provide such a relation. Other cases like the above are:

76. a. The kicking over { of the table. } { oao }
    b. { *of the sphere. } { ois }
    c. The coming (*over) of the Visigoths (*over)

Again, idiomatic V-particle pairs appear to work like oao:

77. a. The looking up of the answer.
    b. The cleaning out of the garage.

1.5.3. Load and Fill. Load, as Anderson has pointed out, has two subcategorizations:

78. a. John loaded the hay into the wagon.
    b. wagon with hay.

It is reasonable to assume that wagon and hay fulfill the same thematic relationships, in the sense of Gruber, in a. as they do in b., namely, goal and theme respectively. Lest it be thought hay is something akin to an instrument in b., notice:

79. a. John killed Mary { with / without } cyanide.

b. John loaded the wagon { with / *without } hay.

The particle up goes with both subcategorizations:

80. a. John loaded up the wagon with hay.
b. John loaded the wagon up with hay.
c. John loaded hay up into the wagon.
d. *John loaded up hay into the wagon.

In a. and b., up has the "completive" sense. It describes the wagon as wagon (oao). In c. and d., up has a directional sense, relating the position of John to the position of the wagon (ois). We see that ois particle (c.) is linked to the possibility of having a goal phrase (into the wagon) while the oao particle is not. d. is out because the ois particle is in oao position, which is not allowed by our rightward movement rule.

1.6 Emonds' Account. Emonds' arguments that particle movement is leftward are three: first, he shows that particles should be thought of as intransitive prepositions, and prepositions have to be generated to the right of the object anyway, thus, the base rules are simpler if we do not have to put them at the left of the object, too. Second, he considers the distribution of the PP modifying morpheme right, and third, he

theorizes on the interaction of particle movement and dative movement.

His first evidence is exactly what we are arguing against, by trying to show that particle movement is structure preserving, so there is nothing more to say about it.

Distribution of Right + PP. Emonds argues from examples like:

81. a. *John ate right up the beans.
b. John ate the beans right up.

for a leftward rule. This is a paradigm argument for the direction of a rule, in which exceptions indicate the source of a movement.

Consider what theory could be drawn from the following paradigm, which contains all particles of the type I have called oao:

(L=light; H=heavy; LH=light X, heavy Y)

82. a.	John fixed up the chair.	LL
b.	John fixed the chair up.	LL
c.	??John fixed the mahogany divan up.	HL
d.	John fixed up the mahogany divan.	LH

e. ?John turned over the chair. ML
f. John turned the chair over. LM
g. John turned over the mahogany divan. MH
h. John turned the mahogany divan over. HM

i. John put the chair together. LH
j. ??John put together the chair. HL
k. John put together the mahogany divan. HH
l. John put the mahogany divan together. HH

The sentences that are questioned are the cases where a lightweight particle occurs after a heavy NP, or where a heavy particle occurs before a lightweight NP. a. through d. show the first restriction, and i. through l. the second. e. through h. is an intermediate case.

With ois particles, we find this constraint interacting with a strong preference for the rightmost position:

83. m. ?John tossed up the ball.
n. ??John threw over the ball.
o. ?John threw over all the big balls.
p. ??John placed together all the big balls.

These sentences require a leftward rule under the theory here, but this rule is very weak; i.e., it is only invoked to avoid extreme violations of the principle above about the relative weight of the particle and object. This rule, then, does not have the status of the rightward rule (it is more like Heavy NP shift).

a. through l. indicate that the distinction does not have to do with deep order, but rather with surface order conditions. To write this into the particle movement rule would require a disjunction, since a. and d. do not differ from k. and l. the same way as k. and l. do from i. and j. The surface statement is, "the lightest thing goes first." Also, the ?-status of m-p can be attributed to a conflict between the surface condition and a basically rightward rule. I think that an explanation for the distribution of right + PP could be worked up along these lines, which means that it would be unusable as a quick to deep structure.

1.7 Particle and Dative. Emonds' underlying order for all Prt dative constructions is:

$$84.\quad V - NP_1 - Part - \left\{\begin{matrix}to\\for\end{matrix}\right\} NP_2 .$$

The preferred surface order (besides 84) is:

$$85.\quad NP_2 - P - NP_1.$$

Dative movement is an exchange rule. For dialects which permit:

$$86.\quad P\ NP_2\ NP_1$$

particle movement is ordered after dative movement; for dialects

which do not, it is ordered before dative movement and destroys the dative movement environment.

In the theory here, the possible underlying orders are 84 and

87. V - Part - NP_1 $\left\{\begin{matrix}\text{to}\\\text{for}\end{matrix}\right\}$ NP_2.

The interaction of these two rules is a difficult topic, mainly because judgments are unreliable, but Iwill mention some facts which I think indicate that Emonds' solution is not in the right direction.

First, why is there a difference here:

88. a. John handed him over the money.
b. *John turned him over the money.

My gues is that the reason is that turn is not a possessional verb except with over (or other particles, like in - *John turned him in the money.) whereas hand is a possessional verb by itself. The distinction does not seem to be, "what forms a semantic unit"; there would be no way to distinguish hand over from turn over; the difference seems to be, how much information about the semantic typology (e.g., whether possessional, etc.) of a verb-particle pair can be gotten from just the verb. Such a distinction would be useful mainly to a real time decoding

procedure, and would be transderivational. Such a restriction covers a surprising number of cases. Mark Aronoff has shown me a related restriction:

89. a. I threw John down a wrench.
    b. *I threw John down a tube.

If the derived P NP sequence can be interpreted as a deep PP, the "deep" interpretation "interferes" with the interpretation that would otherwise be given to the derived sequence.

Emonds places the restriction on particle movement that NP_1 must not be a pronoun. Similarly, a restriction must be placed on dative movement:

90. a. *I gave John it.
    b. It was given to John.

b. shows that a cliticization rule preceding dative movement and particle movement will not work: b. could not be generated, since passive follows dative. The restriction is the same for both rules. This hints that we might reformulate it as a condition independent of the two rules. This aproach is strongly supported by restrictions which cannot be stated on either of Emonds' rules:

91. a. I sent {T. Featherington Quince / him} a bottle of wine.
b.

c. I sent {*T. Featherington Quince / him} up a bottle of wine.
d.

a. and b. show that c/d differential cannot be attributed to dative movement and since the particle is stationary (and P.M. precedes dative movement anyway for Emonds' dialect A) it cannot be attributed to particle movement.

These facts, as well as the facts about the distribution of right + PP, indicate that much of the government of these rules (particle movement and dative movement) and their interaction has to do with aiming for, or avoiding, certain surface forms. Some of the restrictions have to do with cliticization:

92. *I cleaned out it.

*I gave Bill it.

These sentences exhibit a unitary phenomena that should be factored out of both particle movement and dative movement and stated at least after passive, as we will discuss below. Likewise, the distribution of right - P and other phenomena related to heaviness are surface facts, and no guide to deep structure. As a corollary to this such phenomena cannot be used as a guide to rule ordering. What is required of these two rules is that

they overgenerate the set of surface forms. Paradigms like 82 and 83 are designed to control the surface filters as much as possible to catch a glimpse of deep structure, but still there are leaks. For instance, a relatively weak rule of backwards particle movement is needed for sentences with heavy objects and ois particles:

93. John threw up all the balls we had thrown down to him.

This rule may be the same as heavy NP shift since:

94. John threw back <u>up</u> <u>to</u> <u>us</u> all the balls we had thrown down.

We may compare this with dative movement. Bowers and Oehrle have pointed out that the "derived" system is required where there is an inherent connection between theme and goal:

95. a. John gave Bill a cold.
b. *John gave a cold to Bill.

This is not always the case; for instance, overriding surface considerations can make the underived system acceptable in these cases:

96. a. John gave a cold to everyone in the room.

b. John gave everyone in the room a cold.

This is analogous to the cases where ois particle appears before heavy NP object. Heavy NP shift can play no role with dative movement, however:

96. *John gave a cold everyone in the room.

this is independent of which system we take as primitive.

This contrasts interestingly with negative dative movement where "heaviness" does not confer grammatically on the supposedly related system, but rather involves the rule of heavy NP shift which was prohibited for dative movement:

97. John deprived of pride all the war refugees. (H NP shift)

*John deprived pride from all the war refugees.

Similarly with Anderson's paradigms: heaviness cannot shift grammatically from one system to the other. Rather, heavy NP shift is used to achieve surface goals:

98. a. *John filled hay into all the wagons he could find.

b. John filled with hay all of the wagons he could find.

99. c. *John put the wagon with all of the hay that he could find.
d. John put into the wagon all of the hay that he could find.

Thus, on the one hand we have dative movement where heaviness gives rise to reverse dative movement and on the other, negative dative movement, and Anderson's paradigms for which there is no reversing except by heavy NP shift. Another difference between dative movement and the other two is that dative movement is much more alive syntactically - the number of pairs of verbs related by it is very large, and the relation is often, but not always, semantically neutral. On the other hand, the productivity of negative dative movement and of Anderson's paradigms is slight - the verbs that fit into both systems are few . Perhaps then the existence of a reverse rule for dative movement is an attestation of its syntactic aliveness, and the lack of one for the other two rules of their lexicalized status. If this is so, then we would want to put particle movement in the reverse movement column, instead of the heavy NP shift column, since it is syntactically active.

If particle movement is left to right as we have claimed, it gives rise to an argument that the domain of a rule binds the end variables of the rule. Consider the particle off. This particle seems to move without exception, when it is used idiomatically:

100. a. Turn off the lights.
b. Turn the lights off.
c. Run off some copies.
d. Run some copies off.
e. Drive off the wolves.
f. Drive the wolves off.

Consider the adverb yesterday. Is it really an adverb? It is obviously an NP sometimes, since it can be the subject of a sentence:

101. Yesterday was nice.

But what about yesterday in:

102. John was here yesterday.

Here, also, it appears that yesterday is an NP, since other items with the structure of NP's can be substituted for the adverb yesterday, such as "the day my mother left."

103. a. The riot yesterday...
b. Yesterday's riot...
c. This year's funerals...

103. shows that yesterday can appear in NPs in its adverbial use; adverbs are normally excluded from NPs, and from 's marking. Now how can we block particle movement from moving the exceptionless particle off over the NP yesterday?

104. The plane took off yesterday

X V P NP

*The plane took yesterday off.

One approach that has been suggested to me seems vacuous - yesterday would have the structure:

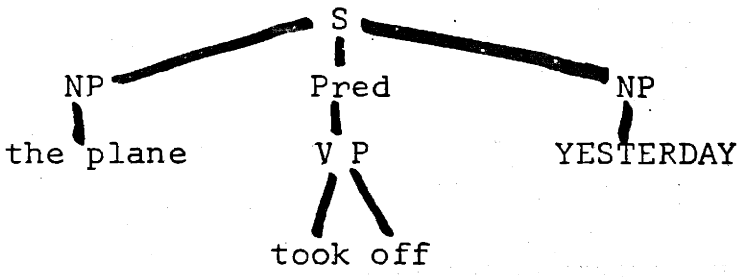
105 $[_{Adv}[_{NP}$ yesterday $]_{NP}]_{Adv}$.

This approach, which uses category labels as function markers, does not block particle movement, since the SD of the rule cannot tell the difference. Further, it makes mysterious the fact that yesterday can be used in its adverbial use within NP's, since adverbs are normally excluded, and if the adverbial label somehow prevented particle movement in the above sentences, it seems that it would also prevent possessive marking when this item was moved into the determiner of an NP.

Another approach would have yesterday as a deep PP on yesterday, and also a rule on → ∅/___ time adverb. The rule would be obligatory for pronouns like yesterday and optional for full NP's like "the day my mother left". This rule is crucially ordered after particle movement. In fact, no one would consider the reordering of these two rules as a possible syntactic change that English could undergo.

I feel that there is a more principled reason for the inability of particles to move in these cases. The deep structure of 104 is the following:

106.



This rule of particle movement is a rule of predicate domain. If we assume that if a rule is of domain X then a proper analysis of a string by the structural description of the rule cannot contain terms which are outside that domain, then we have explained the failure of particle movement in these cases in a principled way. Of course, it remains to be seen if the principle has any further applications. This approach still permits:

107. The employees took yesterday off.

of course, where the NP is within the predicate phrase.

This argument applies in a more trivial case. If it is assumed that left dislocation does not dislocate the subject NP into the predicate phrase, an assumption that is virtually guaranteed

by the obligatory pause before the dislocated NP, we want to block:

108. He threw up, John.
V P NP
He threw John up.

Here, ordering left dislocation after particle movement, which we would claim on other grounds must hold anyway, would give the right results, but binding the rule of particle movement by its domain makes it impossible for the situation to be otherwise.

1.8. CONCLUSION. In the past few sections, we have examined a number of what I would call related phenomena: 1) the distinction between the predicated adjective and the manner adverb of result; 2) dative movement and the rule of Oehrle; 3) negative dative movement; 4) the dual role of particles and particle movement; and 5) Anderson's paradigms. In each case an opposition was set up and attributed to the distinction VP/Pred - these are listed below:

109.

	VP	PRED
1.	NP_1 NP_2	NP_2 to NP_1
2.	NP_1 of NP_2	NP_2 from NP_1
3.	NP ADJ	NP ADV
4.	Part NP	NP Part
5.	NP_1 with NP_2	NP_2 (in) to NP_1

In all cases except 5 we can say that the strings on the left are dominated entirely by VP, while the ones on the right are dominated by Pred. In 5, both are dominated by Pred, but the distinction is based on whether NP_1 (or alternatively NP_2) is dominated by VP or Pred.

In each case we have tried to show that the systems on the left are more tightly constrained than the systems on the right. Strong subcategorization obtains on the left but not on the right. Requirements of intrinsic connection and holistic interpretation occur in the VP, but not in the predicate. It may be true that all instances of idiomatic V + particle constructions are made from VP particles, while all Pred particles have a compositional meaning, but this seems unlikely to me since idiomaticity is certainly not limited to the VP.

In all five cases, the relation between the two systems has a strong semantic base. In the case of dative movement, negative dative movement, and Anderson's paradigms, the relation is an identity of thematic relations. In the case of particles and of predicate adjective versus manner adverb, it is a similarity of semantic function.

A question that immediately arises when it is claimed, to pick one example, that there are two particle positions, is, why are

there no clauses with two particles:

110. a. John at up Mary out.

b. John kicked in the bucket over the hill.

As far as we are from answering this question, I think we can at least see that the question arises for each of the five cases we have looked at:

111. a. *John threw Bill the ball to Mary.

b. *John robbed Bill of his wallet from Mary.

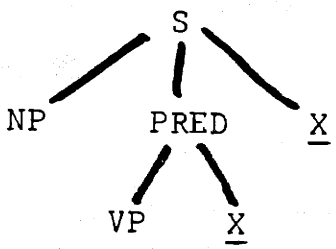
c. *John loaded the wagon with hay into the box.

d. *John hammered it flat beautifully.

For the first three cases, we can appeal to the identity of thematic relations induced by the three rules - each thematic relation can have only one instantiation per verb. For the last case, as with particles, we can appeal only to the vague notion of semantic similarity. Yet one feels that a single answer would suffice for all five cases, if only one knew how to put it.

2. In the following sections we will look at three cases in which a construction has two uses, each with its own properties. We will claim that the difference in each case between the two uses is one of domination - one is dominated by Pred, and the other by S:

112.



2.1. Many rules, such as WH movement, apply to subject and object indifferently. Other rules, such as adverbial participle equi, to be discussed here, apply to both subject and object, but with a difference.

113. a. I saw John leaving the room.
I heard John leaving the room.
I watched John leaving the room.

b. I invited John hoping that he would bring Mary.
I visited John having waited for Mary for three hours.
I gave John a present thinking he had behaved himself.

In the cases under a, the object of the matrix controls deletion; in b, the subject controls it. In the following, either can control deletion:

114. I left John thinking Bill was dead.

In fact for the sentences in a, deletion with subject control is also possible:

115. I saw John, having placed {myself / *himself} on a ladder.

The object cannot control deletion where the participle is perfective.

However, for the sentences in b, there is no possible participle for which the object can serve as controller. In general, this is the case - control by the subject is free, but control by the object is governed by the choice of predicate. Among the predicates that allow control by the object are verbs of perception:

116. I {saw / heard / watched / felt} John leaving the party.

It may be that the object can control equi only when it is theme; we have noted the ambiguity of

117. I left Bill thinking John was dead.

However, abandon, which one would suppose to have the same thematic relationships as leave, is not ambiguous:

118. I abandoned Bill thinking that Sam was dead.

This may be explicated in terms of an ambiguity of thematic relations for leave, but not for abandon. Leave can have source or theme as object, but abandon only source.

It is clear that there is no thematic restriction on subject equi - below is a sample:

119. John gave Bill a shoe, thinking him shoeless.	Source
John bought a rake, having given up on his comb.	Goal
John went there hoping to see Mary.	Theme
John shot Mary trying to vindicate himself.	Agent

The ambiguity of control in the above is undoubtedly related to the ambiguity of the following locative PPs:

120. a. I {imagined / saw / left} Mary in the woods.
b.
c.

In both cases, these PPs have a general locative meaning - "In the woods, X happened." The question is, do they have also a more particular meaning. a and b have a meaning that does not imply that I was in the woods; in a I could be anywhere, and in b, I could be in a tower adjoining the woods. c does not have a meaning clearly distinct from the general locative, but

"I left the pins in the drawer" does not imply that I was in the drawer.

When adverbial participles are preposed, they are controlled by the subject, unless a topicalized effect is intended. In the following, the effect of a topicalizing fronting is to be discounted:

121. Leaving the party, I saw Sam.

Standing on {my / *his} head, I imagined Pete.

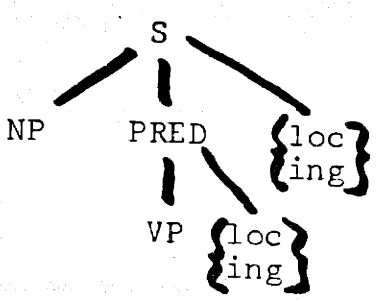
This property of fronting extends also to the prepositional phrases we considered, if we substitute "general locative" for subject-controlled, and "particular locative" for object controlled:

122. ?In the drawer, I left the pins.

?In the woods, John saw Mary.

We are going to assign the object controlled cases of equi and the particular locatives to the predicate phrase, and the subject controlled cases of equi and the general locatives to the node S:

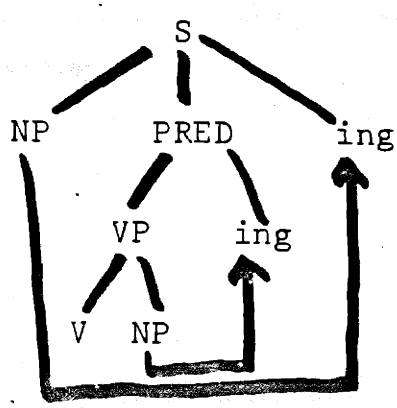
123.



This will give us the preposing facts - preposing occurs more easily from an S position than from a Pred position. It will also give us the differential of selection by the verb - post-verbal constituents in S are not governed by the thematic relations theme, source, and goal, but members of Pred are.

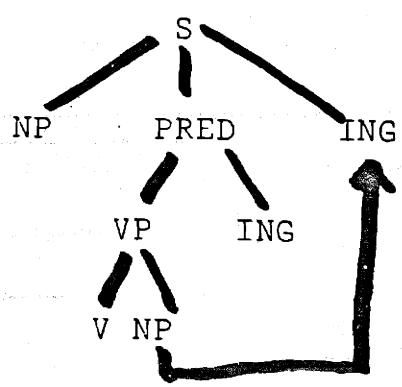
The two kinds of control we have discussed are illustrated in the following:

124.



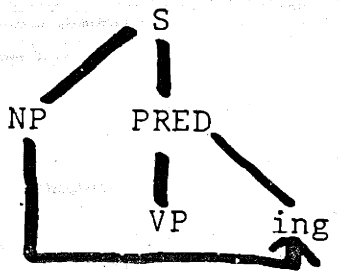
The following control will be excluded by a principle discussed in the next section:

125.



But this leaves open the possibility of control of the following kind:

126.



But we may need this kind of control to distinguish the following two cases:

127. a. John left Mary's house, thinking that the party was over.

b. John left Mary's house thinking that the party was over.

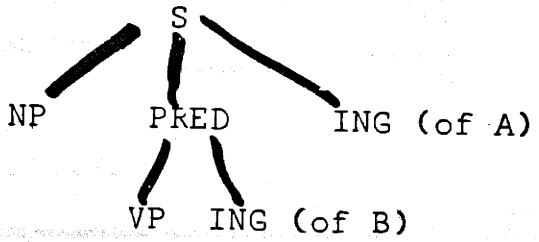
In (a), with comma intonation, John's thinking that the party was over precedes his departure, and can be interpreted as a cause of his departure. In the second case, his thoughts accompany his departure. This may account for the difference in meaning between the following, which describe different scenes.

128. a. Finishing his beer, John left the house.

b. John left the house finishing his beer

We may wish to assign the a cases to the S node, since this is the case which preposes, and the b cases to the predicate phrase.

129.



There are some problems with this. First, the a reading, which we are presuming to be marked by a comma, is not good unless preposed:

130. ?John left the room, finishing his beer.

However, it is good if the participle is perfective:

131. John left the room, having finished his beer.

Furthermore, the b reading should only be allowed when the subject is theme, if what we said about objects having to be theme to control the predicate participle is true. But we seem to find the same ambiguity when the subject is not theme, as with the verb wash:

132. John washed the dishes thinking about Mary.

John washed the dishes, realizing that Mary would never wash them.

It is unclear to me whether these ambiguities of subject controlled participles should be handled by the same means that

we used to separate object from subject control. Perhaps the Pred participles have two functions, one subject oriented and one object oriented, like the two kinds of manner adverbs we discussed earlier.

2.2. Consider briefly the rule of conjunct movement. It can apply to both the subject and the object:

133. John washed the dishes {with the pots / with Sam}

John and Sam washed the dishes.

John washed the dishes and the pots.

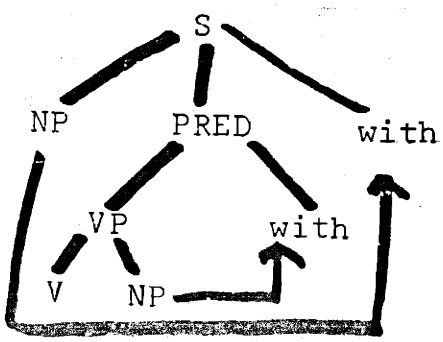
As in the previous cases, the instance of with that is related to the subject is more preposable than the instance that is related to the object:

134. With Sam, John washed the dishes.

?With the pots, John washed the dishes.

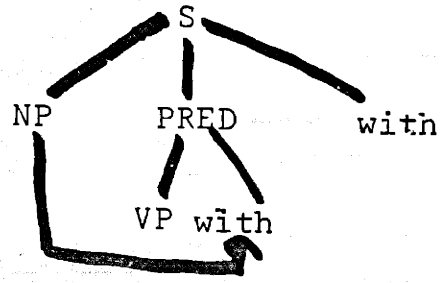
By parity of reasoning with the above cases, we want to assign one to Pred and the other to S.

135.



Again, we might expect to find conjunct movement performing the following operation:

136.



These cases would be cases in which the choice of predicate governed the operation of the rule. Such cases might be the cases where the deep subject must be plural:

137. John { argued *(with Mary). / made love *(with Mary). }

Other cases of "symmetric" predicates to which conjunct movement applies do involve a phrase in the Pred, the <u>to</u> phrase:

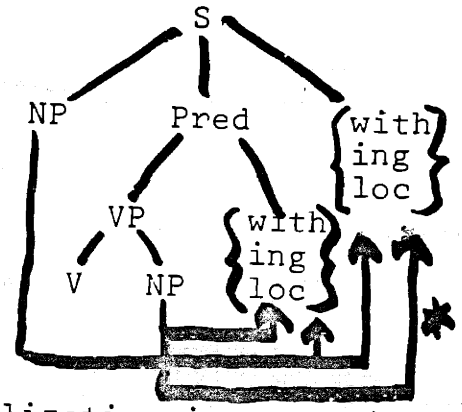
138. This is { equal to / similar to / different from / symmetrical with } that.

A verb phrase like "wash the dishes" requires no plural subject and requires no conjunct movement. If this differential in government by the choice of predicate is reflected in a difference domination, Pred versus S, we should expect a difference in preposability between the two cases:

139. With Mary, John is { washing the dishes. / ?making love / ?arguing }

The essential claim we want to make is that no rule can relate an object to a postverbal constituent outside of the predicate, whereas rules can relate the subject to post-verbal consitutents both inside and outside of the Predicate phrase:

140.



The rule of pronominalization is an obvious counterexample to this claim, as it is to most claims about rules:

141. John kicked the dog although <u>it</u> didn't do anything.

The rule is meant to apply to conjunct movement, locative interpretation, and participle adverbial equi.

We will look at this claim in connection with a set of clauses called purpose clauses by Faraci, who has done foundation work on them. FN11

We will find two rules of equi at work, one of which is governed by thematic relations, and the other of which is more generally governed. What our claim about objects will amount to in this case is that objects cannot serve as controller of the "more generally governed" cases of equi applying into these clauses.

We have on the one hand, "in order to" clauses in which the object cannot be a controller of equi:

142. Sally gave Fred a book in order to { please him. / *read / *give to Mary / *relax himself with }

On the other hand, there are infinitive clauses (minus "in order to") where the object is controller:

143. John gave Fred a book to { read. / give to Mary / relax himself with. }

For the space of this discussion we will refer to the former as <u>in order to</u> (iot) clauses and the latter as infinitive clauses. This could be confusing, since there are infinitive clauses where the phrase <u>in order</u> is optional:

144. I gave Mary the book { to frighten her. / in order to frighten her. }

Thus what we mean by iot clause is a clause where in order to is possible, and by infinitive clause, where it is impossible. The infinitive clause is governed by the choice of predicate, much in the same way as the predicate for phrases to be discussed in the next section. It is possible only with verbs of a certain semantic class, which we will call the "creative-possessional" class, and leave to the reader to define in detail:

145. John { built / bought / *destroyed } a house to live in.

John sold Bill a house to live in.

*John sold a house to live in.

We know that these are infinitive, and not purpose clauses because "in order to" is impossible, and because object of the clause has been deleted, which is impossible with in order to clauses:

146. *John built a house in order to live in
John built a house in order to live in it.

Because of this government by the choice of predicate, we will assign these infinitive clauses to the predicate. This assignment predicts poor preposability; in the following preposing yields a catalogue-reading type of topicalization:

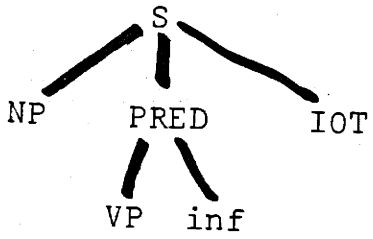
147. To live in, Bob built a house.

The iot clauses, on the other hand, are not restricted to the creative-possessional classes:

148. John destroyed a house {in order to prove something. / *to live in}

All that is required for an iot clause is that purposefulness be attributable to the subject, and this requirement is made for both iot and infinitive clauses. Thus iot clauses are not as tightly governed by the choice of predicate as infinitive clauses. In order to reflect this difference in our theory, we will assign the infinitive clause to the predicate, and the in order to clause to the node S:

149.



This assignment predicts greater preposability for the iot phrase than for the infinitive phrase, and this seems to be borne out:

150. In order to read, John turned on the light.
*To read, John bought a book.

In the first, read is intransitive; in the second, if we understand read as trasitive, then the object of the clause has been deleted, so the clause cannot be an iot clause. This preposing differential cannot be attributed to the presence of the phrase "in order to" in the following; because the predicate destroy is incompatible with an infinitive clause and because the object of the clause has not been deleted, we know that the preposed clause is an iot clause even though the actual phrase in order to is not present. But preposing in this case is good:

151. To scare Mary, John destroyed her home.

We will now take a closer look at the rules of equi involved in these cases. First, the rule which deletes the object of the infinitive clause cannot be the subject:

152. *John bought Bill a book to appreciate.
(Bill appreciates John).

This is so even when the subject is theme:

153. *John went to the doctor to examine.
(The doctor examines John).

Subjects can delete objects across the copula and across tough predicates:

154. This book is {for Bill to read. / easy to read.}

So if these cases of deletion are to be collapsed with the object deletion in infinitives, something further must be said. However, only the object of the matrix can delete the object of the clauses we are considering.

There are cases where the derived subject controls the deletion of the object:

155. A sample was sent to him to examine.
The gun was bought by Fred to kill Bill with.

It must be that deletion is allowed under these circumstances simply by virtue of the fact that the derived subject was the deep object; i.e., deletion is ordered before passive. We will talk more about this ordering in the next chapter. To summarize, this rule is governed by the verb (only the theme of certain verbs is eligible for controller), the controller must be the object, and the rule must apply before passive.

Sometimes the deep object of the matrix verb can control the deletion of the subject of the infinitive clause:

156. I bought it to hold my books.

We know that this is an infinitive, and not a purpose clause, because the wrong predicate makes it bad, and the insertion of in order to makes it bad:

157. *I destroyed it to hold my books.

*I destroyed it in order to hold my books.

Thus this rule, which uses the deep object as the controller, can delete either the subject of the object of infinitive clauses.

Deletion of the subject of an iot clause is normally controlled by the subject - it can never be the object:

158. The judge dropped the case against Sam in order to indict Bill.

*John gave Mary a gun in order to kill herself.

*Mary was given a gun in order to kill herself.

??The gun was stolen by John in order to kill himself.

The reason that the object cannot control the deletion is because of the principle preventing rules from relating objects to post-verbal constituents outside of the predicate phrase, a restriction formulated independently of these cases. The behavior of this rule with respect to passive is different from the infinitive deletion rule - neither the derived subject nor the derived by-

phrase NP is eligible as controller. This last restriction does not apply to infinitive clauses:

159. The gun was bought by John to kill himself with.

Here the by phrase contains the controller of the deleted subject of the infinitive. This sentence indicates that the rule which deletes the subject of infinitive clauses is not the same rule as the one that deletes the subject of in order to clauses. The iot deletion rule, but not the infinitive deletion rule, falls into the class of rules governed by Lyle Jenkins' by-phrase constraint.[FN12]

The iot deletion rule need not have any controller at all.

160. John was shot in order to prove that the Mafia was afraid of noone.

*John was shot in order to indict Bill.

Indict requires a human subject; prove, on the other hand can have an abstract subject - here, "John's being shot." Iot clauses need not have any deletion at all:

161. John shot Mary in order for Bill to have a chance to escape.

Infinitive clauses, on the other hand, must have something deleted from them.

162. *John bought a hat for Mary to wear it.

The only requirement that is made for an in order to clause to be good is that the subject be agentive if it is the controller of deletion:

163. *John resembled his father in order to win the prize.

*John inherited 1,000,000 dollars in order to pay for the boat.

These predicates do not allow the subject to be interpreted agentively. This restriction prevents the derived subject (by passive) from controlling deletion, which we have already seen to be the case. However, there are environments where the derived subject can be controller of the deletion:

164. John must be examined in order to get life insurance.

We find concommitantly that the subjects of nonagentive verbs can serve as controller when must is present:

165. John must resemble his father in order to win a prize.

John must inherit 1,000,000 dollars in order to pay for the boat.

It is trivial to show that there are no thematic restrictions whatever on deletion in these cases:

166. Theme: John must accidentally fall out of his chair in order to win.

Goal: John must inherit 1,000 dollars in order to win.

Source: John must lose 3,000 dollars in order to get the money from me.

Agent: John must murder Mary in order to get the money.

Thus we have the following hierarchy of control by the choice of predicate on deletion. For infinitive clauses, the controller must be theme. For the in order to phrases, the controller must be agentive, but can be any other thematic relation. And for in order to phrases in the environment of must, the controller is not restricted in any way. Corresponding to this hierarchy of government, we have the fact that infinitive deletion must precede passive, in order to deletion does not precede or follow passive but is incompatible with it, and deletion in the environment of must follows passive. Thus we have two rules.

2.3. In this section we will consider two kinds of for NP phrases. We will claim that the difference between the two kinds is determined by a difference in domination. One is the daughter of S, the other of the Pred. We will also consider a counter-example to the phrasal ordering of theory, and conclude with some remarks about the syntax of to and for.

167 a. John baked some bread for Mary.

b. John made a table for Mary.

c. John obtained a table for Mary.

d. John gave a book to John for Mary.

That these for-phrases are not constituents of the object can be seen from the pronominization of the object and from their (very weak) preposability and from the insertion of adverbs:

168 a. John baked it for Mary.

b. For Mary, John baked some bread.

c. John baked some bread yesterday for Mary.

Notice that the verbs in must be interpreted as agentive. A nonagentive verb is not so good here:

169 *John inherited a house for Mary.

This is a requirement of the for phrase. Furthermore, the verb must be of the motional-possessional class (c and d) or of the creative class (a and b). The verb in169is of the motional-possessional type, but fails because it is not agentive.

170. *John destroyed a table for Mary.

*John ransacked a room for Mary.

The sentences in 170 are bad on the interpretation "the room/table is for Mary". The verbs in 170 are not creative or possessional, although they are agentive. That the intuitve categories creative and possessional are too crude for a description of these phrases can be seen in

171. John made a bed for Mary.
John cleaned out a room for Mary.

where the verbs are not clearly of either type. But these categories are good enough for our purposes.

These facts - the very weak preposability of these phrases, their (always optional) occurence with a broad semantic class of verbs, as well as the semantic relation between the for phrase and the object (the X is for Y) leads us to assign these phrases to the Pred phrase. We will return to the optionality of the for phrase later.

Another for phrase has an agentivity requirement, but makes no further thematic requirements like the possessional creative requirement above:

172. John left the room for Mary.
John opened the window for me.
John destroyed the book for me.
John resigned for me.

The sentences in170are good on this "favor" reading. Sometimes the agentivity is not so manifest:

173 Jesus died for us.

If Jesus is not construed as at least a "permissive" agent in this case, then outside agentivity or intention in connection with Jesus' death is implied. This for phrase is more preposable than the for phrase above:

174 a. For me John found a book. (On reading "the book is for me".)

b. For me John destroyed the library.

In these very preposable for phrases there is no semantic entailment (as in a , for example), "the library is for me". Rather, there is an entailment "S or Pred is for me, as a favor".

175. { John's { leaving the room / opening of the window / destruction of the library / resignation } / Jesus' death } was (a favor) for me.

These for phrases, then, make less stringent semantic (thematic) requirements on the verb, are more preposable, and have a different (broader) semantic relationship with the rest of the clause (NP is for X versus S is for X) than the for phrases considered earlier. For this reason we assign these for phrases to

S domination.

Of these two <u>for</u> phrases, only the ones we have assigned to the predicate participate in dative movement:

176. a. John baked Mary some bread.
b. John made Mary a table.
c. John gave Mary a book.
d. *John left me the room.
* " opened me a window.
* " destroyed me a book.

Note that not all <u>for</u> datives we have assigned to Pred do move; 167c, for instance.

Whether or not <u>for</u> and <u>to</u> dative movement are the same rule is not material here. By making <u>for</u> dative a Pred rule, we can prevent 176 d-f, since the <u>for</u> phrase in those sentences is outside of the predicate.

What we are saying here is that the end variables of dative movement cannot be analyzed as including any material outside the Predicate:

177. [S... [Pred... V NP for NP... Pred] .. for NP]

X V NP for NP Y
* X V NP for NP Y

Both for phrases can appear:"John bought Mary a book for me," one inside and one outside Pred. Thus assigning a rule to a domain can be interpreted as a condition on the analysis of variables and constituents in a structural description. This interpretation, plus the analyses of the two for's given, plus the assignment of for dative movement to the Pred, gives us 176 a-f straight away.

178 a. John ran to the mark.

b. " " for " ".

For and to alternative in spatial motion verbs. 178 a. implies that at some point "John was at the mark" whereas b. does not. But the ("open") proposition "John be at the mark" is a part of the semantics for both a. and b. In b. it is "modalized" by intention or some such, and is therefore not entailed. Thus, both to and for are markers of goals, if we make inclusion in a semantic statement like "John be at mark" the definition of goalhood. Do we want to say that to and for in 178mark different thematic rleations, in Gruber's sense?[FN13] That depends on how we want to construe his ideas (and Fillmore's).[FN14] One claim of both these writers is that one verb cannot have two NP's with the same thematic (or case) relation. Since there are sentences with both to and for phrases:

179 John gave a book to Mary for Bill

if we maintain this claim we cannot say that to and for represent the same thematic relation. But there may be a way to weaken the claim. Suppose G stands for goal, and I for a Modal operator of intention. Then to marks G, and for marks I(G). Now, is G the only thematic relation here, or are G and I(G) distinct thematic relations.

The Pred for phrase is probably the same for phrase that appears in for - to purpose clauses:

180.a. John bought Mary a car { to drive . }
b. { *to have . }

The sentence "John bought Mary a car" means or entails that John intends for Mary to "have" the car. This entailment is also a part of a., as we can see from

181. *John bought a derby for Mary to { see him wear . / admire on him . / want . }

In all the sentences in 181 the content of the for - to VP imply that Mary does not get the derby, and this is counter to the implication that "Mary have the derby". This means that the full semantics of 180a. includes some possessional statement, exactly as would be given to a bare for phrase with no infinitive. This is why 180b. is awkward - it is redundant.

With non-possessional matrix verbs, we do not always find this "possessional" entailment:

182 John left a skate in the garage for Bob to trip over.

There are also cases of _for_ which have a VP character. This includes _for_ in verbs like _look for_ and the for in _for - to_ complements to verbs like _want_. There are _for_'s that alternate with the object marker:

183 a. John grabbed {for the bag / the bag}
b.
c. *

d. John ran for the mark.
e. John ran to the mark.

The _for_ in a., which alternates with objects allows passive, but not the one in d.

184 The bag was grabbed for by everyone.
*The mark was run for by everyone.

This is not a fact about _run_, which in the right circumstances (when it has an object) can passivize.

185 The dog was run {down the street. / out of town.}

It has to do with the fact that the for phrases in 183 a. is standing in for a subcategorized for object (a member of VP) but in 183 e. for a to-phrase (a member of Pred). Implicit in this explanation is the idea that VP delimits the PP's that allow pseudopassive. This is not quite true.

2.4. Fillmore[FN15] has argued that for dative movement applies after passive, whereas to dative applies before passive. This would be a counterexample to the theory here, since passive is clearly an S rule, and we are claiming the for dative movement is a Pred rule, and should therefore apply before passive. Fillmore's theory is based on the observation that derived objects that are the result of for dative movement do not passivize:

186 Mary built a house for John.
Mary built John a house.
*John was built a house.

But to dative-moved derived objects do passivize:

187 John was given a book.

This is straightforward evidence for the ordering of two rules. However, there are restrictions on the movement of for dative-moved objects which cannot be accounted for in this way:

188 *It was John who Mary built a house. (Clefting)
Who does John think that Bill built a house. (Q formation
John, Mary built a house. (Topicalization)
John is tough to give a present. (Tough movement)
Who did Mary build a house?

In most of these, the offending movement occurs on a cycle after the cycle in which <u>for</u> dative movement should have applied. Thus, if <u>for</u> dative movement is a cyclic transformation no ordering of transformations will solve this problem. This leads me to believe that the problem presented by Fillmore's observation should not be solved by ordering, because any solution to 188 , which cannot involve ordering will also handle 186 as well. Notice that the sentences in 188 are all good if you add <u>for</u> to the end of each. This fact, plus the facts of 186 & 188 , indicate that <u>for</u> dative-moved objects are "frozen" to further movement or deletion rules, whether these further rules are on the same cycle as for dative movement or subsequent cycles. This seems to be true only for American speakers.

However, a freezing feature inserted by <u>for</u> dative movement cannot be right. There are similar facts about <u>to</u> dative movements:

189. *John, Bill gave a book.

*It was John that Bill gave a book.

*John is tough to give a book.

*Who does John think that Bill gave a book?

*Who did Mary give a book?

Likewise, all of these are good if to is added to the end. Thus, to dative moved objects are frozen to further movement. But to dative moved objects can undergo passive, whereas for dative moved objects cannot. This is why a freezing feature is inappropriate - if to dative precedes passive, as it must, and inserts a freezing feature, why can the objects derived by to dative passivize. Also, it is not the case that the to dative moved object is frozen only to rules outside the cycle of dative movement, since the last sentence above has movement on the same cycle, if WH movement is a cyclic rule, by question formation, and the first one with topicalization. It is simply unfrozen to passive.

Two theories occur to me, which are compatible with each other. The first is, for dative is frozen to all movement, but to dative only to movement by a rule with an essential variable. Second, it occured to me that the passivity differential of to and for dative moved objects might be due to the fact that for phrases are always optional, whereas to phrases are obligatory. Thus, we sense elipsis in a., but not in b:

190 a. *John gave the money.

b. John built the house.

Jill Carrier has pointed out some interesting evidence that this is so - there are cases of optional to phrases that undergo dative movement, but the resulting structures yield awkward passives:

191 Mary sang a song. (No ellipsis)

Mary sang a song to the children.

Mary sang the children a song.

*The children were sung a song. (No passive)

*John was thrown a pillow.

John threw the ball. (No ellipsis)

If this is correct, then the focus of the movement prohibition shifts from the actual prepositions involved onto subcategorization facts about verbs. It may then be pssible to collapse the two rules to dative and for dative. This prohibition is a strange one - the information about the obligatoriness of a node is not represented in deep structure, even before dative movement. From a "performance" perspective, one might say, "It is easier to unravel a deformed (transformed) construction when you know beforehand that such and such an item has to be there, then when you know merely that it might be there." If the two rules can be collapsed, which is made possible by ordering them both before

passive and shifting the passivity differential elsewhere, then this is motivation for the cross-classification implicit in G and I(G) for to and for, respectively. This indicates collapsing the two rules, which is called for anyway by the near identity of the structural descriptions, and the identity of the structural changes.

Footnotes to Chapter 2

1. Jackendoff 1972, chapter 7.
2. Carrier and Knecht, 1973.
3. Bresnan 1972.
4. Gruber 1965.
5. Bowers 1973.
6. Oehrle (forthcoming).
7. Gruber 1965.
8. Anderson 1970.
9. Williams 1973.
10. Emonds 1971.
11. Faraci (forthcoming).
12. Jenkins 1972.
13. Gruber 1965.
14. Fillmore 1968.
15. Fillmore 1965.

CHAPTER 3

In this chapter we will look at rules of domain S. They will be seen to divide into two groups - one controlled by aspects of the semantics of the main verb, and the other not. The main aspect of semantic control is via the system of thematic relations proposed by Gruber[FN 1] and elaborated on by Jackendoff[FN 2]. Thematic relations are specified on deep structure, but are not congruent to deep structure. Rules governed by these relations we will call thematic rules, and rules not governed by them nonthematic. The claim examined in this chapter is that all thematic S rules precede all nonthematic S rules.

1.0. THEMATIC RULES. When the prefix re is attached to the verb, the sentence in which it occurs carries a presupposition that something or other occured in the past. What the terms of this presupposition are depends on the verb, as the following shows:

1. a. John rewashed the dishes → someone washed them previously.

   b. John reopened the box → someone reopened it previously.

   c. John remmomrized the answer → John memorized it before.

   d. John reread the answer → someone read it before.

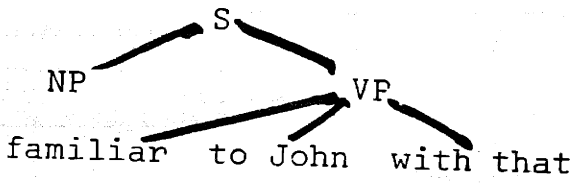
NP_1 is moved into subject position by Bower's rule of object preposing. I believe that this treatment is one that Bowers would be sympathetic to.

Recalling Anderson's paradigms, we notice that there are pairs like:

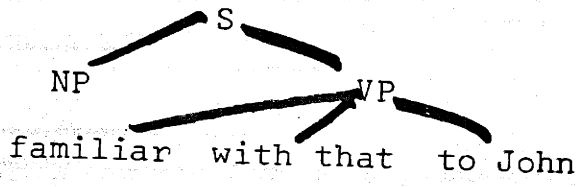
4. a. John is familiar with that.
   b. That is familiar to John.

These could be normalized to the pairs noted in Chapter 2 if we could represent them:

5. a.



b.



A rule would move one or the other of the NP's into the indirect object position, and the same rule of object preposing needed for the memorize cases could be used.

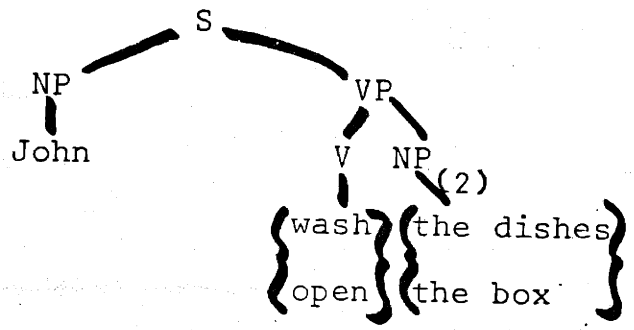
With verbs that imply a resulting intrinsic connection between the subject and the object (memorize - John knows the answer) resulting from the activity denoted by the verb, the subject of the presupposition induced by re is the subject of the verb; when no such connection obtains (wash, for example, implies no relation resulting between the washer and the washed) then the subject of the presupposition is left open (someone).

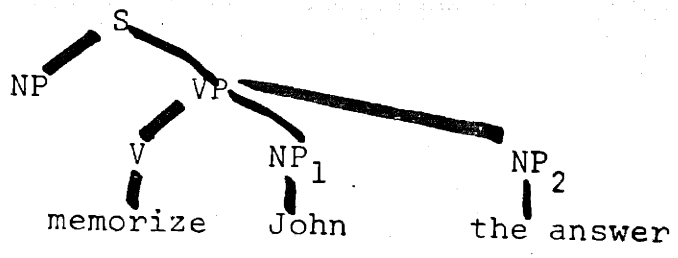
Bowers[FN 3] has argued that English has a base rule:

2. $VP \rightarrow V \quad NP_1 \quad NP_2$

for the double object construction; and that NP_1 is reserved for items that are "inherently capable of verbing". Using this apparatus, we could distinguish these two cases as follows:

3.

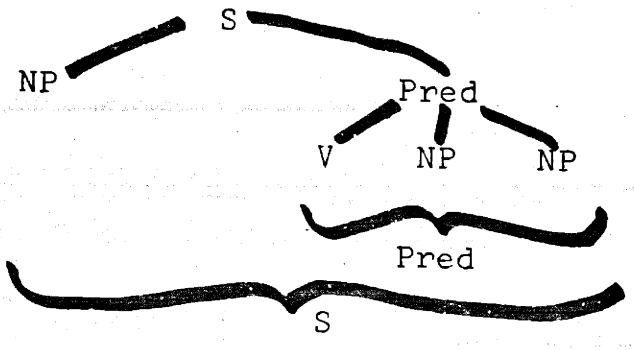




Such an approach essentially tries to uniquely represent the semantic role of an NP with respect to its verb in deep structure. It also tries to represent various relationships between NP's in deep structure, such as the "give John a cold" examples of Bowers and Oehrle mentioned in Chapter 2. The main problem that the deep structures above attempt to overcome is that the deep subject position, if it is taken to be the same as the surface subject of a simple active declarative sentence, is neutral with respect to these roles and relationships.

The relevance of this to our ordering hypothesis is this - certain rules, particularly ones that deal with thematic relations, which otherwise might be analyzed as S rules in our theory, could be analyzed as Pred rules that apply before indirect object preposing:

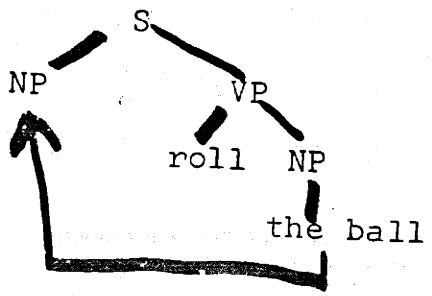
6.



Bowers proposes the following deep structures for transitive and intransitive pairs, such as <u>roll</u>:

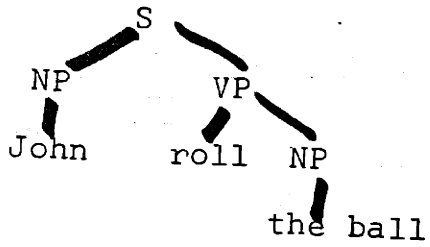
7. a.

intransitive



b.

transitive



The arrow in 7. a. represents the rule of object preposing which gives the surface structure "the ball rolls". In these pairs, the VP's are identical, capturing the fact that the relationship between ball and roll is the same in each case. Many arguments having to do with semantic nonequivalence of related pairs have been given[FN 4].

The following is a syntactic argument. The particle away meaning "over and over again" does not allow a direct object:

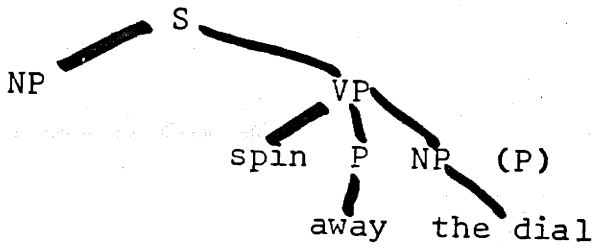
8. a. *John was hitting away Joe.
   b. *John was hitting Joe away.
   c. John was hitting away at Joe.

We can say that away is subject to a filter *__NP. However, we get away with intransitives, such as spin:

9. The dial was spinning away

which, in Bowers' theory would have the deep structure:

10.



This structure violates the filter on away, however. Neither can the filter be a surface filter, since:

11. *Who was John hitting away

is bad, clearly because at an earlier point in the derivation there was an object. In fact, this filter must be ordered before passive, since:

12. *John was hit away by Joe

is bad for the same reason as before. So, in Bowers' theory, we are left with a filter crucially ordered between passive and

deep structure.

If we give up Bowers' deep structures, and most of his theory, this filter becomes a local, deep structure, lexical insertion filter.

However, we are also left with no means of stating the various thematic and relational connections directly in terms of base rules. Each verb will have to specify which grammatical positions have which thematic relations. This is the null hypothesis, the one Bowers was trying to avoid.

What this means with respect to our theory is that many rules discussed in Chapter 2 are not Pred rules, but S rules. For example, Oehrle has noted the following pair:

13. a. Mary gave Einstein an idea.
    b. Mary gave an idea to Einstein.

In a. Mary needn't understand the idea, but Einstein must. In b., the reverse is the case. In a., the rule establishing the relationship of "understanding" applies between the double objects; in b., it applies between the subject and the object. Thus this rule of Oehrle (detailed in his thesis, forthcoming) is an S rule. The phenomena (rule or not) represented by

Anderson's paradigms is an S phenomena. With the prefix re-, we find that the matrix subject is specified as the subject of the presupposition not only when it is "inherently capable of verbing", but also when it has the thematic status of theme, goal, or source:

14. a. John reclimbed the mountain. ⇒ John climbed it before.
    b. John reaquired the painting. ⇒ John had the painting before.
    c. John resold the couch. ⇒ John bought the couch before.

All of these relationships, as discussed in Chapter 2, have a thematic base, involving the three thematic relations of theme, goal, and source.

Under Bowers' theory, which says that thematic relations and deep structure positions are isomorphic, these rules would all be predicate rules This would predict that they were all ordered before passive and case marking, for instance. In the null hypothesis theory, we lose this ordering prediction - all of them are S rules. The purpose of the thematic-nonthematic distinction is meant to salvage the ordering predictions that are lost. But something else is gained thereby - passive is a thematically governed rule, as Jackendoff showed, but it could not under any circumstances by analyzed as a Pred rule. (We will briefly review Jackendoff's evidence in this chapter).

And yet we want to order it before rules like number agreement and there insertion. The thematic-nonthematic distinction does this, but a theory based on Bowers' deep structures does not.

1.2. EQUI AND COMPLEMENTS. Jackendoff[FN 5] has argued that the rule of equi which deletes the subject of complement clauses is based on thematic relations. He argues that the minimal distance principle is inappropriate, because it is tied to deep structure positions and configurations:

> "We will show....that probably a better principle for selecting the NP controller can be based on the thematic relations introduced in Chapter 2. Thematic relations are not altered by transformations since they are properties of the semantic readings which correlate to the deep structure grammatical relations. Hence, the selection of controller does not depend on whether or not transformations have distorted the main clause..." [FN6]

The reason that Jackendoff wants to free the control problem from the position in the clause of the controller is because he wants to order equi with pronominalization, at the end of the cycle, after other transformations have relocated the possible antecedents.

In this theory, any rule whatever can be governed by thematic relations. Thematic relations, as we have emphasized, are stated in the deep structure frames which each verb can appear in.

For instance, the object of give is a theme. In a sentence such as "The book was given to John" we know that the book is theme because we know that the deep structure object of give is theme and because we know that passive has applied. As a first step towards limiting the thematic information a rule can reference, we might require that no reference be made to the thematic status of an item that is in a derived position. This may not be maintainable in all cases, but it is a move in the right direction. In particular, it would force equi to be quite early - before passive in fact.

If this were so, the equi would not be collapsed with pronominalization, which takes place after every kind of ordering possible takes place. Several things are gained by this collapse: pronouns and equied subjects behave identically with respect to backwards pronominalization with indefinite antecedents, for instance. Other common factors are discussed by Jackendoff[FN 7] and Postal[FN 8]. Perhaps these generalizations could be attributed to anaphora rules in general, and thus not require collapsing and reordering.

In the following we will look at some shreds of evidence that bear on the ordering of complement equi.

The by phrase constraint, formulated by Lyle Jenkins[FN 9], says,

among other things, that an NP in a by phrase cannot serve as an antecedent for equi. This constraint applies not only to complement equi, but to adverbial equi as well:

15. a. *It is desired by John to leave.
    b. *Mary was seen by John while shaving himself.
    c. *John was promised by Bill to leave.
    d. *John was killed by Mary in order to please herself.

The only exception to this is the rule of subject equi for infinitival clauses of purpose:

16. The gun was bought by John to shoot himself with.

Faraci has argued that equi does not occur in these cases[FN 10]. Jenkins does not argue from this constraint that equi is ordered after passive, but it is only after passive that the legitemacy of various antecedents can be established. Then the NP in the by phrase cannot be analyzed by the SD of the rule. This constraint does not generalize to other PP's:

17. a. It was clever of John to leave.
    b. I yelled at Bill to leave.

This argument shows that equi possibilities are reduced in the

derived structure. The following shows that equi possibilities are also increased in certain ways.

The by phrase constraint prevents promise, under most circumstances, from having both passive and equi apply in the same sentence:

18. a. I promised Joe to leave.
    b. I promised Joe the tree.
    c. *Joe was promised by me to leave.
    d. Joe was promised the tree.

But with the right complement, equi is possible in promise passives using the subject NP as controller:

19: Bill was promised to be allowed to kill himself.

This equi possibility is not available unless passive has applied:

20: a. I promised Bill { *to be allowed to kill himself. }
    b. { *to get a prize. }

Promise differs from beg on this last point; in the passive, beg allows only the passivized subject to control equi, as predicted by the by phrase constraint, but in the active either NP can

control equi:

21. a. John was begged by Sam { to leave. / *to be allowed to leave. }
    b.
    c. John begged Bill { to leave. / to be allowed to leave. }
    d.

Thus, passive both increases and reduces equi possibilities, indicating that equi applies to derived structure. This is the only evidence I know of that equi applies to derived structure.

Jackendoff has argued that equi must apply to surface structure. Talk about allows ambiguous equi:

22. a. I talked to John about killing { myself. / himself. }
    b.

unless the about phrase precedes the to phrase.

23. a. I talked about killing { myself / *himself } to John.
    b.

Apparently, the antecedent must be to the left of the deletion site. But this condition is met in the following ungrammatical sentence:

24. *Who did you talk about killing himself to?

Who cannot be disqualified for thematic reasons or because if there is a closer NP; the earlier sentences show that these facts are irrelevant. Who is disqualified because in its pre WH movement position it is to the right of the deletion site. This shows the relevance of pre-surface structure to equi.

The force of this proposal is vitiated by Wasow's trace proposal[FN 11] for WH movement - the trace left behind by WH movement will not be in a proper environment for equi, and so the transitivity condition is violated. The trace proposal allows exactly the relevant non-surface information to be encoded in the surface - the source of the WH word. These same facts apply to topicalization:

25. a. John, I talked to about killing himself.
    b. *John, I talked about killing himself to.

I believe that the trace proposal could be motivated for topicalization as it was for WH movement. These sentences are also ruled out by Postal's crossover constraint.

These arguments about the ordering of equi are extremely inconclusive. We can tentatively propose that equi, and all other rules where the choice of the main verb determines the possibilities, are ordered before rules in which this choice is irrelevant.

The case with promise shows that equi is this kind of rule. However, the empirical consequences of this proposal are not overwhelming. What is predicted here is, eg., that equi into complements applies before case marking, one being a thematic rule and the other nonthematic.

1.3. PASSIVE. We have already discussed the downward ordering of passive with respect to dative movement and particle movement.

1.3.1. Perlmutter has pointed out to me the following pair:

26. a. They marked $[_{NP}$ it $]_{NP}$ up $[_{NP}$ 10 cents $]_{NP}$

b. * $[_{NP}$ it $]_{NP}$ $[_{NP}$ 10 cents $]_{NP}$ up.

c. It was marked up 10 cents.

d. *It was marked 10 cents up.

These sentences bear on the ordering we have predicted, of Passive Particle: d meets the structural description of particle movement, but only after passive, which is too late.

It does not seem to me to be the case in general that particles do not move over measure NP's:

27. a. John put 20 pounds on on his vacation.
b. John moved {10 feet over. / over ten feet}

This case constitutes an argument for crucial ordering of rules. Also, that particle movement is not a postcyclic rule, which given the framework sketched in Chapter 1, it could not be. In the latter half of this chapter we will look at the ordering of passive and nonthematic S rules case by case.

1.3.2. Government. Passive is a thematic S rule - that is, it is governed by the choice of verb and this government can be described in terms of thematic relations. The rule of equi for Faraci's infinitival purpose clauses is governed by the relations theme and goal; in the case of complement equi, it is governed by a thematic relation specified by the verb - in the case of promise, for instance, it is the source. Passive, in Jackendoff's treatment, is more complexly governed. Rather than being governed by specific thematic relations, passive is governed by a relation between the two NP's involved in the rule:

28. X NP_1 V NP_2

NP_1 cannot be lower on the thematic hierarchy than NP_2 where the thematic hierarchy is:

29. Agent
Source goal, locative
Theme

Jackendoff argues that this constraint explains the behaviour of psych predicates and measure predicates wrt passive:

30. a. *John is struck by Bill as pompous.
    b. *Five pounds is weighted by the bag.

and then obligatorily agentive interpretation of some passives.

31. &John was touching the bookcase.
    &The bookcase was being touched by John.

A further difference between thematic control of equi and of passive, is that with passive various factors can override the thematic hierarchy constraint, but not, to my knowledge, the government of equi.

1.3.4. Agency and the THC. The notion of agentivity used by Jackendoff refers crucially to conscious volition. A weaker relation (i.e., met by more NP's) would be actor, which would not distinguish between the two senses of:

32. &John was touching the bookcase.

However, this weaker relation would not explain why this sentence has only one sense in the passive. Thus, the notion of agentivity that involves volition is crucial to the explanatory force of

the THC as Jackendoff has formulated it, not only for passive, but for reflexive as well.

There are, however, reasons for treating agentivity apart from the other thematic relations. For one, an agent can be also any one of the other thematic relations:

33:	John got rid of his car.	Agent and source.
	John journeyed to Rio.	Agent and theme.
	John reacquired it.	Agent and goal.

No thematic relation other than agentivity can combine with another thematic relation. Second, the thematic relations other than agentivity can be determined by deep structure, and on the basis of the main predicate; but agentivity is determined by a number of factors - the progressive aspect is associated with agentivity, as is well known. Most verbs have optionally agentive subjects (again, there is no parallel with the other thematic relations); and passivized subjects can receive an agentive interpretation, as we shall see, which is not available in the active, indicating that agentivity is at least in part a property of derived structure.

Many adverbs attribute agentivity to the subject of a sentence: willingly, reluctantly, deliberately, cleverly. These adverbs

do not behave uniformly with respect to passive. Deliberately, for instance, modifies the deep subject whether or not passive has taken place:

34. a. John was deliberately killed by Bill.
    b. Bill deliberately killed John.

Willingly and reluctantly, in the passive, can refer to the deep subject or to the derived subject.

35. A. &John was { willingly taken to the police station. }
    b. & { reluctantly taken to the police station. }

The active, however, is not ambiguous:

36. They willingly took John to the police station.

Hence, the attribution of "willingness" must be made on the basis of derived structure. If "willingness" is a part of the notion "agentive" then agentivity must be determined in part by derived structure.

One further note about agentivity and THC - Jackendoff notes that a sentence like:

37. John surprised Bill.

is agentively ambiguous, whereas its passive is not. He would claim that this was because unless the subject was agentive, the THC would be violated in the passive. However, when the subject is inanimate, and thus ineligible for an agentive interpretation, passive can still apply:

38: John was surprised by Bill's agility.

Jackendoff's THC makes only the right prediction when the deep subject is human. Perhaps the correct generalization is that an NP in the by-phrase is preferedly interpreted agentively, if it is human. This rule would apply after passive, again indicating that agentivity is tied to derived structure.

1.3.5. The By-Phrase. The four prepositions, to, from, with, and about, denoting, as we have mentioned, the three relations, goal, theme, and source, can be freely reordered:

39. a. John talked to Bill about John.
b. John talked about John to Bill.
c. John talked with Bill about John.
d. John talked about John with Bill.
e. John walked to Bill's with Mary.
f. John walked with Mary to Bill's.
g. John walked from Bill's with Mary.
h. John walked with Mary from Bill's.

And I detect no difference in meaning between the pairs beyond that which can be accounted for by focus and presupposition.

But none of these freely reorders with by-NP, the PP associated, in the way that we have described, with agentivity:

40. a. John was taken to Rome by Bill.
b. ?John was taken by Bill to Rome.
c. John was told about Bill by Sam.
d. ?John was told by Sam about Bill.
e. The story was discussed with Pete by Bill.
f. ?The story was discussed by Bill with Pete.

Thus the by-phrase appears most naturally to the right of the PP's associated with the other thematic relations. A more sophisticated theory than the one that we have developed here, but one along the same lines, might try to connect this with the fact that agentivity is in part a property of derived structure.

1.3.6. Agentivity and By-ing and In Order to Phrases. There are three ways that passive and an adverb implying volition or intention can interact. Active and passive can by synonymous, when the attribution is of the deep subject, as with deliberately:

41. a. John deliverately killed Same.
b. Sam was deliberately killed by John.

The attribution can be to either the deep or derived subject, as with willingly; or the adverb can be barred from occuring with passive, as with the sentential use of cleverly:

42. a. John cleverly left the doop open.

b. *The door was cleverly left open.

In a wide class of cases, the by-ing and in order to clauses are not allowed in passive sentences.

43. a. *The door was opened by lifting the lever.

b. *The door was opened in order to escape.

Some speakers find the following grammatical:

44. The door was opened in order to be examined.

Ross (pers. comm.) among them. Later, we will look at some further cases where passive is allowed with in order to clauses. The cases we are interested in here are where the deep subject is controller. If in these cases it is the derived subject which is selected as the antecedent for equi, then these sentences can be ruled out on the grounds that antecedency in these cases carries with it agentivity requirements that cannot be met by the subject. Deletion is optional in in order to clauses, and as this theory predicts, passive is possible - the derived subject is not an antecedent:

45. John was arrested in order for Mary to have a chance to escape.

Also, in order to may be subjectless, but not controlled by the matrix subject; again, passive is fine:

46. John was arrested in order to give Mary a chance to escape.

This is possible only when the verb in the in order to clause does not require an animate subject:

47. a. *The window was opened in order to escape.
b. John was killed in order to { scare the mafia. / teach Bill a lesson. / illustrate the dangers of crime. / remind the police of the presence of the mafia. }
c.
d.
e.

In each case where the passive is acceptible, we can say:

48. a. John's death { scared the mafia. / taught Bill a lesson. / illustrated the dangers of crime. / reminded the police of the presence of the mafia. }
b.
c.
d.

In each case, the subject of the in order to clause is the matrix sentence itself, or some part of it. Thus, it is strictly the

subject control of the purpose clause subject that is incompatible with passive; not the presence of the purpose clause itself. The potential ambiguity afforded by the possibility to use the matrix subject or the matrix clause itself as controller for equi is realized in the following, whose ambiguity was noted by Faraci.

49. John went to New York in order to annoy Mary.

In one case, the subject-controlled case, John will not annoy Mary until he gets to New York; in the other case, his going to New York itself is what annoys her.

1.3.5. In summary, we have argued that passive is sensitive to the selection of the predicate of a sentence - via the government by thematic relations according to Jackendoff. We have argued that it is ordered among rules assigning agentive interpretations to the subject. Passive is among the rules we have termed thematic - thus, it is predicted to occur before nonthematic rules such as there-insertion and number agreement.

1.4. Reflexive. Jackendoff demonstrates that the thematic hierarchy is also relevant to reflexivization:

> The antecedent of a reflexive cannot be higher than the reflexive pronoun on the thematic hierarchy[FN 12].

The fact that the same hierarchy is used as was used for passive is evidence for its reality. It explains the absence of reflexives with passive, and with psych predicates, and covers most of the cases of clause mate reflexives. Since the government of this rule, in terms of the main verb, is roughly the same as for passive, we will tentatively propose that it is a thematic S rule. Jackendoff, on whose treatment of reflexive we will depend heavily, argues that reflexifization is partially collapsable with pronominalization, and therefore should be ordered with it. Pronominalization is an $\overline{S}$ rule. However, we are trying to maintain that no $\overline{S}$ rule can refer to thematic information, or to semantic information based on the selection of the main verb in general, and in fact that only a subset of S rules can do so. It must be noted that if reflexivization is made a subrule of the $\overline{S}$ rule of pronominalization, it is not a counterexample to our phrasal ordering hypothesis. But it would be more interesting with respect to the ordering hypothesis set forth in this chapter to establish the S (as opposed to $\overline{S}$) character of reflexivization. We will therefore examine Jackendoff's treatment with this aim in view.

With clause mate reflexives, there is nothing to distinguish the two analyses. We must look at the more exotic cases of reflexivization, then - backwards and intercyclic reflexives.

Forward reflixivization applies into lower clauses only when there was no possible antecedent on the previous cycle:

> John promised that there would be a story about himself in the paper.

In this environment, a pronoun is also possible:

> John promised that there would be a story about him in the paper.

Jackendoff's rule does not predict this, because he alpha-collapses the rule of reflexivization and the rule guaranteeing the non-coreference of clausemate pronouns and possible antecedents:

50. α reflexive $\rightarrow$ α coreferential

(In John saw him, John and him are coreferential, because him is reflexive. Since reflexivization is obligatory, there is no way to allow John and him to be coreferential in the sentence above. This fact indicates that it is mistaken to collapse the rule of reflexivization and the rule of pronoun (non) coreference, since the environments are different.

Another feature of interclausal reflexives is that the frames in which an interclausally reflexive pronoun can appear are very

highly restricted:

51. a. John insisted that there was { *a letter to himself
b. *a book by himself
c. *a letter from himself
d. a picture of himself
e. a story about himself }
in Mary's mailbox.

There is an intermediate case of reflexive, between clausemate and interclausal - where the reflexive is separated from its antecedent by an NP node; we will call this case intercyclic:

52. John saw a picture of himself.

This case is not restricted like the interclausal cases:

53. a. John saw a { letter to himself
b. book by himself
c. letter from himself
d. picture of himself } in Mary's mailbox.

Also, here collapsing the noncoreference rule for pronouns with reflexives works, as in the clausemate cases.

54. John saw a picture of him. (John ≠ coref. him).

It will be the case of interclausal reflexives that concern our thesis. The claim is that only reflexives that occur in clauses

that bear a thematic relation to the same verb in which the antecedent of the reflexive occurs will be counted as good. As a standard of comparison, the following meets this requirement:

55. a. John insisted that there weren't any pictures of himself in Mary's mailbox.

One result of this claim is that interclausal reflexivization will be prohibited in the case of $\overline{S}$ clauses, none of which have a thematic relation to the verb.

First, result clauses, which bear no thematic relation to the verb, and which are extraposed to $\overline{S}$ domination as we will argue, cannot contain these reflexives:

56. a. John is admired by so many people that there are pictures of *himself in the hall of fame.

b. { him }

This will account for the lack of ambiguity in the following:

57. John is so mad that there won't be any pictures of himself in the paper.

Here, the presence of the reflexive prevents the <u>that</u> clause

from being interpreted as a result clause; it is interpreted as a complement to mad, and the so is read as an intensifier. If him is substituted for himself, then the that clause can be read as a result clause.

In the next section of this chapter, we will argue that there are because clauses that serve as the complement of some predicates; mad is such a predicate. In the following, we see that reflexivization sorts out these two kinds of predicates:

58. a. John {*is dead / *was arrested / is mad} because there was a picture of himself in the post office.
    b.
    c.

Reflexivization is not allowed in since, if, when, or although clauses:

59. a. *John is made {since / although} there are pictures of himself in the gallery.
    b.
    c. *John will be arrested {when / if} there are pictures of himself in the post office.
    d.

Interclausal reflexivization takes place backwards or forwards into subject clauses:

60. a. That there were pictures of himself in the post office upset John.

    b. It upset John that there were pictures of himself in the post office.

We can automatically exclude the gaps in reflexivization noted above by making reflexivization an S rule, since all verb complements occur within S, while <u>although</u> and <u>since</u> clauses are dominated by $\bar{S}$.

This, however, would make collapsing reflexivization and pronominalization impossible, since pronominalization is clearly an $\bar{S}$ rule. We will now examine Jackendoff's arguments for collapsing the rules.

First, Jackendoff argues that the notion "does not both precede and command" is relevant to both rules, and should be factored out. However, there is a difference in the interpretation of command for the two rules: in the case of reflexivization, the node NP is relevant; for pronominalization, only the node S:

61. a. That he had left too early upset John.
    b. *An unflattering story about him upset John.
    c. An unflattering story about himself upset John.

Thus, this generalization is far less striking than supposed. The generalization that does exist can be attributed to anaphora rules in general.

Pronominalization possibilities are increased by WH movement,

as Jackendoff and Postal have pointed out:

62. Who that Mary knew did she visit?

This argues for ordering pronominalization after WH movement. The only argument that reflexivization is so ordered that Jackendoff gives is based on the difference in grammaticality of the following:

63. a. ?Who did you talk about himself to?
b. *I talked about himself to John.

These judgments are Jackendoff's. The difference in grammaticality is not striking; in fact, if reflexivization did follow WH movement, it would be difficult to explain why there was any difference at all.

As with equi, the other arguments for collapsing the two rules, such as the inapplicability of the rules when applying backwards with indefinite antecedents:

64. a. *That there were pictures of him in the postoffice upset someone.
b. *That there were pictures of himself in the postoffice upset someone.

can be attributed to anaphora rules in general, and so need not entail collapsing the rules.

1.5. Thematic negation. The some-any alternation that takes place in the complement of negative verbs is a thematic S rule:

65. a. John {denied / *said} that anybody had been there.
b.

It is an S rule, because it applies in the subject complement of verbs like surprise:

66. a. It is {surprising / doubtful} that anyone is here.
b.

It is a thematic rule for the following reasons: it does not apply in S's that are not part of the complement structure of the verb:

67. a. *It is surprising that Bill is here because anybody left.

b. *John denied it to prove anything.

Furthermore, it does not apply to every item that bears a thematic relation to the verb:

68. a. John disclaimed any interest in the proceedings.
b. John denied Bill any help.
c. *John denied anyone help.
d. *John denied the money to anyone.

That is, the verb specifies which items in its complement structure are eligible for this rule.

Sentential negation, which we will discuss in the next chapter, does not behave in this way. It can apply in clauses that are not thematically related to the verb:

69. John did not leave because anybody insulted him.

and is indifferent to what the relation an item bears to the verb is:

70. Nobody denied anything to anybody.

Thus we have a paradigm comparison of a thematic S rule which we can call deny-negation, and an $\bar{S}$ rule. Our theory predicts that there should be an ordering difference. If extraposition is a nonthematic S rule, as we will argue shortly, then the predicted order for the three rules in question is:

71. Deny negation < extraposition < negation

This predicts that extraposition should not be able to alter the possibilities of the deny negation rule, but it should make a difference for the $\overline{S}$ negation rule:

72. a. It was surprising that anybody was there to help him.

b. That anybody was there to help him was surprising.

c. That there was anybody in the for was denied.

d. It was denied that there was anybody at the fort.

e. *That anyone was there to help isn't widely known.

f. It isn't widely known that anybody was there to help.

g. *That anybody would be interested didn't occur to me.

h. It didn't occur to Mary that anybody would be interested.

1.6. Tough Movement. Tough movement is an S rule, because it involves the subject position. It preceds WH movement, as the following shows:

73. Who is easy to please.

If the rule of tough is a deletion rule and not a movement rule, then this is not evidence for ordering. But if the rule is movement, and if it followed WH movement, then it would be difficult to explain how 73 is derived from:

74. Who is it easy to please.

Tough movement also preceds q float, as the following shows:

75. They are both easy to please.

Q float is a nonthematic rule, and tough movement preceds it. This would be predicted if tough movement were a thematic rule.

Tough movement is not governed by thematic relations. Any relation is appropriate for the deleted NP:

76. a. John is a bummer { to be arrested by. } Ag
b. { to hit. } Th
c. { to try to get money from. } S
d. { to give money to. } G
e. The knife is easy to cut with. Ins.

And if the tough subject has a thematic role it is the same in all cases.

On the other hand, it is clear that "choice of predicate" governs the rule. Only a subset of NP's and adjectives allow it. The list of predicates which allow TM is not closed - a bummer was recently added. The list which governs insertion is closed, on the other hand; if anything it is dwindling.

2.0. NONTHEMATIC RULES. In the following section, we will discuss a number of rules which have domain S, but which are not governed by the semantics of the verb, or by the choice of verb. We will call them nothematic S rules. Nearly all of them apply to the subject position. We will show in each case that the rule is ordered after thematic rules, usually passive, and before $\overline{S}$ rules, usually WH movement and subject aux inversion.

2.1 Extraposition. The extraposition we are concerned with here is the extraposition of subject complements and related rules. This rule is to be contrasted with result clause extraposition and comparative extraposition, both of which we will show to be $\overline{S}$ phenomena.

Emonds has argued (see Higgins[FN13] for criticism), that there is no rule of extraposition, but rather the converse rule of it-replacement, or intraposition. For our purposes, it is not important to take a position on this question. We will use the

standard treatment of the rule, assuming that our remarks would apply to any formulation.

Since extraposition involves the subject position, we know that it is at least an S rule. Thus, it may be ordered before or after passive, and in most formulations of the two rules, either order is logically possible. However, if the rule is not thematically governed, as passive is, we would like to order it after passive.

There does exist a government of these rules; the broadest sense of "choice of predicate" does characterize the difference between:

77. a. That John was here is { irrelevant. / *true. }
    b.

However, we feel that the distribution of S's can be described in terms of factivity assignment associated with the subject position, and in terms of the tensed/tenseless distinction of complements. The factivity associated with the derived surface subject was first noted by Kiparsky and Kiparsky[FN14] who noted that:

78. a. That the tapes were missing was reported by the White House.
    b. It was reported by the White House that the tapes were missing.

in 78. a., the subject position is more likely to be interpreted as a true fact than it is in b. If there is a surface rule of this kind, it is likely that it is responsible for the different presuppositions of the following:

79. a. A fire was reported to the police by the pranksters.

b. The pranksters reported a fire to the police.

In a. one assumes that there was a fire, but in b. this is not as necessary. If such a rule exists, independent of the rule of extraposition, we may be able to explain some cases of extraposition that we would otherwise have to call lexically governed.

Tensed factives always seem to allow S subject:

80. a. That Bill was here is { obvious. / known. / clear / has been proved. }

e. That Bill was here would have been { obvious / known, / clear, / proved, } if...

Tensed non-factives, on the other hand, are worse:

81. a.?That Bill was here is { true. / widely thought. / doubtful. / probable. }

We may attribute this difference between tensed factives and non-factives to the factivity of the derived subject position.

With tenseless complements, the situation is different. With nonfactives, extraposition is highly preferred.

82. a. ??For Mary to be there is important.
    b. ??For John to have gotten there by now is {possible. / impossible.}
    c. ??

This applies not only to infinitives, but also the tenseless <u>that</u> clauses:

83. a. ??That Mary be there is {important. / required. / urgent.}
    b. ??
    c. ??

should be compared with a tensed factive:

84. a. That Bill was there is important.
    b.??That Bill be there is important.

There is another class of tenseless clauses whose factivity depends on their environment; in a tensed non-modal clause, they are intepreted as factive:

85. a. It { upset } Mary for John to be there.
b. { scared }
c. { was a shame }

But in a modal or generic environment, they are interpreted as non factives:

86. a. It would { upset } Mary for John to be there.
b. { scare }
c. { be a shame }

The modal would allows these infinitives to remain in intraposition without awkwardness:

87. a. *For John to be there { upset } Mary.
b. * { scared }
c. For John to be there would { upset } Mary.
d. { scare }

Note that the interpretation of indefinite NP's are affected by a modal in much the same way:

88. a. A fire upset Mary. (Implies there was a fire)
b. A fire would have upset Mary. (Does not imply there was a fire).

The presence of a modal is not sufficient to legitimize a non-factive in subject position:

89. a. It would be important for you to be there if John were going to be there.

b. *For you to be there would be important if John were going to be there.

Here, the subject is nonfactive independent of the modal; only when the factivity of the complement is suspended by the modal can it appear in subject position.

It may be, then, that it is possible to describe the distribution of subjectS's in terms of factivity presuppositions and the presence or absence of tense in the complement. The verb has a role in this description, but only insofar as it specifies its complement as factive or tensed. The parallel behavior of indefinite NP's:

90. a. {a fire / b. for Bill to leave} {*was / would be} nice.

indicates that this is not a fact about extraposition itself, but rather about the derived subject position, and it manifests itself in sentences where extraposition plays no role:

91. a. A fire was reported to the police.

b. Someone reported a fire to the police.

The importance of such an approach to our theory is that it frees extraposition of lexical government and qualifies it as an nonthematic S rule.

The interaction of WH movement and extraposition is predicted if extraposition is an S rule and WH movement is an $\overline{S}$ rule. Clauses that are extraposed by complement extraposition can be extracted from:

92. Who is it obvious that Bill saw?

This argument applies to intraposition as well. It is only possible if WH movement can apply after extraposition; before extraposition, the sentential subject constraint would block extraction. Extraction from result clauses, which we argue later are extraposed at the $\overline{S}$ level, are not eligible for extraction.

93. *Who were so many people dying that they had to call on?

A further piece of evidence that result clause extraposition is an entirely different process from it-S extraposition, and that it is a later one by our theory, is that an extraposed result

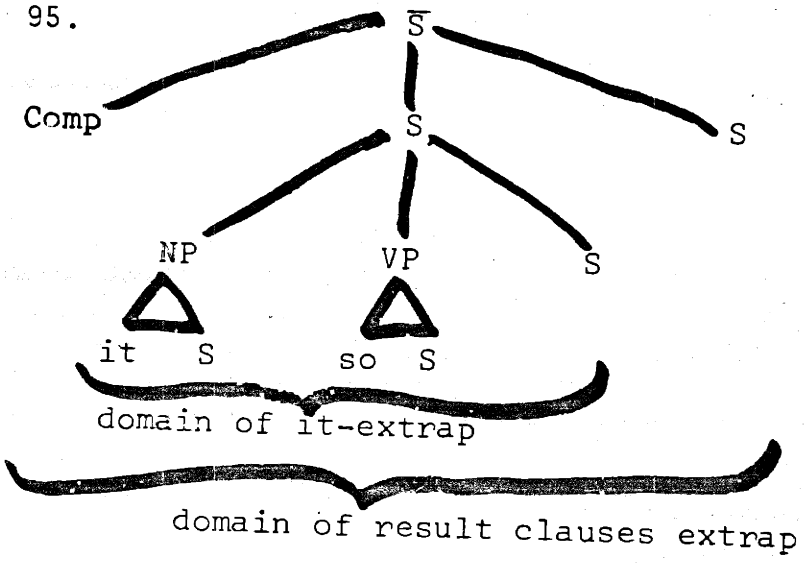
clause always follows an extraposed complement clause:

94. a. It was so obvious that John was sick that I'm calling a doctor.

b. *It was so obvious that I'm calling a doctor that John is sick.

Given two rules of extraposition, both of which mention an "end of clause" boundary in their SD, we have no way of predicting the output of sentences where both rules are involved. However, by assigning these rules to different domains, say S and $\overline{S}$, respectively, and by interpreting each rule as extraposing to the "end of its domain", rather than to the end of its clause, we predict the order of clauses:

95.



Another feature which distinguishes it-extraposed S's from result clauses is the relative order wrt because clauses. Result

clauses can appear after because clauses, but it-S clauses cannot:

96. a. So many people left because they were bored that we are closing the movie.

b. *It is necessary because everyone was bored that we close the movie.

c. It is necessary that we close the show because everyone was bored.

If clauses also must follow extraposed complements, but not result clauses:

97. a. It will be important to Bill that Mary didn't show up if he doesn't see her for a few days.

b. It will be important to Bill if he doesn't see Mary for a few days that she didn't show up.

These examples show that result clause extraposition throws its clause further to the right than it-S extraposition, and that this difference cannot be expressed in the structural description. But it is predicted if we assign the rules to different domains.

Extraposed complements are environments for intercyclic reflexivization, but result clauses are not:

98. a. It bothered John that there were pictures of himself in the post office.

99. b. *John hit so many home runs that there is a picture of himself in the hall of fame.

We will suggest later that no daughter of $\bar{S}$ is eligible for this rule, but that daughters of S are.

Thus I consider it established that S is an upper bound on complement extraposition. It is difficult to set a lower bound on the position of the extraposed complement in derived structure for two reasons. First, although we have the following paradigm:

100. a. It was proved {by / to} John that Bill was there.

b.

c. *It was proved that Bill was there {to John / by John}

d. *

this does not necessarily mean that the clause has to be extraposed over by and to PP's; such a distribution could be given by late reordering rules, according to a surface filter on post-verbal constituents as described by Ross[FN 15]. And the one case where this filter would be neutralized is ruled out by Ross' same side filter[FN 16], which prohibits extraposition for bisentential verbs.

However, as we will see, although extraposed clauses cannot be preposed, they share a number of properties with clauses which do prepose, arguing that they are daughters of S.

2.2 IF AND EXTRAPOSITION. Happy is a factive predicate.

101. I am happy that Bill is here.

The following sentence is ambiguous:

102. &I would be happy if Bill was here.

On one reading, the "logical" reading, my happiness is not necessarily related to my knowledge that Bill is here; it is simply a consequence of his presence. The other sense of this sentence is, "I would be happy that Bill was here, if he were." The adjectives glad and dead are not ambiguous this way:

103. a. I would be happy if Bill was here.
b. I am happy that Bill is here.
c. I am happy. I am a happy person.

104. a. I would be dead if Bill was here.
b. *I am dead that Bill is here.
c. I am dead. I am a dead person.

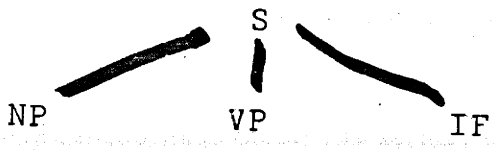
105. a. I would be glad if Bill was here.
b. I am glad that Bill is here.
c. *I am glad. I am a glad person.

The predicate glad requires a complement. One cannot initiate a discourse by saying "I am glad" or ask out of the blue (say

to a stranger) "are you glad?" The predicate happy, on the other hand, can be so used. The fact that you can say "I am glad" is no more of a counterexample to this claim than "I know" is a counterexample to the claim that know must have a complement. This complement-taking property of glad may explain why it cannot appear in prenominal position.

Where does the if come from? It is not sufficient to say that it is the ordinary sentential if, as below:

106.



for this will not distinguish the three cases of happy, which may or may not have a complement, dead, which does not have a complement, and glad, which must have a complement since if clauses appear with all three. Also, we would leave the following unaccounted for:

107. a. It would be a shame if Bob left.
b. *It would be unlikely if Bob left.
c. It is shameful that Bob left.
d. It is unlikely that Bob left.
e. I would be sorry if John left.
f. *I would be convinced if Bob left.

108. g. I am convinced that Bob left.

h. I am sorry that Bob left.

We see from the above that *if*, in the required sense, is permitted in the modal environment just in case a *that* is allowed in a nonmodal environment, and the *that* is factive. This restriction cannot be stated as a general condition on *if* adverbial clauses. These sentences indicate that *if* clauses are connected with the complement structure of verbs often.

But a rule:

109 that ⟶ if / MODAL

designed to state this connection, misses several points as well. First, it claims that the *if* clause is part of the VP, like the *that* clause from which it was derived. But the *if* clauses in these cases are preposable; other *if* clauses that belong to the VP are not preposable:

110. a. If John leaves I will be glad.

b. *If John left, I wonder.

c. I wonder if John left.

The *if* clause also cannot appear as subject:

111. *If John left would be a shame.

which would derive from:

113. That John left would be a shame.

Third, there are restrictions that apply to this *if* clause that do not apply to *that* clauses; and vice versa:

114. a. John will be glad if there is anybody to talk to.
b. *John is glad that there is anybody to talk to.
c. *John will be glad that there is anybody to talk to if he is fired.

Any can appear inside *if* clauses, but not *that* clauses.

115. a. I will be glad if there is no more fighting.
*will be
b. I am glad that there will be no more fighting.
c. I will be glad that there will be no more fighting if the terrorists are punished.

Here, *will* is allowed inside the *that* clause, but not the *if* clause.

A third argument has to do with sequence and identity of tense. Besides *if* in these constructions, we find *when*:

116. I'll be glad when Bill dies.

Adverbial when requires identity of tense:

117. a. *I'll be dead when John came.

b. *I was dead when John comes.

However, the that and when clauses that appear inside the VP require only sequence of tense:

118. a. I wonder when Bill was here.

b. *I wondered when Bill is here.

But the when clause of the glad sentences requires identity of tense.

119. a. *I will be glad when Bill was here.
am

b. *I was glad when Bill is here.

Thus we may conclude that the when clauses in question are not members of the verb phrase, and are generated where other when clauses are, under S.

Some instances of because clauses work the same way:

120. a. John is mad because the mail is late.
b. concerned

When these clauses are complement fulfilling, they cannot follow an intonation break:

121. a. *John is concerned, because the mail is late.

b. *John isn't concerned, because the mail is late.

The second sentence cannot be paraphrased,"John is not concerned that the mail is late."

Reflexivization can apply into <u>because</u> clauses only when they are complement fulfilling:

122. a. John is angry because there are pictures of himself in the post office

b. *John isn't worried, because there are pictures of himself in the post office.

c. *John was arrested, because there are pictures of himself in the post office.

Another difference between complement and non-complements is extraction:

123. a. Who will John be { angry / *arrested / *dead } if he doesn't impress.

b.

c.

With respect to both intercyclic reflexivization and extraction, complement <u>if</u> clauses pattern like extraposed complements, and non-complement fulfilling <u>if</u> and <u>because</u> clauses pattern like extraposed result clauses and $\overline{S}$ clauses - the former allow both processes, but the latter allow neither:

124. a. *John is happy since there is a picture of himself in the post office.

b. *John is happy although there is a picture of himself in the post office.

c. *Who is John happy since he saw?

d. *Who is John happy although he saw?

For this reason, we may want to identify the position to which complement extraposition moves a clause to, and the position where these because and if clauses are generated - as daughters of S. Although and since are daughters of $\overline{S}$.

Another feature which complement if clauses and extraposed clauses have in common is relative order with respect to extraposed result clauses:

125. a. It will upset so many people if you do that that John will quit.

b. ??It will upset so many people that John will quit if you do that.

If clauses in general need not always follow extraposed result clauses; we will look at this interaction in the next section.

If we identify the intonation break with the difference between S and $\overline{S}$, and the ability to appear before or after a result clause with the difference between S and $\overline{S}$, then the rule which connects these if and because clauses to the complement structure

of verbs is an S rule, whether or not it is the same rule as it-extraposition.

2.3. CASE MARKING. Case marking in English provides some rather speculative arguments for the theory. The basic argument is the description of the distribution of he and him in English. The position taken here is that him is underlying, and that he is a derived form. Alternative theories might take he as basic and him as derived, or both as derived from something abstract. There is evidence for the first theory.

He occurs basically only as the subject of tensed clauses. This is easily stated as a rule that applies after passive:

126. NP → NOM / { T, subj } (NCM)

In addition to tensed clauses, the nominative appears as subject (again, derived subject) of subjunctive clauses:

127. I demand that he be examined.

A over A will prevent:

128. *Some of they are sick.

This rule, in conjunction with the genitive rule:

129. NP → POSS/ ___ $\overline{N}$ (GCM)

covers all the cases of pronouns except the accusative ones. Accusative marking thus takes on the character of an elsewhere rule.

Accusative shows up after verbs, after prepositions, as the subject of accusative ing constructions:

130. Him being there bothers me.

as the subject of infinitives (if there is no object-raising) and in isolation:

131 Q: Who did it?

A: Him.
*He.
He did.

An accusative marking rule would thus have a very bizarre environment:

132. NP → ACC/P___
V___
#___# (isolation)
___VPing

Such an environment has a random character which the work "elsewhere" in conjunction with the two rules mentioned above for nominative and genetive describes perfectly.

If there is a rule of nominative marking, as given in 126, then it is a candidate for a rule of domain S. Further, since it is not verb governed, it must be ordered after passive, as the theory predicts, and the facts seem to require this:

133. *Bill was arrested by he.

(Though see Seigel (MIT dissertation forthcoming) for an alternative analysis.)

How is NCM ordered wrt $\overline{S}$ transformations? The rule in 126 will cover both subject-aux-inverted and non-subject-aux-inverted subjects just if it is ordered before SAI. A more complex environment is needed otherwise:

134. $/\left\{\begin{matrix}\_\_\_\_T \\ T\_\_\_\_\end{matrix}\right\}$

There is some problem with this decision as far as the forms who/whom go, however:

135. a. Who did he give it to

b. Whom did he see

c. To whom did you give it

d. *To who did you give it.

This paradigm indicates that in the complementizer position, whom may undergo rule 126, after subject aux inversion. It should be noted that the he in a. must also undergo this rule. Actually, the following indicates that who may actually be neutral wrt case:

136. a. John wants to see who?

b. John gave the book to who?

If this is so, then nominative marking isn't needed for these cases. Also who is found in tenseless infinitives:

137. I don't know who to talk to.

a further indication that who is not a nominative.

What remains a mystery, if we reject who as specifically nominative, is:

138. a. *To who did you give a book?

b. You gave a book to who?

Perhaps echo questions are formed by moving a WH work back to where it started out from, but with new case marking.

Fiengo has argued that epistemic modals are tenseless.[FN17] If this is so, then NCM must be amended to include them in its environment. However, I think that this is just one instance where making such an assumption leads to a loss of generality. Another is the rule of sequence of tenses. May and might, for instance, in their epistemic uses, behave like present and past:

139. a. John thinks there {may / might} be a riot.
b.

c. *John thought there {may / might} be a riot.
d.

140 a. John thought that Sally {is / *was} there.
b.

In some cases then it seems that epistemic modals are to be considered tensed, and case marking, like sequence of tense, is one of these cases.

And finally, I would like to speculate that some blocking arrangement between NCM and the coordinate structure constraint would make a more natural than b :

141. a. John and him went there.
b. ?John and he went there.

A is simply a nonapplication of NCR; under an accusative marking rule theory, a new environment would have to be added:

142. NP → ACC/Conj___

In NP's, there is a rule which moves NP's after they have been case marked

143. John's boat ⟶ that boat of John's.

on the condition that the determiner contain something other than the. There is no analogous rule for NCM.

2.4. SUBJECT VERB AGREEMENT. Subject verb agreement, like case marking, occurs only in the environment of tense. SVA has no reflex in subjunctive clauses. SVA also has no reflex in modal clauses, but root and epistemic are the same in this regard:

144. Verb ⟶ plural / $\begin{bmatrix} NP \\ pl \end{bmatrix}$ ____

And again, this rule should precede SAI, because otherwise an additional environment is needed:

145. / ____ $\begin{bmatrix} NP \\ pl \end{bmatrix}$

It might be thought that such an environment is needed anyway for the following cases:

146. a. A couple of spies are in my room.

b. There $\begin{Bmatrix} is \\ are \end{Bmatrix}$ a couple of spies in my room.

c.

d. *A couple of spies is in my chamber.

Since d cannot be the source of b , by SVA preceeding there insertion, then how can c be derived, except by an (optional?) rule of agreement with the environment we are trying to exclude. There are a couple of wrinkles with this paradigm. First, the b sentence is not good if the there-displaced NP head has plural marking on it:

147. a. There {are / is} two spies in my room.
b.??

Nor is the singular acceptable if the verb involved is not copular be:

148. a.??There was a couple of spies sawing a log.

b.??There was a couple of spies arrested at the convention.

Perhaps 146 a - d can be attributed to a lack of ordering between there insertion and number agreement. a is good by either ordering, and d bad by either ordering. c is generated by one ordering, SVA preceeding there insertion, and b by the order there insertion preceeding SVA. In b we get is agreeing with there, implying that there is singular. Another way to say this is that singular is the unmarked state of affairs. It would be mistaken to regard there as plural.

149. *There are a spy in my room.

Why should these two rules be unfixed wrt ordering? Perhaps because they are the same kind of rule - they are both nonthematic S rules. Our theory predicts that they will be ordered very near each other, but the theory does not predict any order between them. In fact, the crucial examples that would establish ordering, 146 b and c , establish both orderings (= no ordering).

As far as other ordering goes, the same arguments that applied to case marking apply to SVA, to order it after passive, before SAI. Similar arguments extend also to verb person agreement.

2.5. Q-FLOAT. Q-float is a rule introduced by Postal (class lectures, MIT), is an optional cyclic rule exchanging a quantifier associated with a derived subject and the first auxilliary or modal:

150. NP Q(M) (AUX) → NP (M) (AUX) Q

This rule must follow passive. First, it works off of passive subjects:

151 . They were all killed.

But more importantly, it cannot apply before passive. A quantifier can float over the be of the progressive:

152. They were all leaving.

Thus, if this rule preceded passive, the following derivation would be possible:

153. a. They all were mocking me.
b. They were all mocking me.
c. *I was being all mocked by them.

But this situation does not arise if Q-Float is ordered after passive. This ordering is predicted by its being a nonthematic S rule.

Q Float interacts with few rules. Its interaction with Neg interpretation indicates that it must precede it:

154. a. Now they both won't go.
b. Now they won't both go.

In the first sentence, each individual has decided not to go; in the second, they have collectively decided that only one should go. The first sentence is good only with stress on both, but this is also true of both (and all, every, each) when it is in

prenominal position,

155. *Both of the men won't go

and precedes negation.

If Q-float followed the interpretation of negation, this difference in meaning would be neutralized. The ordering Q-float precedes negation is predicted if Q-float is an S rule and Neg interpretation is an $\overline{S}$ rule. If Neg interpretation is an absolute surface structure rule, this will be irrelevant.

Q-float can also be shown to precede SAI. The following sentence, to which SAI has applied, meets the structural description of Q-float:

156. Have they all been running?

But application of the rule gives the ungrammatical:

157. *Have they been all running.

We want to say that Y is ungrammatical for the same reason that Z is:

158. They have been all running.

because Q-float can hop over only one auxiliary exclusive of modal. But the appropriate time to say this is before SAI.

Thus this rule is ordered:

159 SAI > Q-float > passive

and ordering predicted if SAI is an $\overline{S}$ rule and passive is a thematic S rule. Q-float is an S rule, as can be seen from our formulation, and it is completely ungoverned by the main verb, and thus a nonthematic S rule.

2.6 THERE INSERTION.

160 . NP (M) (have) be X ⟶ There (M) (have) be NP X

This rule applies to passive output:

161. a. A boy was being scalded.
b. There was a boy being scalded.

Although <u>there</u> insertion may move an NP over the <u>be</u> of the progressive or the <u>be</u> of passive, it cannot move it over both:

162. a. There was a boy standing there.
b. There was a boy being scalded.
c. *There was being a boy scalded.

From the last sentence we can get an argument that there-insertion must precede SAI - following derivation illustrates the problem if there-insertion follows, or can follow, SAI:

163. a. Someone was scalding a boy.
b. A boy was being scalded.
c. Was a boy being scalded?
d. *Was there being a boy scalded?

This is not due to any restriction on moving an NP over the form being:

164. There being no water is what bothers me.

There insertion can move an NP over any of the forms of be - passive, copular, or progressive, but it can move only over one of them per sentence. This restriction must be stated before SAI if "There was being a boy scalded" is to be ruled out by it.

The ordering passive precedes X precedes SAI is characteristic of the rules we have been calling nonthematic S rules, among which, we would like to claim, is there-insertion. This ordering just argued for is also given by making SAI post-cyclic, and Q-float cyclic.

Also, the two processes of WH movement and Neg interpretation are best stated on the output of there-insertion:

165. a. No one was there.
b. There wasn't anyone there.
c. There weren't many people there.
d. Many people couldn't have been there.
e. There couldn't have been many people there.

f. There was who at the party?
g. Who was there at the party?
h. Who was at the party?
i. John knows who there was at the party.

Since WH and Neg interpretation are $\overline{S}$ processes, this ordering is predicted. Also, the lack of ordering between there-insertion and number agreement mentioned earlier indicates that these are two rules of the same type, nonthematic S rules, and that they are ordered in the vicinity of each other.

It is clear that there-insertion is an S rule, but is it non-thematic? We have been less than fully precise about this term. There-insertion is sensitive to "the main verb" in the case of copular sentences, at least - it operates across copular be, but not copular become, for instance. We feel that this is not due to semantic conditioning of the rule.

This predicts that it operates across copular, passive, and progressive be indifferently, despite their different semantic functions. It is rather due to the fact that to be is mentioned

in the structural description of the rule.

There insertion operates across a few verbs besides be:

166. a. There arose an insurrection.
b. There came a savior.
c. There stood a chair by the wall.
d. There began a riot.

It is our position that these predicates form an idiosyncratic list, perhaps a list in the SD of there-insertion, and not a semantic class. They are all more or less archaic in this use. Further, semantically cognate predicates do not admit there-insertion:

167. a. *There {went / left} a savior.
b.
c. *There sat a man by the wall.
d, *There started a riot.

The sequence there to go is permissible in certain circumstances, but this is not due to there-insertion

168. There goes a friend of mine.

because here is also permitted:

169. Here comes a friend of mine.

The pronouns here have deictic value, as can be seen by the choice of go or come; there of there-insertion has no deictic value.

A more interesting problem of government is raised by Milsark (forthcoming)[FN 18]:

170. *There are some people tall.
" " " " hungry.

In which there-insertion is apparently sensitive to the choice of predicate. This paradigm is closely related to another:

171. -str.
a. *Some people are tall.
b. " " " hungry.

c. Some people are tall.
d. " " " hungry.

That is, only stressed some is a good determiner for the tall class; hungry goes with stressed or unstressed some. Only stressless some can be there-inserted:

172. a. *There are some people hungry.

b. There are some people tall.
hungry.

Thus the there-insertion paradigm reduces to the problem of the distribution of stressless some, leaving there-insertion

ungoverned. The problem is more complicated than this - it obtains with the article a and numbers, where there is no difference in stress:

173. a. A friend of mine is {hungry.
b. {tall.

c. There is a friend of mine {hungry.
d. {*tall.

and there are cases where there-insertion is indifferent:

174. There is one tall, and there is one short.

I owe the following example to Oehrle (pers. comm.). He observed that there were cases of there insertion with verbs with particles:

175. In the middle of the show there trotted out six horses.

He observed further that particle movement could not take place:

176. *In the middle of the show there trotted six horses out.

even though the structural description is met:

177.

trot	out	six	horses
V	P	NP	

and particle movement applies with this verb:

178. John trotted six horses out.

Ordering particle movement before there-insertion will block the bad sentence, and this ordering we have already predicted without mentioning it - particle movement is a Pred rule, and there-insertion an S rule.

This simple solution rests on a number of assertions that have been questioned recently - that there is a rule of there-insertion and that particle movement is a rightward movement being the most important. We have answered the second of these, and the first is beyond the scope of the thesis.

Another much weaker argument for ordering is based on the same sentence - passive cannot apply to a there-inserted sentence:

179. *Six horses were trotted out by there.

This is given by the hypothesis of this chapter, since it predicts the opposite ordering of rules that would be needed to generate this sentence. This sentence cannot be ruled out on the grounds that there is lacking in NP-hood - there can serve as an NP for the passive transformation when it is a raised object:

180. There was believed to have been a riot.

Rather, the THC would rule this sentence out: there has no thematic relation to the verb, so whatever the thematic relation of six horses, it is higher than that of the subject, and the THC is violated. The ordering hypothesis makes by there impossible anyway, however.

2.7. CONTRACTION. English has two rules of contraction, one that contracts have and one that contracts not:

181. a. John shouldn't go.
b. John should've gone.

That they are distinct rules is shown by the fact that they are ordered differently with respect to SAI:

182. a. Shouldn't John go?

b. *Should've John gone?

Both of these rules meet the criteria for nonthematic S rules. Only negative contraction, however, can be ordered among the nonthematic S rules. Have contraction, since it follows an $\overline{S}$ rule, is an $\overline{S}$ rule.

I do not know why these rules differ in this way. The following remarks on other differences between the two rules should be regarded as directions for research, rather than explanation. We note first that contraction of a negation has semantic consequences when the contracted form is fronted:

183. a. Jim doesn't grow cotton, in order to get government subsidies.

b. Jim doesn't grow cotton in order to get government subsidies.

c. Didn't Jim grow cotton in order to get government subsidies?

d. Did John not grow cotton in order to get government subsidies.

The fact that c. and d. ask different questions, with a. as an

answer to d. and b. to c., shows that contraction (followed by fronting) has semantic consequences. Also, when neg is uncontracted and stressed, the semantics is changed:

184. a. John can't go.
b. John can not go.

Only the second has the interpretation "it is permitted that... not..." Can't is always interpreted as it is not permitted that...

I know of no cases where contraction of have has semantic consequences. The following shows that have contraction is an $\overline{S}$ phenomenon:

185. The people that've left...

Here, have has contracted with an $\overline{S}$ item, that, which is possible only if the rule of have contractions is an $\overline{S}$ rule. Thus, neg contraction is an S rule, and have contraction is an $\overline{S}$ rule.

2.8. ADVERBIAL EQUI. There is a class of time adverbial clauses with deleted subjects:

186. a. John left the house { while grazing the sheep. / before grazing the sheep. / after grazing the sheep. }
b.
c.

d. John hasn't left the house since coming of age.

e. John left the house { without telling anyone. / thinking no one would help him. }
f.

The controller of these clauses is always the subject. And as the following sentences show, it is always the derived subject, after passive:

187. a. John was kidnapped { while / before / after } shaving himself.
b.
c.

d. John has been kidnapped six times { without telling anyone. / since coming of age. / thinking no one would help. }
e.
f.

NP's are not eligible for this equi control other than the subject.

188. *They kidnapped John while admiring himself in the mirror.

These clauses show virtually no dependence on the selection of the predicate. This is consistent with equi for these clauses being controlled not by deep positions, or a thematic position, but by derived syntactic positions. There are no thematic requirements on the controller, and no agentivity requirements. Since clauses are dependent on the aspect of the sentence (it is best with the perfective), but none are dependent on inherent

features of verbs. This is to be contrasted with thematic or rule feature control of equi in complement clauses, as discussed earlier. There is never ambiguity of control, as with beg, or structurally unpredictable control, as with promise.

This indicates that thes clauses are not part of the predicate phrase, but are daughters of S. An evidence of this is their preposability:

189. {While / After / Since / Before} leaving, John convinced Bill to sell.

Often, a by phrase is almost equally preposable:

190. Before leaving, John convinced Bill to sell.

But in certain environments, there is a great difference.

191. While waiting for the bus, John was convincing people to sell.

??By waiting for the bus, John was convincing people to sell.

This slight difference in preposability should follow from the fact that by phrase equi is dependent on the verb to the extent

that it must be interpreted agentively, and that equi for these clauses shows no dependency at all. It should also follow from the fact that the by-phrase controller must be both the deep and the derived subject, while the controller for these clauses is determined solely on the basis of derived structure.

There is a class of predicates that is a counterexample to the claim that it is always the derived subject that controls the equi of adverbial clauses. These are a subset of Postal's psych predicates:

192. a. It {seemed / occured / struck} to me on entering the room that Bill was right.
b.
c.

These are not controlled by the derived subject. The fact that they are very preposable shows that they are not different from the clauses we considered earlier:

193. a. On entering the room, it {seemed / occured / struck} to me that Bob was right.
b.
c.

Other psych predicates do not allow this:

194. a. *On entering the room, it surprised me to find Bill there.
b. *On entering the room, it concerned me that Bill was gone.

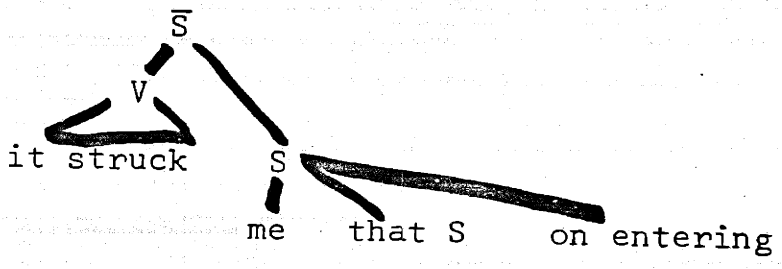
And if it-replacement has taken place, these counterexamples are no longer possible:

195. a. On entering the room, { John struck me as silly.
b. { John seemed to me to be asleep.

Here, the controller is the derived subject, as predicted.

Chomsky has suggested to me that it seems and it occured to and it struck in these sentences are reanalyzed at some stage of derivation as presentential verbs:

196.



Thereby leaving the object looking like the subject of the sentence. This would explain why it-replacement would block the object from controlling equi - no reanalysis could take place. But the reanalysis should block the time clause from fronting, since the pre-sentence position would be filled, and it doesn't seem to. Also, the reanalysis rule would have to be ordered before adverbial equi, but it is clearly an S̄ rule, since the reanalyzed verb appears under S̄.

2.9. MUST AND IN ORDER TO. Earlier, we said that an in order to clause was dependent on the ability of the verb to be interpreted agentively. With the modal must this dependency does not obtain:

197, a. John must { resemble / be green / inherit a fortune } his father in order to win.
b.
c.

Since equi in these cases does not depend on agentivity, it is a nonthematic rule, whereas the in order to equi discussed before was thematic. The nonthematic status of the rule predicts that it will apply to derived structure, or, more specifically, that it can be controlled by the passivized subject:

198. a. John must be examined in order to get life insurance.

b. John must be received well in order to be elected to the society.

Although IOT clauses could appear with passive sentences without must, as we saw earlier, equi could not be controlled by the subject of such sentences.

3.0. In this chapter we have established two classes of S rules, and argued that one set is ordered before the other:

199.

passive	case marking
tough movement	number agreement
reflexification	there insertion
complement equi	q-float
	in order to equi - must
	contraction of not

Footnotes to Chapter 3.

1. Gruber 1965 chapter 2.
2. Jackendoff 1972.
3. Bowers 1973 chapter 2.
4. Aronoff 1974.
5. Jackendoff 1972 chapter 5.
6. Jackendoff 1972 p. 198.
7. Jackendoff 1972.
8. Postal 1970.
9. Jenkins 1972.
10. Faraci forthcoming.
11. Wasow 1972 chapter 4.
12. Jackendoff 1972 p. 148.
13. H iggins 1972.
14. Kiparsky and Kiparsky 1971.
15. Ross 1967.
16. Ross 1973,
17. Fiengo 1971.
18. Milsark forthcoming.

Chapter 4

0. In this chapter we will be concerned with rules that have $\overline{S}$ scope, and that are ordered very late. The two principle cyclic rules of this discussion are result clause extraposition and WH movement. I know of no arguments of the type that can be given for passive that these rules are cyclic; however, within the framework outlined in Chapter 1 they are so trivially.

We will argue that root transformations all have $\overline{S}$ domain, and that they constitute a postcycle. And finally, we will examine some surface interpretation phenomena that interacts with the notion of "domain" that we have been developing.

1.0 In this section, our main purpose will be to show that the extraposition of clauses that determine various quantifiers (<u>than</u>, and <u>so</u>...<u>that</u>) is an $\overline{S}$ rule, and concomittently, that it is a late process, ordered in the vicinity of WH movement, though perhaps not ordered with it.

1.1 SUBJECT AUX INVERSION, SCOPE, AND EXTRAPOSITION

SAI is an $\overline{S}$ rule, because this rule must look in the complementizer to know when to operate. It is also a root transformation, but this will not concern the present discussion. It was argued to follow many nonthematic rules of the last chapter. Here, we

will treat its interaction with result clause extraposition.

The following sentences show an intimate connection between scope and extraposition

1a. John must win more races than I do in order to win a prize.

b. John must win more races in order to win a prize than I must.

The in order to clauses are dependent on the modal must, as described in chapter 3. The than clause is extraposed from more, in 1a. short of the in order to clause, and in 2. after the in order to clause. These different positions are associated with different interpretations of the comparison with respect to the modal. 1 can be paraphrased as "no matter how many races I win, John must win more"; that is, the comparison is semantically subordinate to the modal

2. $M(Q_1\ Q_2)$

In the second one, I have to win a certain number, and John has to win a certain number, and one number is greater than the other

3. $Q_1(M),\ Q_2(M),\ Q_1 > Q_2$

The same principle applies to the following:

4a. We would have made so much more if he hadnt been there that next year we will hold the meeting in secret.

b. *We would have made so much more that next year we will hold the meeting in secret if he hadnt been there.

c. We would have made so much that we could have retired if he hadnt been there.

d. We would have made so much if he hadnt been there we could have retired.

Here, the <u>if</u> clause is dependent on the modal <u>would</u>, and the <u>that</u> clause on the determiner <u>so</u>. When the Q is interpreted outside of the modal <u>would</u>, as paraphrase indicates, then the result clause must extrapose beyond the <u>if</u> clause. The <u>if</u> clause in that case is not frontable, even though without the result clause it is perfectly frontable:

5a. *If John hadnt been there, we would have made so much more money that next year we are holding the meeting in secret.

b. If John hadnt been there, we would have made a lot of money.

Also, when the result clause determiner is superordinate to the modal semantically, there is no sequence of tense requirement on the result clause; 4a. shows a violation of sequence of tense. In the case where the result clause determiner is semantically

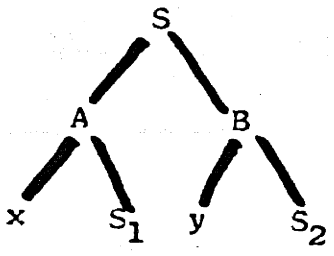
subordinate to the modal, and where the result clause extraposes short of the if clause, sequence of tense is imposed, and, in addition, a modality agreement condition holds:

6a. We would have made so much that we { *can
b. { *were able to
c. { are / could have
d. { would
e. { should have }
retired, if John hadnt been there.

a. violates sequence of tense (actually, identity of tense). b. does not contain a modal, despite an alleged synonymy with c.

On the basis of these examples, we will propose the following relation between extraposition and scope: If two scope items x and y with their determining clauses are represented in deep structure as

7.



and if extraposition yields the structure

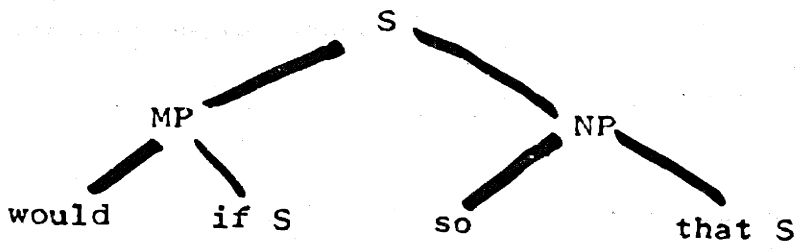
8. ...x...y...S_1S_2..

then semantically (y(x)); if it yields

9. ...x...y...S_2S_1...

then semantically (x(y)). To apply this to the structure in 4, we have the deep structure

10.



More intuitively, a clause associated with a scopal item extraposes to the end of that scope.

This may generalize with the WH crossing constraints we will discuss shortly, where the scope of a quantifier contains a trace anaphoricly bound to a WH word outside the scope of the modal. Here, the quantifier contains an <u>if</u> clause in its scope -- we know this because the extraposed clause is beyond the if clause -- and the <u>if</u> clause is bound, in some manner we have not specified, to the modal <u>would</u>, so <u>would</u> must be inside the scope of the quantifier <u>so</u>.

The quantifier so can appear in the complementizer, with extraposed that clause:

So often was no one there that we went bankrupt.

In order to show that extraposition can take place from the complementizer position, it must be shown that extraposition follows preposing, and not vice versa. One argument is the following -- as an answer to A, one could say B:

11a. Why wasnt the work finished?

b. Because so often { no one was / ??was no one } there.

There is no result clause -- the so is undetermined. Its determination is actually the question itself. Inversion cannot take place. Hence, it is not the presence of the so in the complementizer, but the extraposition of the result clause that must be accompanied by inversion.

But if this is so, then extraposition must follow fronting, since it is obviously only extraposition from the complementizer position that can cause inversion:

12a. John was so insane that he died.

b. Was John so insane that he died. (diff. source)

Thus result clause extraposition is an $\bar{S}$ rule, since its domain includes the complementizer.

One might wonder, is it the presence of the result clause in the complementizer before extraposition that causes the inversion, and not the actual extraposition itself? With result clauses, it is impossible to tell, since extraposition is obligatory. However, with several other extraposing Q-determining clauses, extraposition is not obligatory. Thus, the comparative <u>than</u> clause does not obligatorily extrapose, and when it doesn't, inversion does not take place:

13a. More often than I had anticipated { John was not there
b. { *was John not there }

<u>Too</u>, and <u>enough</u> clauses behave analogously:

14a. Just enough to be sonspicuous, John was absent from work.
b. Too confused to accept the consequences, John committed suicide.

These clauses do not extrapose well from the complementizer position, but when they do, inversion accompanies them:

15a. Too often was John absent to finish his work.

b. *Too often John was absent to finish his work.

c. More often was John absent than I had anticipated.

d. *More often John was absent then I had anticipated.

In summary we may say -- no extraposition may take place from the complementizer position unless inversion occurs.

Occasionally there are compound reasons for inversion; in that case, extraposition is till OK:

16a. Seldom { was John } there.
b. { *John was }

c. So seldom was John there that we fired him.

So far, we have argued that inversion and extraposition of result clauses are $\overline{S}$ rules. We may want to identify quantifier interpretation and result (and other Q-determining) clause extraposition because of the principled relation between them that we have observed. If so, we would like to order Q-interpretation very late and show that it is an $\overline{S}$ rule. Its interaction with WH movement does not argue for ordering it before or after WH movement, simply because the structural configurations both before and after WH movement are relevant for describing this interaction.

It is ordered in the vicinity of WH movement. As far

as the domain of Q interpretation goes, it must interpret quantifiers in the complementizer:

17a. I didn't see many of the men.

b. Many of the men I didn't see.

The first is interpreted as not (many), the second as many (not). I think that Yiddish movement, which postal shows to be a different rule from fronting, might yield a reading for b. that is the same as a., and emphasis on many in one can yield a reading identical to b. But in the neutral cases, the interpretations are as given. This shows that Q interpretation follows fronting, just as result clause extraposition did, thus abetting some kind of identification of the two rules.

We have established a link between extraposition and scope, and between extraposition and inversion.

EXTRAPOSITION FROM NP. It is instructive to compare result clause extraposition with another rule of extraposition, Extraposition from NP(ENP):

18a. A man left the room who had a whip.

b. A man who had a whip left the room.

With definite NPs this rule is subject to a strong perceptually based ambiguity constraint, which says that the rule cannot move a clause over an NP from which the clause could have originated. The definition of that class of NPs is tricky, if not squishy, as Ross has argued (class lectures, 1974). In the following, *= not derivable by ENP:

19a. *The man kissed the woman who entered the store.
b. The man left the room who had a toothache.

And with a quantifier in the determiner, the perceptual constraint is greatly weakened:

20a. Anyone can kiss the girl who has blue eyes.
b. Everyone kissed the girl who entered the room.

WH words, which are quantifiers of a kind, allow extraposition --

21a. Who was there that you know.
b. Who do you know that knows Greek.

Only an S can extrapose:

22. *Who does he know with any sense?

NPs with negation in the determinar also allow uninhibited extraposition:

23. Nobody would kiss the girl who had seen Jim hit Frank.

All of the items which allow free uninhibited extraposition are items with scope -- quantifiers, negation. Here again we see a relation between scope and extraposition. We have already seen one case of extraposition, result clause extraposition, that could take place from the complementizer position. We claimed that inversion must accompany such extraposition. For the case of extraposition from NP with a WH word as head, we might wonder whether this extraposition could take place from the complementizer position. In questions, inversion does not take place if the questioned word is the subject -- and yet extraposition is still possible:

24. Who was there who knows Greek?

And in embedded questions, where inversion never takes place, extraposition from a WH word can also take place:

25. I don't know who John knows who knows Greek.

If we want to maintain that extraposition takes place from the complementizer position only in the presence of inversion, then we will have to claim in these cases that extraposition takes place before WH movement. Then WH movement would move the bare WH word from which the relative had extraposed. Extraposition is permitted in environments other than the subject anyway:

26. John saw someone yesterday who knows Greek.

If this analysis is correct, then extraposition becomes eligible to be an S rule, whereas extraposition of result clauses was an $\overline{S}$ rule.

This is evidence on the left (i.e., with respect to the complementizer position), that ENP is an S rule; evidence on the right comes by way of comparison with result clause extraposition: result clauses can extrapose further than relatives by extraposition from NP.

Because clauses, as noted by Lasnik and Lakoff can be inside the scope of negation or outside it:

27. John didn't kill his wife (,) because he loved her.

When there is a because clause inside the scope of negation, extraposition is bad, whether before or after the because clause:

28a. Not everybody who was at Sam's went to Bill's.

b. Not everybody went to Sam's who was at Bill's.

c. *Not everybody went to Bill's who was at Sam's because Sam's is smaller.

d. *Not everybody went to Bill's because Sam's was smaller who was at Sam's.

We cannot attribute the badness of the last example to the extraposition of a relative over another clause; where the other clause is a verb complement, this is acceptable:

29a. Many people told the doctor they were sick who really weren't.

b. Not everybody was convinced that he was sick who had been told so by the doctor.

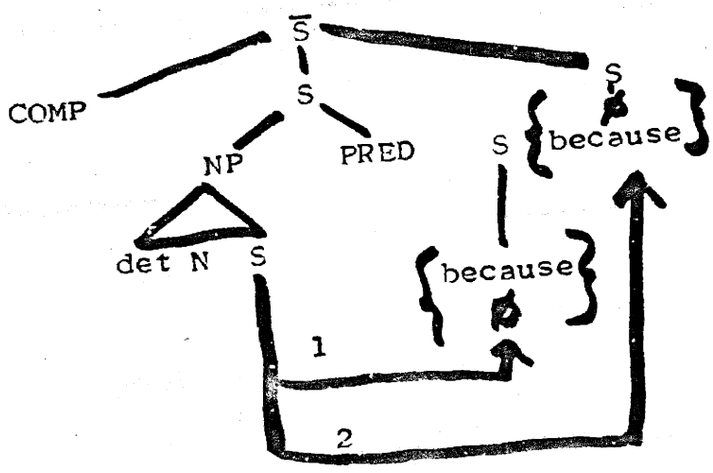
When the because clause is outside of the scope of negation, we find that extraposition is good short of the because clause, but not after.

30a. Not everybody went to Bill's who was at Sam's, because Sam's is smaller.

b. *Not everybody went to Bill's, because Bill's is smaller, who was at Sam's.

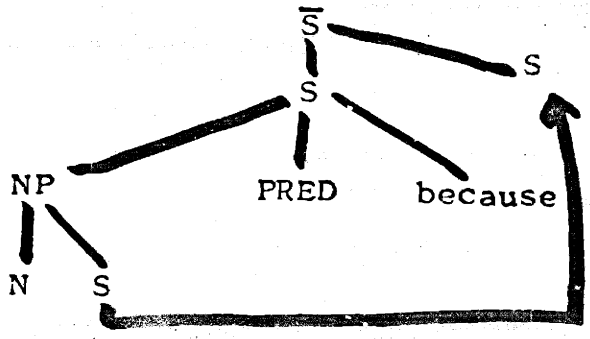
Suppose that the difference between being inside and outside the scope of negation is structural -- the difference between S and $\overline{S}$. If extraposition from NP is a structure preserving S rule, filling an S node immediately dominated by S, then we have the following scheme for the two paradigms just considered:

31.



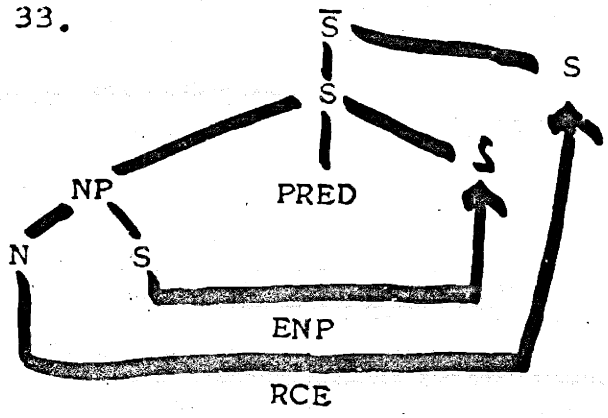
The application indicated by the line 1 is blocked if there is a because clause in the target position, allowed otherwise. The operation represented as 2 is impossible if Extraposition from NP is an S rule, since in this application the rule analyzes material in $\overline{S}$. By comparison, result clause extraposition, which we have argued to be an $\overline{S}$ rule, can perform the operation indicated by 2:

32. So many people didn't come to our show because they found our ad offensive that we have decided to remove it.



To summarize, the following represents both rules:

33.



We can examine the difference between these two rules by examining sentences in which both apply:

33a. So seldom did anyone approach the doctor who had a real problem that he decided to retire.

b. *So seldom did anyone approach the doctor that he decided to retire who had a real problem.

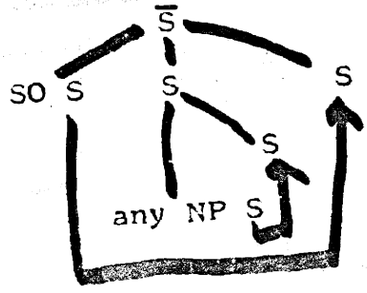
c. *No one got so tired who was using a shovel that he had to quit.

d. *No one got so tired that he had to quit who was using a shovel.

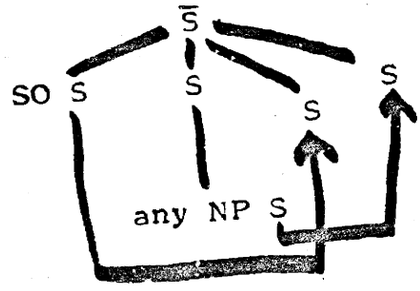
These sentences can be represented by the following configurations:

34.

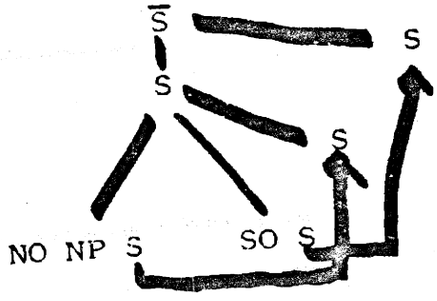
a.



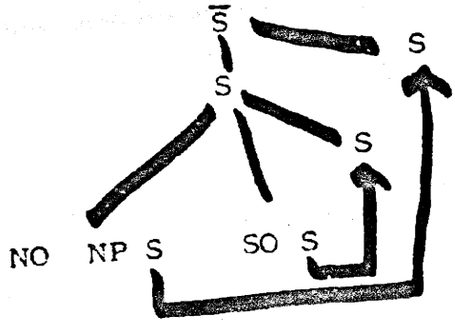
b.



c.



d.



b. and d. are out because result clause extraposition is an $\bar{S}$ rule, and would like to move its S to the position dominated by $\bar{S}$. B. and c. are out for another reason. As we saw with must... in order to / so...that, where two clauses are dependent on items with scope, then when both extrapose, the clause associated with the item of superior scope must extrapose to the right of the other clause. With items for which scope is determined in terms of precedes, this means that the extrapositions cannot cross each other.

Ross[FN1] has argued that extraposition from NP is last-cyclic. He argues that:

35. *Which packages is it possible that Sam didn't pick up which are to be mailed tomorrow until it had stopped raining

is ungrammatical because extraposition has taken place cyclicly. However, if we treat WH as a quantifier, which we argue is appropriate in the next section, then the same principle which rules out(34c) will rule this sentence out: the only possible scope of the quantifier WH includes the <u>until</u> clause, so the extraposed relative must go beyond the until clause.

And if we make <u>until</u> an $\overline{S}$ clause (like the because clauses in (31)) then we predict the oddness of Ross'

5.33 *?Sam didn't pick those packages up until it had stopped raining which are to be mailed tomorrow.

5.35a??Which packages is it possible that Sam didn't pick up until it had stopped raining which are to be mailed tomorrow.

since in these cases ENP is extraposing beyond S domain.

If Q interpretation and result clause extraposition are both $\overline{S}$ processes, then we would not expect them to generalize to NPs, since NPs do not contain a phrase corresponding to $\overline{S}$.[FN2] And, as I have shown[FN3] neither do gerunds. Thus we do not find:

36a. *John's destruction of many boats upset Mary.

b. *Mary was upset by John's destruction of so many boats that the harbor was closed.

c. *John's destroying many boats upset Mary.

d. *Mary was upset by John's destroying so many boats that the harbor was closed.

This does not prevent a quantifier or a result clause embedded in an NP from being interpreted or extraposed on the $\bar{S}$ level of the clause in which the NP is embedded:

37. John gave so many things to John that he was embarrassed.

This is prevented in the cases above by the specified subject constraint.[FN4]

1.2 WH MOVEMENT

WH movement follows passive, since the passivized subject and the by phrase NP are both eligible to be fronted. By our hypothesis, WH movement also follows all of the rules given in the last half of chapter 3, and arguments were given where they were manifest.

1.2.1. WH and WH. Earlier, we looked at the constraint on WH movement, and other rules, forbidding movement of a dative moved NP:

38a. Who did you give the books to?

b. *Who did you give the books to?

This constraint is nullified, and the paradigm reversed, where the subject NP is also a WH word:

39a. Who did you give what

b. *Who did you give what to

b. is ruled out by a constraint against crossing certain WH words, described by Kuno and Robinson.[FN 5] I don't know why a is grammatical; it may be because b isn't. The crossing constraint does not apply to where, when:

40a. Where did who go

b. When did who leave

c. *Why did who leave

d. *What did who see

e. *Who did what bother

Ross has argued that the constraint applies only to WH words generated "close to V" where this is meant to exclude locative

and time adverb positions. But:

41. Where did John put what

which derives from

42. John put what where

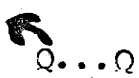
by crossing, is grammatical despite the constraint, even though preposing and subcategorization arguments would say that the locative with put is "close to V." It seems that when or where are excluded from the constraint regardless of their source. We will now look at related facts, where WH crosses Q.

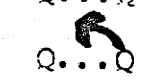
1.2.2 Q and WH. Jackendoff has argued that Q interpretation is based on surface structure, arguing from the difference in meaning of such pairs as:

43a. Many arrows hit few targets.

b. Few targets were hit by many arrows.

WH movement complicates this picture:

44a. How many arrows hit few targets 

b. *How many targets did few arrows hit 

c. How many targets were hit by many arrows 

d. *How many arrows were many targets hit by 

The two ungrammatical sentences result from a WH word crossing a quantifier. This crossing must be effected by WH movement, since c. contains a WH word and a Q which have been crossed by passive, and it is grammatical.

We may state this as a condition on WH movement, or, adopting Wasow's trace proposal[FN6], propose that a quantifier cannot contain a trace in its scope unless it contains the WH word which binds it:

45a. *WH...Q...t

b. WH...t...Q

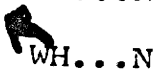
c. Q...WH...t

What will <u>not</u> serve here, is to order Q interpretation after WH movement, because it is the structure both before and after WH movement that is relevant.

1.2.3 WH and NEG. The same pardigm obtains with negation of the sentential kind:

52a. *How many languages does no one speak 

b. How many languages are spoken by no one 

c. How many people speak no languages 

d. *How many people are no languages spoken by 

The constraint can be summarized, in terms of trace, as:

53. $$*WH.\begin{Bmatrix}NEG\\.Q.\\WH\end{Bmatrix}.t$$

This contraint is obviously too general as it stands. The trace must be in the semantic scope of the quantifier as a violation. This may expalin why the constraint is inoperative for uncontracted "VP" negation.

This constraint does not always work at full strength:

54. ?Who didn't you see

and it doesn't operate at all if the negation is uncontracted in the aux (see chapter 3 on contraction).

Two, and perhaps all three, of the environments of the generalized WH crossing constraint above are items with $\overline{S}$ scope -- as can be seen from the simple fact that there are instances of negation and quantification in the complementizer. These are Jackendoff's type III scope items, items whose scope is determined at surface structure. Surface structure rules for the interpretation of NEG and Q has $\overline{S}$ domain. It is not a corollary of our theory, but rather an interesting fact, in terms of our theory, that these items interact with WH movement, which has $\overline{S}$ domain, whereas the other two types of modality II (=modals) and I (=want - type verbs) which do not have $\overline{S}$ scope and which are associated with earlier structures (Jackendoff assigns II to intermediate structure and I to deep structure) do not interact with WH movement -- extraction can occur in these cases, and the ambiguities that the modality provides are preserved under movement:

55a. How many people can John fight (II)

b. How many people does John want to fight (I)

Perhaps WH movement should be subsumed under the laws of type III modality. One of these laws is that it is determined at surface structure and has $\overline{S}$ scope.

1.2.4 COMPARATIVES. The WH constraint is probably operative in the following comparative paradigms:

56a. I have more to say about ice cream than about cake.

b. *Ice cream, which I have more to say about than about cake.

c. Bill, who has more to say about ice cream than about cake.

When extraction crosses more, as in the second sentence, the sentence is ungrammatical. This constraint covers the following:

57a. *What do more people like than a baseball game.

b. What do people like more than a baseball game.

However, a WH word can cross a more if the extraction site is contained in the antecendent of deletion from the comparative clause:

58a. Ice cream, which I have more to say about than Bill

b. Ice cream, which more people like than you would suppose

Here, the deletion antecendents are underlined. One way to interpret these paradigms is that the extraction site has been "deleted" as part of comparative deletion.

This parallelism of extraction from the than clause is not some parallelism of rule application between the two clauses; in the following, both particle movement and passive have applied in one clause, but not the other:

59a. John wrote a check for more money than had been put in the account.

b. I would rather tear up my library card than turn it over to you.

In the following sentences, there is a delection from the than clause when there is an extraction (over more) in the main clause, and this deletion cannot be attributed to comparative ellipsis[FN7]:

60a. *I would rather praise Bob than criticize.

b. Bob, who I would rather praise than criticize.

The position which can be deleted in this way is constrained by a parallelism condition I have not mastered the details of:

61a. Bill, who I would rather see criticize Sam than praise Harry.

b. Bill, who I would rather see Bill criticize than Harry praise.

c. *Bill, who I would rather see criticize Bill than Harry praise.

d. *Bill, who I would rather see Bill criticize than praise Harry.

Sentence a. could be generated by conjunction reduction, followed by extraction. It is doubtful that b. could be generated by right node raising, however; first, extraction here is obligatory, whereas right node raising is optional; and, as the following show, extraction can occur where right node raising is impossible:

62a. John, who I would rather see leave the police force entirely than recommend for the job of captain.

b. *I would rather see leave the police force entirely than recommend for the job of captain John.

We might postulate that extraction is going on in both clauses. Then we could describe the parallelism exhibited in the above paradigm in terms of the extraction rule:

X NP Y

as follows: If X does not include material outside of the antecedent of comparative deletion in the matrix, then it must be unfilled in the than clause; if it does contain material outside of the antecedent of comparative deletion, then it cannot be empty in its application in the than clause. I leave it to the

reader to verify that this covers the paradigm discussed. I have not pursued this possibility far. This solution centers the explanation for the parallelism in this paradigm in a fairly complicated condition of parallelism in the interpretation of variables in a double application of the rule.

There is an interesting constraint on comparative deletion that has to do with the scope of the comparison. Comparative deletion with antecedent X and deletion site in the following configuration:

64. $[_S$ X $[_{S*}$ more... $[_{than}$ ...$]_{than}$ $]_{S*}$ $]_S$

is best when S* is a highly reduced S, worse when it is an infinitive, worse when there is a subject, and impossible when it is tensed.

65a. John finds Mary prettier than Bill does. reduced S

b. ?The director wants the play to be longer than the producer does. infinitive

c. *John thinks Mary is taller than Bill does. tensed S

However, it is impossible if the scope of the comparison does not include the antecendent. Thus the following sentence is two ways ambiguous, as the paraphrases illustrate:

66a. My father tells me to do more work than my boss tells me to.

b. The amount of work that my father tells me to do is greater than the amount of work that my boss tells me to do.

c. My father tells me to make the amount of work I do greater than the amount of work that my boss tells me to do.

However, the following sentence, although ambiguous in its own right, cannot be derived from a. with interpretation c., by deletion, since the comparison does not include the antecedent of deletion:

67. My father tells me to work harder than my boss does.

We have already seen that comparative clause extraposition and comparative interpretation are both $\overline{S}$ phenomena.

2.6 In the past four sections we have established that WH movement interacts strongly with the rules governing 1) WH movement itself; 2) quantifiers; 3) negation; 4) comparatives. The rules governing all of these are $\overline{S}$ rules -- that is, their application is not bounded by intraclausal phrase structure. These are all Jackendoff's type III scope rules,[FN8] the rules which he claims operate on surface structure.

Thus, if we consider WH movement as a type III scope rule, we may say that type III scope rules are all mutually interactive. We may further claim that type III scope rules are not interactive with type I (for want contexts) and type II (modals). And that type III rules have $\overline{S}$ domain, type II have S domain, and type I has VP domain.

To show that type II and III are not interactive with WH movement the way type I is, consider the following:

68a. *I don't know how many languages no one knows.

b. I don't know how many languages John can learn.

c. I don't know how many languages John needs to prove his hypothesis.

In b. and c., representing types II and I, the sentence is not starred due to WH movement. Rather the ambiguity inherent in the pre-WH structure is preserved. In a., however, WH conflicts with a type III rule.

2. ROOT TRANSFORMATIONS

We plan to discuss here the notions root, last cyclic, and post cyclic, vis-a-vis the ordering theory proposed here, even though a narrow view of the theory would not be forced to say anything about this aspect of rules.

A priori, a theory with a post cycle and no last cyclic rules is preferable to a theory with last cyclic rules. This is because a post cyclic theory can always be expressed as a last cyclic theory:

69. CCCCCC PPPPP CCCCCCLLLLL

It is the trivial case of the last cyclic theory where all of the last cyclic rules are ordered after all of the non last cyclic rules.

A generalization which we will explore shortly is that all root transformations are $\overline{S}$ rules. In our theory, this entails that they will be very late rules. And this seems to be the case, as we will seek to establish. But if this is true, and if root transformations are last cyclic rules, then the ordering situation that obtains is approaching (if not identical with) the "trivial" last cyclic situation, the one equivalent to a post cyclic theory. This immediately suggests at least tentatively

adopting the post cyclic theory of root transformations. This strong assumption, coupled with our theory, makes the following predictions:

1. That all root transformations analyze material in $\overline{S}$. We must insist that some derivations exist in which this occurs, otherwise we lose the force of the ordering condition. Emonds makes a looser claim about this than we do -- he claimed that all root transformation adjoined items to the root S node. Since he had no $\overline{S}$, many positions were available that met this condition which we would not analyze as being immediately dominated by $\overline{S}$. Two examples are the subject and the auxiliary -- these are both S, but not $\overline{S}$. If intraposition is a root transformation, for instance, then there is one root transformation that is not an $\overline{S}$ rule, counter to our thesis.

2. It predicts that root transformations will be ordered after all other transformations, followed only by surface structure rules. We will examine the rules that Emonds mentions in his disseration, as root transformations, with respect to these two predictions. Before doing so, I would like to point out negative predictions that this theory has. It predicts that a rule such as particle movement cannot be a postcyclic rule, that it must be a cyclic rule, since it is limited to the predicate phrase. This is in contradistinction to the arguments of Ross[FN 9].

2.1 SUBJECT AUX INVERSION

The only evidence we have given that SAI is an $\bar{S}$ rule is that the statement of its affective environment includes the complementizer; nothing need be moved into or out of the complementizer. A stronger position may be taken -- SAI actually moves the auxiliary into the complementizer -- hence a structural change takes place at the $\bar{S}$ level. This leaves open the question as to whether affective elements such as neg are actually in the structural description of the rule.

70. $[_{\bar{S}}\ [_{S}\ NP\ \ AUX\ ]_{S}\ ]_{\bar{S}} \rightarrow [_{\bar{S}}\ \ AUX\ \ [_{S}\ NP]_{S}\ ]_{\bar{S}}$

Thus SAI actually adjoins items to $\bar{S}$.

There is something to be gained from this analysis. Whenever negation appears in the complementizer, it must be interpreted as having the widest possible scope. Nothing in $\bar{S}$ may escape the scope of negation.

71a. John probably never went there.

b. John never went there, probably.

Probably cannot be under the scope of negation. In a., it precedes never, and in b. it follows never, but is separated from it by an intonation break, across which negation cannot leap. When never is fronted, probably is excluded from the sentence entirely,

since, by the principle above, it must be in the scope of negation:

72a. *Never did John go there, probably.

b. *Never did John probably go there.

The intonation break is used to disambiguate sentences with negation and because:

73. John didn't go (,) because Mary wanted him to.

However, when SAI causes the negative to be fronted, this disambiguation is not possible:

74. Didn't John kill his wife (*,) because he loved her.

This is not true of negation in the subject position:

75. No one left (,) because the party was over.

or in the aux, as above. In fact, if the not isn't fronted, it has the subordinate meaning:

76. Did John not go because Mary wanted him to?

This fact about not fronted by SAI would follow from the generalization about not in the complementizer given above if SAI moves the auxiliary into $\overline{S}$.

Quantifiers in the complementizer are interpreted as superior to negation in the aux, although the same quantifier in the subject can be interpreted as subordinate to the negation in the aux:

77a. Everytime I go there, John won't cooperate (every (not))

b. Everybody wasn't there. (not (every))

Here again, the complementizer is scopally dominant.

Yet a third generalization is that when a negation is fronted with a modal by SAI, the negation is interpreted as semantically superior to the modal, even where the modal is superior in fronted cases:

78a. John shouldn't go (should not)

b. Shouldn't John go (not should)

When negation does not have scope over the modal, it is not fronted:

79a. Should John not go

b. Did John not kill his wife because he loved her

We conclude then that SAI moves the aux into the complementizer. This is stipulated as a feature of $\overline{S}$ rules.

2.2 TAG QUESTION FORMATION

Since the tag of a tag question appears after because clauses

80a. John killed his wife because he loved her didn't he

b. *John killed his wife didn't he because he loved her

we may consider the tag under $\overline{S}$ domination, which means that tag formation is a $\overline{S}$ rule, or whatever rules that apply to tags. This predicts that it follows all S rules -- if the rules of tag formation are copy, inversion, and deletion, then all three of these rules must follow passive, there insertion:

81a. John was arrested by the police {wasn't he / *didn't they}

b. There is one of your pens in my drawer, {isn't there / *isn't it}

Tag formation is subject to the following semantic constraint; If the tag is positive, then a negative must appear in the main

clause, and that neg must be semantically superior to everything. Thus the oddness of:

82a. *John should NOT go, should he. should (not)

b. *Many people didn't go, did they. many (not)

but the goodness of:

33a. John shouldn't go, should he

b. Not many people went, did they

Thus tag formation, or the rules it stands for, seems to meet both predictions: it is ordered late, and has $\overline{S}$ domain.

2.3 PARANTHETICAL INSERTION

Parenthetical insertion and quote preposing are very similar rules, despite their different names. Both are responsible for the short subject verb (or verb-subject) sequences in major consituent breaks in a root S:

84a. Why did John, Bill asked, leave with Mary. (quote preposing)

b. John I think left today.

c. Why, I wonder, did John do such a thing.

The last sentence indicates that whatever rules are involved in the formation of sentences like this, and whatever is the source of tags like I wonder and Bill asked, the rule must analyze material in $\overline{S}$, since in this sentence the tag appears between two $\overline{S}$ items, the fronted WH word and the fronted aux, both $\overline{S}$ positions as we have argued. Thus parenthetical insertion is an $\overline{S}$ rule.

An extremely naive approach to ordering would order this insertion at or near the surface, after such rules as extraposition and their insertion, to explain the following pairs:

85a. That Bill was here, Sam said, is obvious.
b. *It, Bill said, is obvious that Sam is here.
c. Six men, Bill said, were beating up George.
d. *There, Bill said, were six men beating up George.

All this shows is that the structure after these rules is relevant for stating the distribution of these inserted tags. But this is predicted by parenthetical insertion being an $\overline{S}$ rule.

2.4 ADVERB PREPOSING

This rule is $\overline{S}$, simply because it moves items into the complementizer position. Adverb preposing is thus ordered after S rules; the following show that it is ordered after conjunct movement and after passive:

86a. With John, Bill went to town.

b. By Bill, the window was opened.

The same goes for negative constituent preposing -- it moves items into Comp, and it is ordered after these two rules --

87a. By no one was John more mistreated than by the police.

b. With no one would Mary dance.

Topicalization falls into this class as well. It moves items into the complementizer, and it is ordered after passive and conjunct movement:

88a. John I won't be seen by.

b. Bill Mary won't dance with.

Topicalization also follows extraposition, another S rule, to avoid violations of the sentential subject constraint:

89a. Bill it is important for me to talk to.

b. *Bill for me to talk to is important.

2.5 DIRECTIONAL ADVERB PREPOSING

Directional adverb preposing can be formulated two ways -- as a

preposing rule, followed by inversion of subject and verb, or as a permutation rule around intransive verbs.

90. THEORY 1

$$[_{\bar{S}}\ [_{S}\ \text{John ran into the woods}]_{S}\ ]_{\bar{S}}$$

$$[_{\bar{S}}\ \text{into the woods}\ [_{S}\ \text{John ran}]_{S}\ ]_{\bar{S}}$$

$$[_{\bar{S}}\ \text{into the woods}\ [_{S}\ \text{ran John}]_{S}\ ]_{\bar{S}}$$

THEORY 2

$$[_{\bar{S}}\ [_{S}\ \text{into the woods ran John}]_{S}\ ]_{\bar{S}}$$

As can be seen, theory 1, but not theory 2, meets our prediction about root transformations, that their SD analyzes analyzes $\bar{S}$ material. Unfortunately, direct confirmation of either theory is hard to find. 1 is not favored by the fact that inversion is optional:

91. Into the woods, John ran

since this would be generated by the ordinary rule of adverb preposing, which in theory 2 would have to be a rule distinct from permutation.

2.5.1. PERMUTATION AROUND BE. Emonds cites a number of transformations as root which permute items around be:

92a. More important was the election of the king. (comparative substitution)

b. In the garden was an antelope. (PP substitution)

c. Washing the dishes was Mary (VP fronting)

Again, the analysis of these constructions is uncertain to me.

2.6 INTRAPOSITION

The only clear counter example to our claim about root transformations is Emond's rule of intraposition. He argues that this rule is a root transformation, and we have argued that it (the arguments that applied to extraposition apply to intraposition) is a S rule. Emonds analysis of extraposition has been challenged FN 10 and I understand (personal comm.) that Emonds has revised his theory in favor of the extraposition analysis, from which I deduce, though perhaps wrongly, that he no longer considers this a root process.

2.7 PRONOMINALIZATION

Pronominalization is an extremely late rule, if it is a rule, as is well known. There are no arguments that it is not a surface

structure rule. Our theory predicts that it will have widest possible scope:

93. The house which Mary bought she likes the most.

The underlining indicates correference. This sentence shows both that pronominalization has $\bar{S}$ scope, since the antecedent is in the complementizer, but also that it follows Topicalization, another $\bar{S}$ rule.

There is a restriction noted by Lakoff[FN 11] on pronominalization involving the complementizer, as in:

94. *In Mary's apartment she smokes pot.

But this cannot be explained, as Lakoff pointed out, by ordering pronominalization before adverb fronting, since if the antecedent is in a relative, the anaphora is good:

95. In the apartment Mary rents, she smokes pot.

The scope of pronominalization is not limited by the intonation break:

96. John didn't leave, although he should have.

But it is when the antecedent is a quantifier:

97a. Each of the men owns a purse because he wants to be the first to wear one in public.

b. Each of the men owns a purse, although {*he doesn't / they don't} carry {*it / them} in public.

3.0 SURFACE RULES

Several rules of surface interpretation have been proposed by Jackendoff. It is trivial from our discussion of SAI that this interpretation has $\overline{S}$ scope -- negation in the complementizer is interpreted differently than when it appears elsewhere, so the rule of interpretation must have access to this position.

Our main interest for the present is a boundary on the right of scope phenomena that is marked by an intonation break. It will be shown that the interaction of rules with scope phenomena involving this boundary show that application of rules conditions must refer to this boundary. We have already seen how the scope of negation and quantifiers (including more) is determined by the operation of deletion, WH movement, and extraposition.

I do not think that this boundary coincides with phraseology given by base rules. I am including remarks on it here because it defines an apparent domain of rule application.

INTONATION BREAK (IB) AND SCOPE OF RULES

3.1 NEGATION

We have already seen how potential ambiguity of the scope of negation is eliminated by comma intonation:

98. John didn't leave (,) in order to frighten Mary.

And how this disambiguation is not possible when negation is in the complementizer:

99. Didn't John leave in order to frighten Mary.

Not all clauses can participate in this disambiguation -- since (meaning because) for instance:

100. John didn't leave town {because / *since} anybody wanted him to.

3.2 QUANTIFICATION

IB also marks the end of the scope of quantification. With certain quantifiers, singular pronouns can be used, but only within the scope of that quantifier:

101a. Each of the men went home because he had lost his money.

b. Each of the men went to his home, because they had lost their money. *he

We claimed earlier that no instance of a quantifier or a negation could include in its scope the complementizer in which it appeared -- Here we find, predictably, that the because clause with singular pronouns cannot prepose:

102. *Because {he / they} has lost his money, each of the men went home.

And since (meaning because) cannot contain a singular pronoun correferential with a quantified subject:

103. *Each of the men went home, since {his / their} stay was over.

This follows from the scope-terminating propoerty of the intonation break, and the fact that since must follow the intonation break. Although, just like since, clauses cannot contain singular pronouns or negative polarity items:

104a. *Each of the men left, although he had a lot to do.

b. *John didn't leave, although he had anything to do.

We can describe the distribution of these singular pronouns and negative polarity items, in terms of scope, and the fact that scope is terminated on the right by the intonation break. Many rules are sensitive to these scope relations. Another is IOT equi:

105a. *No one left, in order to kill Mary.

b. *In order to kill Mary, no one left.

c. No one left in order to kill Mary.

3.3 TENSE

Some limitations on rules having to do with tense can be described in terms of the intonation break. We have already seen that when a result clause extraposes short of an *if* clause, sequence of tense is inforced; when it extraposes beyond, sequence of tense is not inforced; correlated with this is the fact that an optional intonation break can occur before the result clause in the former case, but not in the latter:

106a. We would have accomplished so little (*,) that we { would have been / *are going to be } fired if he hadn't been there.

b. We would have accomplished so little if he hadn't been there (,) that we are going to give him a reward.

The if clauses we have described that fulfill the complement structure of verbs like glad, cannot be preceded by IB, and sequence of tense is inforced:

107a. John was angry that Bill was here.

b. John would be angry (*,) if Bill {was / *is} here.

This is also true of extraposed if clauses:

108. It would be a shame (*,) if Bill {was / *is} here.

In general, if clauses are not constrained in this way:

109. Bill couldn't have been in X yesterday if he is in Y today.

Thus the domain of SOT can be limited by IB.

The scope of tense, as described in terms of IB appears in the following:

110a. John left the room finishing his beer.

b. *John left the room, finishing his beer.

c. John left the room, having finished his beer.

d. ?John left the room having finished his beer.

e. Having finished his beer, John left the room.

f. Finishing his beer, John left the room.

a. means that John was drinking as he left; c., e., and f. that the drinking preceded the leaving. Perhaps there is a rule which assigns contemporaneity to the time reference of Tense in a sentence and the time reference of an adverbial participle; such a rule would apply in a., but be blocked in b. by IB.

3.4 EXTRAPOSITION

We have already mentioned that the *because* and *if* clauses that doubled as complements for verbs like *glad* could not appear after IB, and hence had to undergo sequence of tense, and cannot follow IB.

111a. It would be a shame (*,) if John { ran / *runs } over there for nothing.

b. It was a shame (*,) that John { ran over for nothing / *is running over for nothing }

This is another generalization of extraposed clauses and the *if*-complements.

The extraposition of result clauses depends on scope relations, as defined by IB. The extraposed clause can follow IB optionally when the quantifier with which it is associated is not under negation.

112. So many books were not returned, that the library was forced to close.

But not if the quantifier is under negation:

113a. John didn't kill so many fish (*,) that the lake was depleted.

b. *Not so many books were returned, that the library stayed in business.

But this should be no mystery. We have already claimed that the extraposed result clause goes to the end of the scope of the quantifier; so this, coupled with the fact that IB terminates the scope of negation, makes sentence b. contradictory; the fact that <u>not</u> precedes <u>so</u> says that <u>not</u> has scope over the quantifier; but if IB marks the end of the scope of negation, and the result clause extraposes beyond it, then it is implied that the <u>so</u> has larger scope than negation.

Thus we see that both rules and clause types treat the intonation break as a boundary.

114.

___IB	__IB or IB__	IB___
complement clauses	because	although
complement if	if	since
complement because	in order to	nominative absolute
	-ing	

Several rules, such as rules assigning scope to quantifiers, to negation, the rule of sequence of tense, and reflexivization,

cannot apply across this IB; the rule of result clause extraposition may. WH and topicalization may not extract across it. Some rules, such as pronominalization (if we may separate out the problem of quantified antecedents) are oblivious to it.

In several ways, then, IB is a real syntactic boundary.

3.5. SHIFTERS AND ADVERBS. The main value of a notation is its power of suggestion.. Jakobson[FN 12] has devised a notation for classifying verbal categories according to their use: P^nP^s, for instance, is a relation between the participants (P) of a narrated (n) event and the participants of the speech (s) event - the first and second personal pronouns are Jakobson's examples: E^nE^s is a relation between the narrated event and the speech event - tense (in the main clause) is such a relation.

Jakobson's examples of the uses of this notation are drawn exclusively from verbal classification schemes. Here, we will look at this notation as a means of classifying English adverbs and adjectives. As a simple case, consider the adverby "frankly" in what is called its sentential use (as in "Frankly, John didn't speak", not as in "John didn't speak frankly."). This adverb is unimbeddable:

115 . *John said that Bill, frankly, wasn't there.

That is, it cannot refer the John's explicit statement of his frankness. Thus, "frankly" is unlike other shifters, such as "home":

116 . &John is at home.

where home can refer to John's home or the speaker's home. "Frankly" relates the speech event to the speaker - in Jakobson's terms, $E^{s}p^{s}$. Jakobson has no name for this relation, but it is allowed by his notation.

Probably: this adverb is, we can say, simply a function of the narrated event, with no reference to speech event or speaker. This relation Jakobson calls STATUS or ASPECT, which "defines the logical character of the event."

Unfortunately, on the other hand, relates the speaker's values to the narrated event. Thus, the induced relation is $E^{n}p^{s}$. One may ask, how is probably different from unfortunately, since don't both of them represent judgments by the speaker? Yes, but of different sorts. If two speakers differ over the probability of an event, we say that one (or both) are mistaken, but not so if they disagree over its unfortunateness. Unfortunately is a shifter, like I - it has meaning only with reference to the speaker (via his values, or whatever), whereas probably has what Jakobson would loosely call "logical" status, independent of P^{s} or E^{s}.

Anxiously, eagerly:

117. a. John was { eager / anxious } to open the door.

b. John { eagerly / anxiously } opened the door.

These adverbs relate the state of mind of a participant in the narrated event (P^n) to the narrated event itself: P^nE^n. Jakobson calls this relation VOICE, which "characterizes the relation between the narrated event and its participants, without reference to the speech event", i.e., John was eager or not, regardless of who is reporting.

Cleverly, stupidly: These adverbs have (at least) two uses:

118. a. John cleverly came home late.
b. John built the house cleverly.

a. is "sentential"; b. is "manner". We will be concerned with the sentential use. The sentential use refers to a participant in the narrated event, but the manner use does not; if we heard b., but later found out that Bill had built the house, we would still feel permitted to say cleverly here: No, it was Bill who built the house cleverly. However, if we learned that it was Bill who came home late, we would have to judge anew whether or not clever was appropriate. Also, clever, like stupid, or cruel, represents the speaker's judgment - it is not the case, as it was with anxious, that John is clever or not, independent of the values and opinions of the speaker. Thus, sentential cleverly is, in Jakobson's terms, P^nE^n/P^s, a relation which he calls mood, and quoting Vinogradov, characterizes as "reflecting the speaker's view P^s of the character of the connection between the action

E^n and the actor P^n or goal."

To summarize:

120.	Frankly	E^sP^s
	Probably	E^n
	Unfortunately	E^nP^s
	Anxiously	$E^nP^{n/ps}$
	Cleverly	E^nP^{n/p^s}

In recent treatments of adverbs (notably, Jackendoff[FN13]) these are all sentential (as opposed to manner, degree) adverbs. Even with subcategories "speaker-oriented" and "subject-oriented" we obviously cannot describe fine different kinds of adverbs that are "sentential". With the help of a little metaphoric extension, we can describe our intuitions about the meanings of these adverbs. In addition, this classification can serve as a basis for stating distributional properties of these adverbs.

The adverbs which contain the formula E^nP^n have related adjective and subjectless infinitive constructions:

121 John was { clever / anxious / *probable / *unfortunate / *frank } to leave.

Anxiously and cleverly are distinguishable in a number of ways. The norminalization of one, but not the other, can have an infinitive complement:

122 John's { anxiousness / eagerness / *cleverness } to leave
*

One, but not the other, can occur with infinitival subject:

123 It was { *eager / clever } of John to leave.

Notice that overeager can appear in this frame:

124. It was overeager of John to leave.

But overeager, unlike eager, involves a reference to the speaker's evaluation. Thus, claiming no explanatory force in so doing, we can ascribe these differences between eagerly and cleverly to the difference between E^nP^n and E^nP^n/P^s.

Another fact about P^s adverbs is that they are intonationally set apart (comma) from the rest of the clause:

125. a. Frankly,, Jchn left early.
b. *Probably,, John left early.
c. Unfortunately,, John left early.
d. Cleverly,, John left early.
e. ??Eagerly,, John left early.

At the end of a sentence, frankly, unfortunately, and cleverly are intonationally set off:

126. John left early{, frankly. / ,, unfortunately. / ,, cleverly.}

But eagerly is not:

127. *John left early,, eagerly.

Probably appears at the end of sentences set off, but I think with a special use:

128. John left early,, probably.

This sentence is not appropriately used to describe the probability of John's departure per se; its use seems most appropriate as an answer to a question such as,

129. a. Why is Mary so upset?
b. (John left early, probably).

Here, probably is not simply a function of E^n; it is a function of probably cause by E^n - it evaluates E^n as an answer to the question, and thus relates it to E^s. So probably here is E^nps as anticipated.

Thus, E^n adverbs appear with no IB, and E^s appear with IB.

We recall that because clauses could appear inside or outside the scope of negation, determined by IB. There are two distinct uses of because clauses (at least), one of which may be called "subject oriented" or P^n, which gives the motivation for someone's action:

130. John left because he was tired.

and another which gives the speaker's grounds for making an inference; which we may describe as "speaker oriented" or P^s:

131. John isn't here, because his car isn't here.

In the latter, X^s, case, the because clause follows the IB, and cannot appear under negation:

132. John isn't here because his car is gone.

(meaning - the absence of John's car does not entail his absence).

This is a general property of E^s items.

Footnotes to Chapter 4

1. Ross 1967 section 5.1.
2. Chomsky 1970.
3. Williams 1971.
4. Chomsky 1970.
5. Kuno and Robinson 1972.
6. Wasow 1972 chapter 4.
7. Bresnan 1972 p. 306.
8. Jackendoff 1972 chapter 7.
9. Ross 1967.
10. Higgins 1972.
11. Lakoff 1968.
12. Jakobson 1971. Morris Halle first suggested to me that shifters were involved here.

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Biography

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