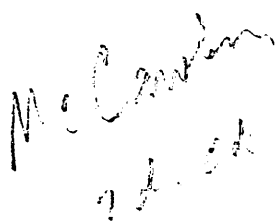
of the form *I suppose S* can't constitute an act of supposing S, the way that uttering a sentence of the form *I promise S* can constitute an act of promising S).

14. Actually, it could apply on the S_0 cycle as well, but then the "superstructure" would no longer be of the form that can be deleted, and *I don't suppose Harry supposed the Yankees would win, did he?* would result.

15. These examples are taken from or suggested by Bolinger (1978:88–90).

16. The suggested deep structure will have to be supplemented by something that will render Inversion applicable to the individual conjuncts: as things stand, Inversion should affect only S_1, not any of the lower Ss in (14).



CHAPTER FIFTEEN

Principles Restricting and Extending the Application of Transformations

a. Preliminaries

Beginning with Ross (1967a), a number of authors have proposed general restrictions on where the items involved in the application of a transformation can be in relation to one another in the structure to which the transformation applies. This chapter will be devoted to a survey of such restrictions.

Let us start by noting that transformations differ from one another with regard to the possible structural relations of the items involved in their application. At one extreme, we have V′-deletion, which is applicable virtually without regard to where the deleted V′ and the antecedent V′ occur relative to one another, just as long as the gap left by V′-deletion conforms to the general restrictions on anaphora, that is, it does not precede and c-command its antecedent and is not in an earlier conjunct of a coordinate structure:

(1) a. The person who said that Ford had won the election hadn't heard the news that Carter had ∅.
b. Fred was smoking a cigarette while Ethel was ∅.
b′. *Fred was ∅ while Ethel was smoking a cigarette.
c. Fred smokes cigarettes and Ethel does ∅ too.
c′. *Fred does ∅ and Ethel smokes cigarettes too.
d. I'm convinced that Fred smokes cigarettes. Someone told me recently that Ethel does ∅ too.

Note that the deleted V′ can even be in a separate sentence from the antecedent (1d). At the other extreme, we have such transformations as Quantifier-float, which detaches an *all, both,* or *each* from the determiner position of a subject NP and makes it a left sister of the V′, that is, the position into which it moves the quantifier must be a "first cousin" of the position from which it was moved:

(2) a. Both (of) the guests drank beer. →
The guests both drank beer.
*The guests drank both beer.
b. Stories about both (of) the guests soon appeared. ↛
*Stories about the guests both soon appeared.

Between these two extremes are such transformations as Wh-movement, which is **unbounded,** that is, the position from which the interrogative or relative expression is moved can be arbitrarily much deeper in the structure than

the position into which it is moved, though the latter position is required to c-command the former position:

(3) a. Which book did Sam say [that it was likely [that the governor would urge [that no one read ∅]]]?
b. *[That Sam asked [which chicken China is industrializing rapidly]] caused Ted to pluck ∅.

The first type of transformation appears to be limited to "free anaphora" rules: optional replacement of a repeated item by a pronoun or by zero. Such rules are exempt from several general constraints on the application of transformations, such as the **Coordinate Structure Constraint,** which requires that a transformation affecting a coordinate structure have the same effect on all the conjuncts of the coordinate structure (4), and the **Complex NP Constraint,** which excludes rule applications in which something outside of a "complex NP" (roughly, a NP consisting of a N, a S, and perhaps other material) affects something inside the S of the complex NP (5):

(4) a. ??Which gun did Sam fire ∅ and kill someone?
b. Sam refuses to fire a gun, because his father once did ∅ and killed someone.
(5) a. *Which beverage can't John stand [people who like ∅]?
b. People who like wine often can't stand [people who don't ∅].

This chapter is devoted to exploring the details of a number of such constraints and determining what classes of transformations are subject to them.

b. A Survey of Ross's Constraints

One constraint on the application of transformations has already been discussed in considerable detail here, namely, the Coordinate Structure Constraint. It will accordingly not be dealt with in this section, though we will return to it in §15c, where we will discuss the question of what exactly the class of rules is that the various constraints constrain.

Let us accordingly turn to a second constraint proposed by Ross, namely, the restriction that can be seen in the following examples:

(1) Wh-movement (interrogative)
a. What topics does Ruth like to read books about ∅?
a′. *What topics does Ruth like to read books that are about ∅?
b. How much did ABC News report that the Pentagon was paying ∅ for paper cups?
b′. *How much did ABC News report a rumor that the Pentagon was paying ∅ for paper cups?
(2) Wh-movement (relative)
a. the general that Peterson collected portraits of ∅
a′. *the general that Peterson collected paintings in which an artist depicted ∅
b. the man that we've heard that Louise is dating ∅
b′. *the man that we've heard the report that Louise is dating ∅

(3) Topicalization
a. Inflation, I've heard many theories about ∅.
a′. *Inflation, I've heard many theories that purport to explain ∅.
b. From the CIA, I assure you that I would never accept a penny ∅.
b′. *From the CIA, I have made a notarized statement that I would never accept a penny ∅.

In the asterisked examples in (1)–(3), a constituent has been extracted from a relative clause or from the S of an expression such as *rumor that S* or *report that S.* In either case the extraction moves something out of the S of a **complex NP:** a NP in which a S is dependent on the head N. The examples have been chosen to show that extraction out of a complement Comp′ (N.B.: no Det or N in addition to the Comp′), as in (1b, 2b, 3b), is generally not excluded (thus, the Det and/or N of the complex NP appear to be what prevents extraction out of its S), and likewise that extraction out of a NP in which Det and N are combined with less than a S (1a, 2a, 3a) is not excluded either. Ross's **Complex NP Constraint (CNPC)** states that derivational steps in which material is extracted from the S of a complex NP are excluded.

For many movement transformations, the question of their extracting something from a complex NP simply does not arise. These are the transformations (such as Quantifier-float) whose formulation requires the moved material and the place to which it moves to be in specific locations and thus excludes the possibility of the moved item being inside the S of a complex NP in the input of the transformation and outside the complex NP in the output. Thus, the fact that the structure underlying (4a) cannot be converted into (4b) by an application of Quantifier-float need not be attributed to the CNPC but can be taken simply as illustrating that Quantifier-float allows movement of the quantifier only from topmost position in a subject NP to position as adjunct of that NP's sister V′, as in (4b′):

(4) a. The report that all the students had passed the exam amazed the dean.
b. *The report that the students had passed the exam all amazed the dean.
b′. The report that [the students all had passed the exam] amazed the dean.

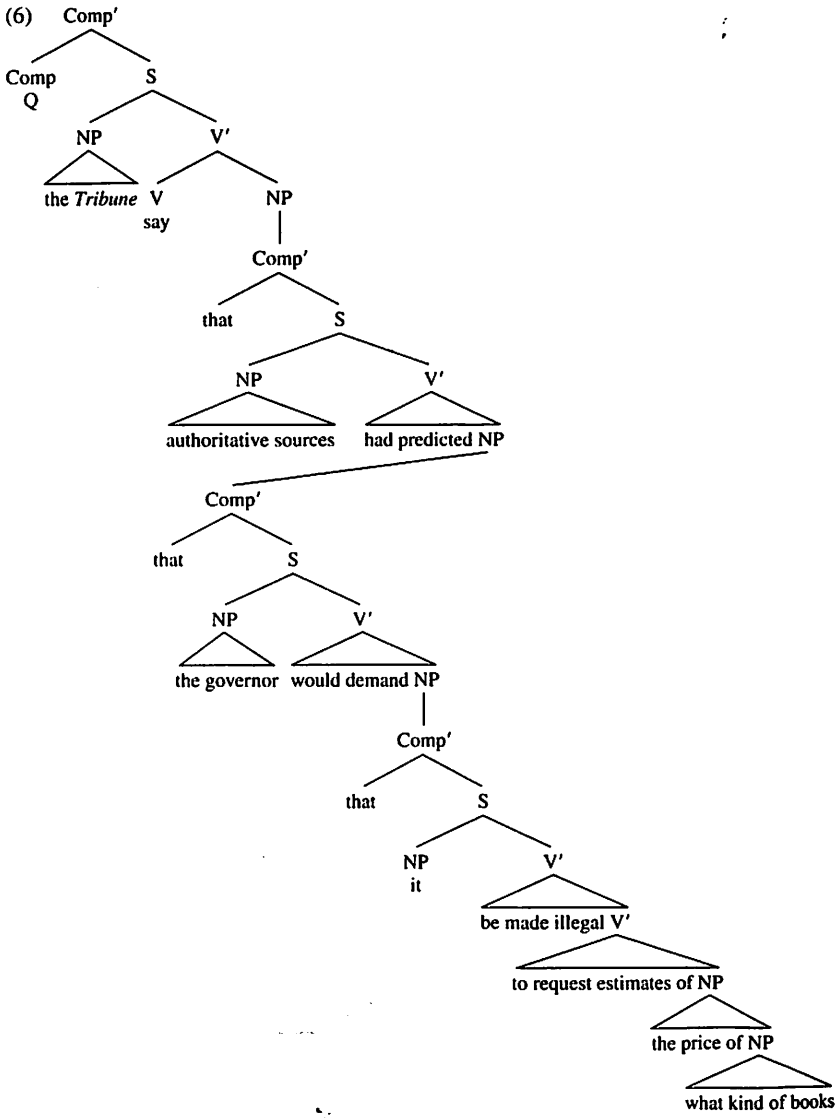
The transformations whose application is actually constrained by the CNPC are thus those that involve movement "over a variable," in the sense that Wh-movement and Topicalization allow movement not just from one particular location but from an open-ended range of locations, for example, the item that appears at the beginning of a Wh-question can be an object NP, an adverbial, the object of a preposition, or a broad range of parts of such constituents, including constituents contained in a complement S within the Wh-question:

(5) a. Which books did you read ∅?
b. When did you read the books ∅?
c. Which books did you ask Janet about ∅?
d. Which books did you request an estimate of the price of ∅?
e. Which books did Fred say that Laura had requested an estimate of the price of ∅?

f. What kind of books did the *Tribune* say that authoritative sources had predicted that the governor would demand that it be made illegal to request estimates of the price of ∅?

The extraction out of elements of complement Ss is indeed subject to no apparent limit on the depth from which the Wh-expression can be extracted, for example, in (5f) it is extracted from five Ss down:

(6)



It is thus not even possible to give a finite list of the positions from which the item can be extracted: there are infinitely many possible structural relations that the Wh-expression could have to the Q that it is to be moved to, since there is no limit to the depth that it could be embedded in relation to the Q.

In such cases, the transformation is said to involve an **unbounded variable.** This terminology alludes to the notational system widely used in the 1960s, in which Wh-movement might be given a formulation such as (7):

(7) Q X Wh Y
1 2 3 4 →
3 2 0 4

In this formulation, X and Y are "variables," in the sense of symbols that can in principle be matched to anything. X (strictly speaking, also Y) is unbounded in the sense that the range of things that could in fact be matched to it is open-ended: arbitrarily much linguistic structure could intervene between the Q and the Wh-expression.

Transformations involving unbounded variables are of particular importance in establishing constraints on the application of transformations, since with such transformations it will be relatively easy to identify constraints on their application as having some degree of generality rather than being part of the description of a specific syntactic configuration that the given transformation is applicable to.

There are a couple of classes of apparent complex NPs from whose Ss constituents can in fact be extracted fairly freely. One such class of cases was taken up briefly in §13d, namely, what were referred to there as pseudo-relative constructions, as in (8):

(8) a. You've been talking with a person that I've never met anyone who doesn't like ∅.
b. Boston, I have several friends who live near ∅.

I argued there that the apparent relative clause in such sentences is not part of the NP headed by the preceding noun. According to that conclusion, the underlined parts of (8) are not even constituents, let alone complex NPs, and thus the complex NP constraint does not exclude extraction out of the embedded S. A second class of cases is illustrated by examples such as (9):

(9) a. What company does Mike hold the absurd belief that he can get a job with ∅?
b. the senator that Jack Anderson made the claim that the Mafia wanted to rub out ∅
c. The CIA, I give you my assurance that I would never accept a penny ∅ from.

Ross describes such expressions as *make the claim* as having the meaning of a verb but distributing that meaning between a semantically "bleached" verb such as *make* or *give* and a noun that appears in direct object position and carries the bulk of the meaning of the understood verb (e.g., *claim*$_V$ *that S* = *make the claim*$_N$ *that S*). Ross, following Zellig Harris (1957:201), tentatively posited an underlying structure having the understood semantically complex verb with a sentential object (*claim that S*, etc.), thus no complex NP in deep

structure, and a transformation that converts that into *make the claim that S*, with processes such as Wh-movement applying to the former structure, that is, to a structure in which there is no complex NP. I find that specific proposal implausible, since it would require that the transformation creating *make the claim that S* or whatever be postcyclic (because Wh-movement applies to a larger domain and thus will apply after the latter transformation if the latter is not exempted from cyclic application), and it is quite unlike the postcyclic transformations that have been identified so far. The central idea in Ross's account of (9) seems right, though, namely, that the reason why apparent violations of the CNPC are permitted here is that **semantically** there is no complex NP. I conjecture accordingly that the relevant notion of "complex NP" is sensitive not just to the syntactic form of the constituent from which the item in question is extracted but also to the corresponding part of semantic constituent structure.

A third constraint proposed by Ross is the **Left Branch Constraint (LBC)**, which excludes extraction of or from the X of an [X Y] constituent, for example,

(10) a. *Whose did you steal [∅ money]?
a′. *Who did you steal [∅'s money]?
b. *How many did you buy [∅ sausages]?

The sentences that are excluded by the LBC generally have acceptable alternate forms in which additional material participates in the extraction (licensed by the pied-piping principle) and it is not just the "left branch" of, say, a NP that is moved but rather the whole NP:

(11) a. Whose money did you steal?
b. How many sausages did you buy?

While the CSC and CNPC may well apply to languages in general, the LBC is clearly not a language universal; English and many other languages conform to it, but there are also clear cases of languages (such as Russian) that do not conform to it (examples provided by Johanna Nichols):

(12) a. Č'i ty ukral den'gi? (= (11a))
whose-ACCpl you-NOMsg stole money-ACCpl
b. Skol'ko ty kupil sosisok? (= (11b))
How many you-NOMsg bought sausage-GENpl

A fourth constraint proposed by Ross is the **Sentential Subject Constraint (SSC)**, which excludes derivational steps that extract something from a sentential subject:

(13) a. *Which book did [that John had read ∅] surprise Ruth?
a′. Which book did it surprise Ruth that John had read ∅?
a″. Which book was Ruth surprised that John had read ∅?
b. *How many oysters would [for Alice to eat ∅] be vulgar?

b′. How many oysters would it be vulgar for Alice to eat ∅?
c. *How many oysters did [Alice's eating ∅] offend Wilbur?

The difference between (13a) and (13a′–a″) shows that it is not just any kind of complement but specifically a sentential **subject** from which extractions are excluded: a complement that has either been moved out of subject position (13a′) or was never in subject position to begin with (13a″) is not immune to extractions. This constraint, however, really constitutes a special case of the more general "Incomplete constituent constraint" of Kuno, discussed in §10c, which excludes surface structures involving a nonfinal incomplete constituent. Extraction from a constituent renders it incomplete, and sentential subjects are nonfinal in the relevant sense. Strictly speaking, there is a class of cases that would be taken in under the Sentential subject constraint but not under the Incomplete Constituent Constraint, namely, that in which a sentential subject appears in final position, as in the sort of inversion construction found in (14a); however, since that construction is fairly restricted in subordinate clauses anyway (i.e., that particular inversion is a root transformation, in the sense of §6d), it is not clear that violation of the Sentential Subject Constraint contributes anything to the unacceptability of examples like (14b):

(14) a. Being considered was whether we should hire Schwartz.
b. *the person who being considered was [whether we should hire ∅]

A further constraint relating to sentential subjects is proposed by Zaenen and Pinkham (1976) to account for contrasts in acceptability such as in (15):

(15) a. I am sure that for John to be promoted would bother everyone.
b. *I can't think of anyone who for John to be promoted would bother.

Note that according to the conclusions about constituent structure arrived at in chapters 5 and 13, *that* in (15a) and *who* in (15b) fit into the constituent structure in exactly the same way (both occupy the Comp position of a $[_{\text{Comp}'}$ Comp S] configuration), which means that the Internal S Constraint of §10c would not distinguish between the two examples and hence cannot be held responsible for the unacceptability of (15b). Moreover, Zaenen and Pinkham point out that while Dutch does not have the Internal S Constraint, Dutch analogs to (15a–b) still differ in acceptability the same way that these English sentences do. They suggest that the unacceptability of examples like (15b) is due to the extraction of *who* from a V′ whose subject is sentential and propose a constraint excluding such extractions in general. This **Postsentential Subject Extraction Constraint (PSSEC)**, as they call it, accounts for the unacceptability of the examples in (16):

(16) a. *I wonder who that John was promoted pleased ∅.
b. *Harry Smith, I'm sure that for John to be promoted would annoy ∅.

The same constraint is proposed independently by Iwakura (1976), who notes that it provides an account of the unacceptability of examples as in (17), which

(as was pointed out in §10c) appear to involve the same sort of deviance as do related examples that violate the Internal S Constraint (cf. **Is [that Smith will win] very likely?*) but whose embedded S is not "internal":

(17) a. *How likely is that Smith will win?
b. *How easy is to please your host?

An additional phenomenon that has sometimes been treated in terms of a constraint on the application of transformations and sometimes in terms of a constraint on surface structures is the restriction that excludes sentences in which the subject of a complement with an overt *that* complementizer is extracted:

(18) a. Who did you say (*that) ∅ had called me?
b. the man who Joan claimed (*that) ∅ had insulted her

Note that similar sentences with extraction of a nonsubject are acceptable even when there is an overt *that:*

(19) a. Who did you say that you had called ∅?
b. the man who Joan claimed that Mark had insulted ∅

The restriction noted here could be described as a constraint excluding a derivational step that extracts a subject from a complement that has a *that* complementizer. Alternatively, and more commonly, it has been described as a constraint excluding the surface structures that arise from such an extraction, that is, those in which a surface S consists of *that* and a V′.[1]

Let us see whether the phenomenon is as specific as this description suggests, that is, does the same constraint apply to extractions of subjects of complements with other overt complementizers? The case of *for-to* complements is complicated somewhat by the existence of a rule that deletes *for* when the complement subject is deleted or extracted. Thus, the examples in (20) might be unacceptable simply because the *for* is required to be deleted:

(20) a. *Which applicant would you like for ∅ to get the job?
b. *the team that Oscar hopes for ∅ to win the World Series

However, deleting the *for* does not always yield completely acceptable results:

(21) a. Which applicant would you like ∅ to get the job?
b. ??the team that Oscar hopes ∅ to win the World Series

The acceptability of (21a) in fact tells us nothing about extraction from *for-to* complements, since *like* allows omission of *for* irrespective of whether there is any extraction from the complement. *Hope* does not (**I hope the Yankees to win the Series*), and deletion of *for* does not greatly increase acceptability of the examples with extracted complement subject; thus the constraint at issue seems to be needed in order to account for the oddity of (20b). One complementizer that is never omitted is *whether.* Extraction of the subject of a *whether* complement results in considerably more than the mild deviance of examples in which a nonsubject is extracted:

(22) a. *Which student did you wonder whether ∅ failed the exam?
a′. ?Which student did you wonder whether Smith gave low grades to ∅?

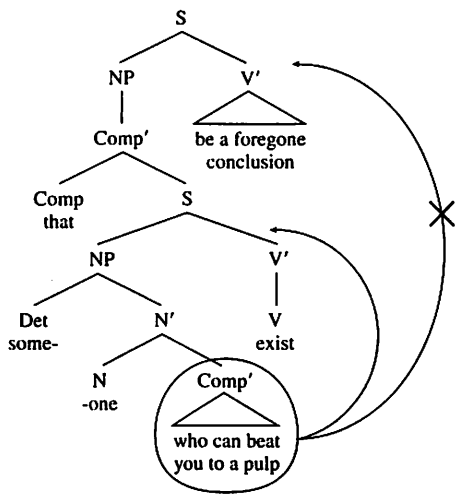
This provides additional evidence that a constraint on extraction of subjects from Ss with nonzero complementizers exists, perhaps in addition to a constraint against the surface configuration [Comp [$_S$ V′]] that results from such an extraction.[2]

The movement transformations that have been taken up so far in this section have moved something into a Comp position or into a "topic" position. While those transformations are unbounded, there are other sorts of movement transformations that appear to be bounded, for example,

(23) Extraposition
a. That it is impossible for pigs to fly is clear.
a′. *That it is impossible is clear for pigs to fly.
(24) Extraposition of relative clauses
a. That someone exists who can beat you to a pulp is a foregone conclusion.
a′. *That someone exists is a foregone conclusion who can beat you to a pulp.
(25) Heavy-constituent shift
a. That John sent to his mother the money you wanted him to give us is understandable.
a′. *That John sent to his mother is understandable the money you wanted him to give us.

In each of these three cases the moved constituent moves to the end of the S of which it is an immediate constituent, not to the end of any higher S.[3]

(26)

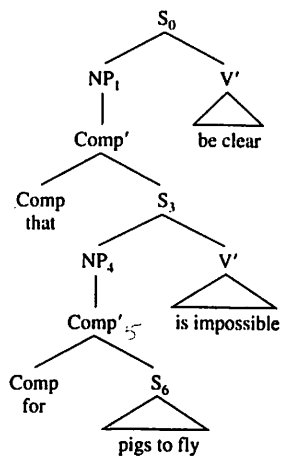


These transformations have two things in common, either of which might be held responsible for the difference between them and the unbounded transformations taken up earlier: (i) they involve movements to the right, whereas the

unbounded movements were to the left, and (ii) the unbounded movements had a specific target that might be in a higher S (the Comp position at the beginning of a question or a relative clause, the topic position of the sentence that supports the topic) whereas these transformations have at most a negative target: they serve not to put the moved material in a position that is part of some syntactic construction but rather to get material out of a position in which it might be "in the way" (by being either an internal S or a heavy constituent that would otherwise be followed by "light" constituents). It is the former factor to which Ross (1967a) attributed the oddity of (23a′, 24a′, 25a′): he formulated his **Right Roof Constraint (RRC)** as excluding derivational steps in which a constituent is moved rightwards past the boundary of the S of which it is an immediate constituent. Following Langacker (1974b:644), I in fact regard the second of the above factors as a more plausible bearer of responsibility for this difference but have no firm conclusion in this regard; see Kaufman 1974 for a possible counterexample (involving Navajo relative clauses) to the claim that rightward movements are always bounded.

Chomsky (1973) proposed some additional constraints on transformations (and on the semantic interpretation rules that had supplanted many transformations in Chomsky's work). One that has been particularly influential is also worth discussion because of its relationship to the RRC, namely the **Subjacency Condition,** which says that any two elements involved in the application of a rule (either a transformation or a semantic interpretation rule) cannot be separated structurally by more than one S or NP node, and thus that all transformations are bounded, a point to which I will return shortly. Provided one is careful about identifying what are Ss and what are NPs, one can show that the derivational steps ruled out by the RRC are also ruled out by the Subjacency Condition. Consider, for example, extraposition of complements, as in (23). The derivational stage that would be relevant to the application of Extraposition in (23) would be roughly as in (27):

(27)



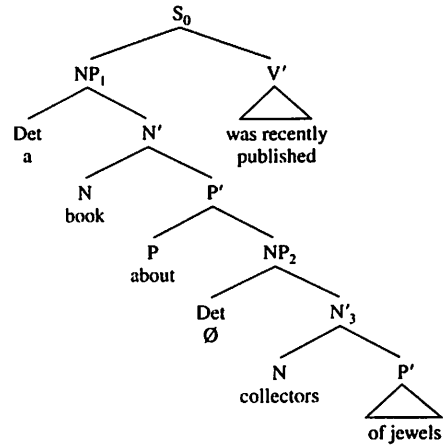
We must allow an application of Extraposition that puts $Comp'_5$ at the end of S_3 but not one that puts it at the end of S_0. Since $Comp'_5$ is an immediate constituent of NP_4, which is in turn an immediate constituent of S_3, the Subjacency Condition does not allow $Comp'_5$ to move to any position outside of S_3, though it does not exclude its moving to a position within S_3. But this is exactly what we want.

The Subjacency Condition also correctly excludes certain derivational steps that the RRC does not rule out. Recall (§12a) that a P′ within a larger P′ cannot be extraposed:

(28) a. A book about collectors of jewels was recently published.
b. *A book about collectors was recently published of jewels.
b′. A book was recently published about collectors of jewels.

Since the surface constituent structure of (28a) is as in (29), and NP_1 intervenes between NP_2 and S_0, the Subjacency Condition only allows P'_3 to be extraposed to a position in NP_1, not to a position outside of it, as in (28b):

(29)



For the same reason, extraposition of a relative clause from within a P′ is excluded:

(30) a. The execution of the man who shot Smith has been delayed.
b. *The execution of the man has been delayed who shot Smith.

The Subjacency Condition, in the full generality that Chomsky ascribes to it, is inconsistent with the treatments of Wh-movement argued for in chapters 13 and 14, in which the relative or interrogative pronoun moves arbitrarily far up the structure in a single step. Chomsky reconciled the Subjacency Condition with the apparent unboundedness of Wh-movement by adopting analyses in which relative and interrogative pronouns move one S at a time, via all the intervening Comp nodes. I find such an account of Wh-movement implausible

in view of the fact that it requires that Wh-movement be applicable even in domains that do not contain the prima facie conditioning factors for its application (such as the indexed Qs that were posited in §14b). In addition, there is no apparent way to reconcile that treatment of Wh-movement with examples such as (5f), in which *which kind of books* would have to cross two NP nodes as well as a S node in order to reach the lowest Comp position, thus violating Subjacency (cf. the structure in (6)).

Part of Chomsky's motivation for accepting the "Comp-to-Comp" bounded version of Wh-movement was the possibility that it opened up of subsuming Ross's movement constraints under the Subjacency Condition. For example, Chomsky holds violations of the CNPC such as (1a′) to be excluded because of a violation of Subjacency: since the only Comp position between the deep structure position of *what topics* in (1a′) and its eventual surface position is the one occupied by *that* in *books that are about,* it would have to move first to that position and from there to its surface position; but the second of these steps would violate Subjacency, since there are both a NP node and a S node separating those two positions: [Q [$_S$ . . . [$_{NP}$ books [$_{Comp'}$ that . . .]]]]. Whether Ross's constraints can in fact be made to follow from Subjacency depends on what exactly is subject to them and on whether all unbounded transformations that are subject to them can be reinterpreted as iterated application of bounded transformations, as in Chomsky's reinterpretation of Wh-movement; we will see in the following section that there are unbounded deletion transformations that are subject to the CNPC and other Ross constraints, and attempts to derive these instances of the Ross constraints from Subjacency have, in my opinion, been failures.[4] If the Ross constraints are to follow from Subjacency in the manner that Chomsky proposes, then all ostensibly unbounded phenomena to which those constraints apply have to be treated as reflecting bounded movements into Comp positions. Accordingly, authors such as Huang (1982), dealing with languages such as Chinese that exhibit no Wh-movement (i.e., interrogative expressions appear in the same surface positions as do corresponding noninterrogative expressions) but whose interrogative sentences appear to be subject to the Ross constraints, as in a Chinese counterpart (31a) to **What was the man who stole Ø caught?,* have posited Chomsky-style Wh-movement not as part of the syntax but as part of the rules relating sentences to their logical forms, in this case, relating the given sentence to a logical form such as (31b) in which an interrogative operator applies to a sentence containing a variable that it binds:

(31) a. *[[tou-le sheme] de neige ren] bei dai-le?
steal-Pfv what Gen that person Pass catch-Pfv
b. (what)$_x$ [Unspec caught the man [who stole x]]

According to Huang, it is the Subjacency Condition that excludes (31a): the logical form would have to be derived by moving *sheme* 'what' via intervening

Comp positions into the Comp of the S that is its scope, and the step that moves it out of the relative clause would have to cross both a NP node and a S node, violating Subjacency. However, the parallelism between Wh-movement and the association of a logical operator with its scope is illusory: the positions that operators occupy in logical structure are not Comp positions (for starters, quantifiers and other operators can be stacked to arbitrary depths above a S, as in the logical structure of *When did each candidate make a speech,* where there are three operators, each with a S as its scope, but there is only one Comp position). Chomsky's program of deriving the Ross constraints from Subjacency thus forces one to take Comp positions as providing the possible scopes of logical operators, when there often are in fact more possible scopes than there are Comp positions. In addition, Wh-operators often contain much less material than does the corresponding Wh-expression, as in (32a), whose logical form is roughly (32b):

(32) a. Whose mother did Bill insult Ø?
b. (which person)$_x$ [Bill insulted x's mother].

This casts further doubt on the identification of Wh-movement and the assignment of scopes to interrogative operators.

I accordingly regard the Subjacency Condition as viable only if Wh-movement and the other unbounded transformations are exempted from it rather than (as in Chomsky's proposals) assimilated to it. By excluding those transformations from the purview of the Subjacency Condition, I in effect identify it with Langacker's version of the RRC, except that the relevant "roofs" are not just S nodes but both S and NP nodes: a constituent cannot move to a position that is structurally separated from it by more than one S or NP node unless the position that it moves to is a target (such as a Q with an appropriate index, in the case of interrogative Wh-movement) to which the moved constituent is "attracted."[5] Concomitantly, I reject Chomsky's purported reduction of the CNPC and CSC to Subjacency.

c. Islands; Generality of the Constraints

The various constraints discussed in §15b all have the effect of "isolating" one part of a syntactic structure from the rest of the structure, in the sense that movement of material out of the one part of the structure and into some other part is excluded. (Later in this section, we will take up the question of whether this isolation of one part of the structure is more general than just this constraint on movement, e.g., whether other kinds of interaction between material inside and material outside the given part of the structure are also excluded.) For example, the CNPC says that the Comp′ of a [Det N Comp′] combination is "isolated" from the rest of the sentence in which it occurs. Ross introduced the term **island** to refer to a part of a sentence that is isolated from the rest of the sentence, in the sense that this section will attempt to clarify.

Hitherto, we have discussed Ross's constraints solely in connection with movement transformations. Let us now consider whether the parts of a sentence that are isolated with regard to movement transformations are also isolated with regard to other types of transformations. Once again, to be sure that a general constraint is responsible for the anomaly of various examples, rather than just a restriction on the configuration to which a particular transformation operates, it will be of particular importance to consider transformations that "operate over a variable," that is, transformations which do not require that the elements involved in the application of the transformation stand in one fixed structural relation to one another but rather allow its application in an open-ended class of cases, where, in particular, relevant elements can be arbitrarily many Ss higher or lower in the structure than other relevant elements.

Besides movement transformations, there are at least four gross types of transformations that seem to include particular rules that operate over a variable. (i) An example of an unbounded deletion transformation is the one that deletes the compared element of a *than*-clause under identity with the compared element of the host S (to be discussed in chap. 20). The deleted constituent can be arbitrarily deep in the *than*-clause.

(1) a. Fred sang more songs than I remember your brother singing ∅.
b. Frank sang more songs than I would have thought that it might turn out that a physics student would be able to sing ∅.

Actually, two kinds of deletion transformations need to be distinguished. Besides deletions of constituents, as in (i), there are also what might be called (ii) **Reductions,** in which a constituent is reduced to one of its parts, that is, one of its parts (one that contrasts with a counterpart in an antecedent constituent) is retained and the rest of it is deleted. We have already seen two reductions (Gapping and Stripping), and a third (Comparative Stripping, as in *Fred sang more songs than your brother*) will be discussed in chapter 20. Since there are three constituents involved in reduction transformations, there is more than one structural relation whose bounded or unbounded character we need to consider: the relation between the constituent that is reduced and the part to which it is reduced, and the relation between the constituent that is to be reduced and the antecedent. For all three of these transformations, the first relation is unbounded (i.e., a constituent can be reduced to one that is arbitrarily deeply embedded in it), while the second relation is bounded (for Gapping and Stripping, the antecedent must be conjoined with the constituent that undergoes reduction, and in the treatment of comparative constructions that will be argued for in chap. 20, the *than*- clause is an underlying adjunct of the S that provides the antecedent for Comparative Stripping):

(2) a. Mary submits poems to magazines, but not short stories.
a'. Mary asks her friends to urge editors to publish her poems, but not her short stories.
b. *Mary submits poems to magazines, but her friends all think that short stories.

In (2a'), *but not her short stories* can be interpreted as a reduction of *but she doesn't ask her friends to urge editors to publish her short stories;* in (2b), the intended antecedent *Mary submits poems to magazines* is not conjoined with *she submits short stories to magazines,* and Stripping is not allowed to reduce the latter to the contrasting constituent *short stories.*

(iii) There are also copying transformations such as **Left Dislocation,** which puts a copy of a NP at the beginning of a S and replaces the original by the corresponding personal pronoun. The copied constituent can be arbitrarily deep in the sentence:

(3) a. Your brother, I don't think there's much chance that anyone would be so stupid as to pick a fight with him.
b. Reagan, I wouldn't trust anyone who goes around trying to convince people to vote for him.

(iv) In a change transformation, one element changes its form under the influence of another. For example, the *Some→any* transformation, to be discussed in §17a, replaces a *some* by *any* if it is commanded by a negation. The negation can be arbitrarily much higher in the structure than the affected *some.*

(4) a. John doesn't think it's likely that any college will accept him.
b. Many people won't admit that they recognize the possibility that there is a chance that they have forgotten anything.

A fifth type of transformation, namely insertion transformations such as *Do*-support, is, as far as I know, always bounded. Before leaving this typology of transformations, I should mention an important equivocation that I have made in using the term "movement" transformation: "movement" could refer either to a change in where an item is in the constituent structure or a change in where it is in the linear order of constituents, and neither of these two classes of "movement" includes everything that is taken in by the other; for example, extraposition of relative clauses changes constituent order without changing constituent structure. It is sometimes unclear which class of transformations a given rule should be taken to belong to; for example, while RNR does not change constituent structure, it is not clear whether it should be regarded as changing constituent order: the fused shared constituent remains adjacent to its neighbors in the final conjunct but ceases to be adjacent to its neighbors in the earlier conjuncts. In any event, RNR seems not to be subject to any of the constraints discussed in this chapter.

Taking deletion of compared constituents, Left Dislocation, and *Some→any* as typical of unbounded deletion, copying, and change transformations, respectively, let us construct examples to determine which, if any, of them conform to the Ross constraints on movement. (The corresponding question about reduction transformations is left as an exercise to the reader.) The examples in (5) provide evidence that deletion of compared constituents **does** respect both the CSC and the CNPC.

(5) a. They have more applicants than I would expect that (*they're going to open a new factory and) they have ∅ jobs.
a′. The linguistics department had more applicants than the university has ∅ fellowships or the housing office has ∅ rooms.
b. Tom owns more jackets than I have just met ??a/*the man who owns.
b′. ??George is fatter than someone is spreading a rumor that Tom is ∅.

Left dislocation, by contrast, does not respect the CSC or the CNPC. Neither the coordinate V′ of (6a) nor the complex NP of (6b) poses any obstacle to its application:

(6) a. Your brother, someone yelled obscenities at him and ran away.
b. Your brother, I've just been talking to a woman who says she beat him at arm wrestling.

It is easy to construct examples showing that *Some→any* can apply into complex NPs with an indefinite article (including the zero plural indefinite article) but not complex NPs with a definite article:

(7) a. I've never read a/*the book by Chomsky that anyone wanted to nominate for a Pulitzer Prize.
a′. With a voice like yours, you shouldn't sing songs that contain any high Cs.

Making up examples to test whether it conforms to the CSC is complicated by the fact that negation interacts with the selection of *and* or *or* as the conjunction. While one might offer examples like (8a) as evidence that *Some→any* obeys the CSC, that conclusion is premature, since across-the-board *Some→any*, which ought then to be possible, is even worse (8b):

(8) a. ??I didn't say that [Fred had quit and anyone that you know had been named his replacement].
a′. *I didn't say that anyone had quit and anyone had been hired. (as negation of "I said that someone had quit and someone had been hired")

By contrast, when the conjunction is *or, Some→any* can apply irrespective of whether its effect is in one conjunct or both:

(9) a. I didn't ask Fred to make punch or buy any beer.
a′. I didn't say that anyone had quit or anyone had been hired.

Seuren (1974b) and LeGrand (1974) have proposed that when Conjunction Reduction applies to negative Ss conjoined by *and,* the *and* is converted into *or;* according to that proposal, (9a) could be given the same deep structure as *I didn't ask Fred to make punch and I didn't ask him to buy any beer,* in which case the CSC would be irrelevant to examples as in (9): *Some→any* would be applying in the individual conjuncts, not in a structure in which a coordinate structure was in the scope of a negation. Thus, to test whether the CSC constrains the application of *Some→any*, it is necessary to construct examples

that could not be derived from a structure such as Seuren and LeGrand proposed for examples as in (9), and in the examples that I have constructed, it doesn't seem to matter much whether *Some→any* affects all or only one of the conjuncts:

(10) a. *I didn't ask Mary to bring any beer but bring a pitcher of lemonade too.
a′. *I didn't ask Mary to bring any beer but bring any soft drinks too.
b. ?I wouldn't have thought that Franz Schubert and any librettist would have collaborated on such a worthless project.
b′. I wouldn't have thought that any composer and any librettist would have collaborated on such a worthless project.

I thus know of no clear cases in which the CSC can be held responsible for the behavior of instances of *some* in coordinate structures.

This minuscule body of facts suggests that **Comparative Deletion** (and, perhaps, deletion transformations in general) is subject to the Ross constraints, and that Left Dislocation and perhaps *Some→any* (perhaps, copying and change transformations in general) are not subject to them.

While not strictly speaking taken in under Ross's conception of "island," one other thing to which the term "island" has sometimes been applied should be at least mentioned here. Postal (1969) has argued that anaphoric relations between a part of a (morphologically or semantically) complex N, V, or A and anything outside the N, V, or A are systematically excluded, and has accordingly spoken of Ns, Vs, and As as **anaphoric islands.** For example, while the anaphoric relations in (11a, b, c) are normal, if an expression containing the antecedent of an AD is replaced by a single word that it paraphrases, thus creating an anaphoric relation between a semantic or morphological part of the word and something outside of the word, the result is usually deviant.

(11) a. A child whose parents are dead usually misses them.
a′. *An orphan usually misses them.
b. Most people who eat artichokes buy a lot of them.
b.′ ?Most artichoke-eaters buy a lot of them.
c. Many people who work often do so unwillingly.
c′. ??Many workers often do so unwillingly.

Though anaphoric relations between semantic constituents of a word and constituents outside the word are generally completely unacceptable (e.g., (11a′)), relations involving morphological constituents of a word are often sufficiently normal that it is not rare for them to be produced spontaneously, though morphological relatedness is far from a sufficient condition for the acceptability of the forms in question:

(12) a. I won't reply to your comments, since they don't require one (= a reply).
b. *Fred hates to cook, so he's hired one (= a cook).

There is an important class of cases in which a morphological constituent that by Postal's anaphoric island principle is prevented from standing in an anaphoric relation per se can nonetheless participate in another kind of syntactic relation. Specifically, Postal points out that the proper name that is a morphological constituent of such **pseudo-adjectives** (Postal's term) as *American* and *Japanese* can serve as the controller for Equi-NP-deletion (13a) even though it is still not available as the antecedent of a pronoun (13b):

(13) a. An American attempt [∅ to invade Cuba] has been expected for years.
b. *Any American attempt to invade Cuba would generate support for its/her enemies.

d. Parasitic Gaps

Sentences as in (1) involve two gaps that correspond to a single moved item (examples from Ross 1967a and Engdahl 1983):

(1) a. Which articles$_i$ did John file ∅$_i$ without reading ∅$_i$?
b. The curtain which$_i$ Fred tore ∅$_i$ in rolling ∅$_i$ up was a gift from my Aunt Priscilla.
c. These papers$_i$ were hard for us to file ∅$_i$ without first reading ∅$_i$.

However, these double gaps are quite different from those that result from across-the-board application of a movement rule, where the gaps are in different conjuncts of a coordinate structure (unlike (1), where there is no coordination) and every conjunct is required to have a gap (2):

(2) a. Which articles$_i$ did John file ∅$_i$ but not read ∅$_i$/*them$_i$?
b. This book$_i$ is easy to read ∅$_i$ and write a report on ∅$_i$/*it$_i$.

By contrast, the sentences in (1) have counterparts in which there is only a single gap (3):

(3) a. Which articles$_i$ did John file ∅$_i$ without reading them$_i$?
b. The curtain which$_i$ Fred tore ∅$_i$ in rolling it$_i$ up was a gift from my Aunt Priscilla.
c. These papers$_i$ were hard for us to file ∅$_i$ without first reading them$_i$.

Note, though, that if there is only a single gap, it has to be the one indicated in (3) and not the other one:

(4) a. *Which articles$_i$ did John file them$_i$ without reading ∅$_i$?
b. *The curtain which$_i$ Fred tore it$_i$ in rolling ∅$_i$ up was a gift from my Aunt Priscilla.
c. *These papers$_i$ were hard for us to file them$_i$ without first reading ∅$_i$.

It is because of this asymmetry between the gaps in sentences as in (1) that Taraldsen (1980) chose to speak of one gap as being **parasitic** on the other: the examples in (3) have a gap such as would result from ordinary Wh-movement or *Tough*-movement, and those in (1) have an additional gap that is parasitic

on the "normal" gap and in many cases (as in (4)) not possible unless there is also a corresponding normal gap.

In the examples in (1), the normal gap precedes the parasitic gap. However, there are also instances in which a parasitic gap precedes the normal gap that licenses it (examples adapted from Engdahl 1983):

(5) a. Which boy$_i$ did Mary's talking to ∅$_i$ bother ∅$_i$ the most?
a′. Which boy$_i$ did Mary's talking to Roger bother ∅$_i$ the most?
a″. ??Which boy$_i$ did Mary's talking to ∅$_i$ bother Angela the most?
b. This is a book$_i$ that no one who has read ∅$_i$ would give ∅$_i$ to his mother.
b′. This is a book$_i$ that no one who has read *Portnoy's Complaint* would give ∅$_i$ to his mother.
b″. *This is a book$_i$ that no one who has read ∅$_i$ would give flowers to his mother.

To avoid an extraneous factor that would otherwise lower the acceptability of (5a′, b′), these examples have been chosen in a way that makes them different from the examples relating to "forwards" parasitic gaps given in (3)–(4), namely that the gap has been replaced not by a pronoun having the same reference as the gap but by a full NP differing in reference. The reason for the change is that with a pronoun in the position in question, the examples would exhibit the **weak crossover** phenomenon (Postal 1971), in which, under conditions that will not be stated here, the acceptability of a sentence is lowered if a moved item "crosses" an AD of which it is the antecedent, as where *which boy* "crosses over" *him* in the step of the derivation of (6a) in which Wh-movement applies to a structure roughly as in (6b):

(6) a. ??Which boy$_i$ did Mary's talking to him$_i$ bother ∅$_i$ the most?
b. Q [[Mary's talking to him$_i$] bothered which boy$_i$ the most]

One remarkable characteristic of (5a) that should be noted is that even though (5a″) violates the SSC and (5a) has gaps in the positions where (5a″) has them, (5a) does not exhibit the lowered acceptability that (5a″) does; the SSC thus apparently applies only to the "primary" gap that an extraction yields and not to a parasitic gap.

It must indeed be a **gap** that licenses a parasitic gap. For example, in declarative analogs to the earlier interrogative examples, the counterpart of the Wh-expression does not license a parasitic gap (not even in an answer to a question that contains one!), and in multiple-Wh questions, there can be a parasitic gap corresponding to the moved Wh-expression, but not one corresponding to a Wh-expression that remains in situ:

(7) a. He filed those articles by Chomsky without reading them/*∅.
b. Which compositions$_i$ did Ralph tell which students$_j$ to study the scores of ∅$_i$ before listening to recordings of ∅$_i$?
b′. Which compositions$_i$ did Ralph tell which students$_j$ to study the scores of ∅$_i$ after correcting exercises by them$_j$/*∅$_j$?

It appears to be only the gaps created by movement rules and not also by deletion rules that can license parasitic gaps; for example, the gap left by deletion of a compared element or by Super-Equi does not license a parasitic gap:

(8) a. *John drinks as much coffee as Mary drinks ∅ whenever Bill drinks ∅.
a′. John drinks as much coffee as Mary drinks ∅ whenever Bill drinks that much coffee.
b. John$_i$ hinted [that it was likely [that [∅$_i$ buying himself a new hat] would prove beneficial to him$_i$/*∅$_i$]].

In the examples given so far, the gaps that license parasitic gaps are created by Wh-movement and *Tough*-movement. Some other movement rules that can give rise to parasitic gaps are Topicalization and Heavy Constituent Shift:

(9) a. Several$_i$ of the reports John filed ∅$_i$ without reading$_i$ ∅$_i$.
b. John threw ∅$_i$ in the wastebasket without even showing ∅$_i$ to his assistant any reports$_i$ that were full of statistics.

Some that cannot are Passive and Raising:

(10) a. John$_i$ was arrested ∅$_i$ by the police before Mary could find him$_i$/*∅$_i$.
b. We believe John$_i$ [∅$_i$ to have read the letter before we ran into him$_i$/*∅$_i$].
b′. John$_i$ seems [∅$_i$ to have read the letter before we ran into him$_i$/*∅$_i$].

If it were not for HCS, we could offer the generalization that unbounded movements can give rise to parasitic gaps while bounded movements cannot. However, the status of HCS as a bounded transformation has in fact been disputed by Andrews (1975:112–13) and Gazdar (1981:176–77). Andrews notes that the examples commonly given in arguing that HCS is bounded can be excluded on other grounds (e.g., (11a) violates the Sentential Subject Constraint) and that examples where there is long-distance HCS but no violation of the Sentential Subject Constraint are only mildly odd (11b); indeed, some such examples (such as (11c), taken from Witten 1972) sound perfectly normal:

(11) a. *[That Alice was asked ∅ by the manager] is outrageous to resign.
b. ?Bill said that it would be difficult in his memorandum to get the project funded.
c. I have wanted to know for many years exactly what happened to Rosa Luxemburg.

I will accordingly tentatively retract my previous claim that HCS is bounded and take unbounded movements to be precisely the transformations that yield gaps which can license parasitic gaps.

The possibility of a parasitic gap also depends on where it is in relation to the gap that licenses it. For example, syntactic constructions that normally allow parasitic gaps often do not allow them when the "normal" gap is a subject (Engdahl 1983, Sag 1983, and Chomsky 1986):

(12) a. Who$_i$ [∅$_i$ left before you could say goodbye to him$_i$/*∅$_i$]?
a′. Which guest$_i$ did Karen say ∅$_i$ had left before she could say goodbye to him$_i$/*∅$_i$?

Subject gaps nonetheless do sometimes license parasitic gaps:

(13) Which officials$_i$ did Antony imply ∅$_i$ were murderers while ostensibly praising ∅$_i$?

Note, however, a difference in the constituent structure between (13) and (12a′): in (12a′) the adverbial clause containing the parasitic gap modifies the complement S (thus, the S whose subject provides the normal gap), while in (13) it modifies the main S, whose subject is not the source of the normal gap.

Engdahl accordingly proposes the generalization that a normal gap cannot license a parasitic gap that it c-commands. This generalization correctly excludes the Raising examples (10b, b′: ∅), in which the subject gap c-commands everything in the adverbial adjunct. Passive sentences such as (10a: ∅) are not subsumed under that generalization, but they are excluded for a different reason, namely that the domain to which Passive applies does not contain the adverbial adjunct (*before Mary could find him* is an underlying S-modifier), and thus, if parasitic gaps are a side effect of the application of a movement transformation, the transformation here applies to a constituent that does not contain any potential source of a parasitic gap. A restriction excluding parasitic gaps that are c-commanded by the corresponding primary gap implies that an object gap should not be able to license a parasitic gap in the same V′ but a gap within an object should, which is in fact the case:

(14) a. *the slave who$_i$ the emperor gave ∅$_i$ to a relative of ∅$_i$
a′. ?the slave who$_i$ the emperor told a story about ∅$_i$ to a relative of ∅$_i$

Why would parasitic gaps be subject to such a condition? Engdahl (1983) suggests, within a framework quite different from that of this book, an answer in terms of the conditions for obligatoriness of pronominalization (cf. §11d). In the cases where parasitic gaps are excluded, the parasitic gap is in a position where a NP that is coreferential with a NP in the position of the "normal" gap would have to be a pronoun with the latter as its antecedent:

(15) a. John$_i$ left before I could say goodbye to him$_i$/*John$_i$.
b. The emperor gave Didius$_i$ to a relative of his$_i$/??Didius$_i$.

That would amount to a restriction excluding "obligatory pronouns" from being turned into parasitic gaps; such a hypothesis would add substance to the notion of "obligatory pronominalization," since it would rule out not only "full" NPs in the cases in question but also a type of empty constituent that in many cases is virtually interchangeable with a pronoun.[6]

EXERCISES

1. Use the CSC to determine whether each of the following is a coordinate structure:

   a. S_1 but S_2
   b. S_1 unless S_2
   c. S_1 so S_2 (e.g., *There was no beer left, so I bought some more*)
   d. from NP_1 to NP_2 (as in *This road runs from Boston to Albany*)
   e. The A-er S_1, the A-er S_2 (*The more cigarettes Sam smokes, the sicker he gets*)

2. Determine whether each of the following transformations is bounded:

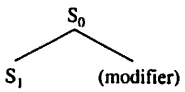
   a. Super-Equi
   b. Preposing of A′ in *though*-clauses, as in *Fond of his children though John is, he never gives them presents.*
   c. *Tough*-movement
   d. The movement of P's that was discussed in chap. 11 in connection with such examples as *Near him, John saw a snake.*
   e. Conjunction reduction

3. Pick any two of the Ross constraints on transformations and determine whether each of the transformations in exercise 2 conforms to them.
4. Make up appropriate examples to determine whether:

   a. the *respectively* construction is subject to the CNPC.
   b. Gapping is subject to any restriction that might be interpreted as an instance of the CNPC.

(N.B.: Since it is not immediately obvious how the CNPC might apply to these transformations, your task is to find cases where their application might be affected by whether something is inside a complex NP; if the statement of the CNPC in chap. 15 requires minor alteration to make it relevant here, say how it might be restated.)

5. In multiple-Wh questions (e.g., *What did John say to whom?*), only one of the interrogative expressions moves. Determine whether the interrogative expression that **does not** move obeys any of the Ross constraints.
6. The discussion of the Right Roof Constraint in §15b did not make clear how it applies to a S involving a S-modifier, i.e., whether in a structure of the following form the constraint allows material from S_1 to be moved to the end of S_0 (thus, placed after the modifier) or only allows it to be moved to a position within S_1:



Make up examples to test which of these two interpretations should be placed on the constraint. In doing so, take account of the difficulty of telling whether a S-final constituent is a S-modifier or a V′-modifier in surface structure, i.e., try to choose your examples so that it has to be taken to be a surface S-modifier.

7. a. In the discussion of the CNPC, no account was taken of what the determiner of the NP was. Make up examples that will test whether the difference between *the* and *a* makes any difference in the extent to which violations of the CNPC are unacceptable.

b. Make up examples that will show whether a NP that contains a reduced nonfinite S (e.g., *a way of reducing inflation; an attempt to victimize us; a reason for moving to the south*) should count as a complex NP for the purposes of the CNPC.

8. The examples given to show that HCS is unbounded did not involve movement of the heavy constituent very far out of its S. Construct examples that will test how far HCS can move an item, and formulate any generalizations that seem to emerge.
9. The following example appears at first to be a counterexample to the Left Branch Constraint:

   How many did you buy of the sausages?

Show how it can be analyzed so as not to conflict with the condition.

10. Languages (like English) in which a relative clause follows its head commonly allow extraposition of relative clauses, while languages (like Chinese and Japanese) in which relative clauses precede the head never allow extraposition of relative clauses. Which of Ross's constraints could be held to be violated by extraposition of relative clauses in the latter but not the former languages? Make clear how the relevant notions would need to be interpreted in order for extraposition of relative clauses to violate that constraint in languages like Chinese.
11. For each of the following sentences, determine whether it involves a parasitic gap; if it does, determine which gap is parasitic on which other gap and whether the parasitic gap conforms to the restrictions given in §15d:

   a. This is a book which, if you don't know about ∅, I recommend ∅ very highly.
   b. It's the only law that ignorance of ∅ excuses violations of ∅.
   c. [She was] now approaching the end of her life, as Sandy well knew ∅ but tried not to think about ∅. (Frederik Pohl, *Homegoing*)
   d. Which $reports_i$ did Mary decide before reading $∅_i$ to tell her assistant to distribute $∅_i$?
   e. It's $something_i$ I don't care enough about $∅_i$ to do anything about $∅_i$.
   f. The contract which I want to peruse $∅_i$ before damaging $∅_i$ while filing, $∅_i$ is written on Peruvian papyrus. (from Ross 1967)

If there are more than two gaps, be careful to make clear what exactly is parasitic on what. (Can a parasitic gap be parasitic on another parasitic gap?) If the sentence involves a construction whose surface constituent structure has not been established, say what the constituent structure would have to be for it to conform to the generalization that parasitic gaps not be c-commanded by their licensers.

12. Using the following examples (Chomsky 1986:58) and any other relevant examples, say how, if at all, the CNPC applies to parasitic gaps.

   i. He's a man $that_i$ anyone who talks to $∅_i$ usually likes $∅_i$.
   ii. He's a man $that_i$ anyone who tells people to talk to $∅_i$ usually likes $∅_i$.
   iii. *He's a man $that_i$ anyone who meets people who talk to $∅_i$ usually likes $∅_i$.

13. It was argued in §9e that *as well as* is a coordinating conjunction. Determine whether the apparent across-the-board extraction of examples like the following could be taken instead to involve a parasitic gap:

   How many presidents does John own portraits of ∅ as well as books about ∅?

If your answer is positive, say whether it affects the case made above that *as well as* is a coordinating conjunction.

14. Test whether in fact the conditions for obligatory pronominalization account for the restrictions on parasitic gaps by constructing parasitic gap counterparts to examples of obligatory and optional pronominalization and by testing whether pronominalization is obligatory or optional in the relevant analogs to the examples given here of unacceptable and acceptable parasitic gaps.

NOTES

1. In the approaches to syntax found in Chomsky's works since the middle 1970s, in which the output of a movement transformation is assumed to contain a **trace,** i.e., a phonetically null AD having the moved constituent as antecedent, the constraint has generally been formulated (e.g., Chomsky and Lasnik 1977:456) as excluding the surface configuration [Comp [trace V']] and has accordingly often been referred to as the ***that*-trace filter.** See Maling and Zaenen 1978 for a critique of Chomsky and Lasnik's account of the unacceptability of such examples as (18: *that*).

2. On the relationship between whether a language has this surface constraint and whether it allows omission of subject pronouns, see Perlmutter 1970, Maling and Zaenen 1982, Huang 1984, and van der Auwera 1984. The constraint must be formulated so as not to exclude relative clauses of the form *that* V'. The constraint against extraction of subjects from Ss with a nonzero complementizer is proposed in Bresnan 1972 under the name **Fixed Subject Condition.**

3. Not all languages share with English the property that extraposition of complements and of relative clauses is bounded: Subbarao (1984) has noted that Hindi has acceptable analogs to sentences like (23a', 24a'), e.g.,

yah kahnaa galat hai [ki bhaarat meM sabhii log amiir hote haiM].
this say-Inf wrong is that India in all people rich be-Ptcpl$_{mpl}$ are
*'To say it is wrong that in India all the people are rich'. (Subbarao 1984:8)
un jhuuThoM ko dohraanaa buraa hai, jo raam ne tumheM bataaye the.
those$_{obl}$ lies$_{obl}$ Dat repeat-Inf bad$_{msg}$ is which Ram Erg you-Dat told$_{mpl}$ was$_{mpl}$
*'To repeat the lies$_i$ is bad that$_i$ Raam told you'.

The status of HCS as a bounded transformation has been disputed by Andrews (1975:112–13) and Gazdar (1981:176–77) on grounds that will be taken up in §15d.

4. Chomsky (1977b) attempts to reanalyze the unbounded deletion of compared constituents as Wh-movement plus eventual deletion of the Wh-expression; I find Bresnan's (1977) arguments against that analysis convincing.

5. This statement will have to be revised so as to provide for unbounded deletions and changes as well as for unbounded movements.

Chomsky, who at the time took Ss and NPs to be the only cyclic domains, actually defined the Subjacency Condition in terms of cyclic domains: he held that the positions involved in the application of a rule could not be separated by more than two nodes that define cyclic domains. There is of course no necessity that the categories defining bounding nodes for Subjacency be the same ones that define cyclic domains. Even if one takes constituents of all categories to be cyclic domains, one can still take only S nodes and NP nodes to be the bounding nodes for the Subjacency Condition.

6. Engdahl (1983:6) notes that parasitic gaps as subjects of finite Ss are low in acceptability, while similar sentences with a nonfinite complement in a Raising-to-Object construction are acceptable:

i. *Who did John predict ∅ would be successful though believing ∅ is incompetent?
ii. Who did John predict ∅ would be successful though believing ∅ to be incompetent?

Recall that extraction from a finite complement without *that* is normally acceptable (*Who did John believe was incompetent?*), and indeed such extraction occurs elsewhere in (i–ii). I will not attempt here to solve this mystery.