ALTERNATIVES TO THE TENSED S AND SPECIFIED SUBJECT CONDITIONS*

ABSTRACT. The original evidence advanced to support the Tensed S Condition (TSC) and the Specified Subject Condition (SSC) in Chomsky's 'Conditions on Transformations' is reconsidered and viable alternatives to these constraints are provided. It is shown that TSC and SSC, in some instances, lead to a loss of linguistically significant generalization. Satisfactory alternatives can account for the relevant range of data and provide a more general account of additional data. Finally, counterevidence to Subjacency and Superiority is adduced, but explicit alternatives to these conditions are not offered.

0. General Introduction

In his contribution to the Halle Festschrift, Chomsky provides a battery of arguments for his Specified Subject and Tensed S Conditions. Chomsky argues that these conditions provide a unified account of a wide range of disparate facts. More recently, this earlier work has led to the development of trace theory, with the accompanying claim that all aspects of semantic interpretation are determined by surface structure.¹ It is my opinion that this kind of enterprise — a detailed discussion of a wide range of data, together with an explicit theory advanced to explain the data — is precisely the kind of enterprise that linguists must undertake if advances are to be made in syntax and neighboring disciplines. For only when commitments are made to detailed analyses is the productive potential of the critical method fully realized in the face of analyses and theories which do not reflect the true nature of things.

In the following pages I will undertake a critical reappraisal of the evidence advanced to support the arguments for the Specified Subject and Tensed S Conditions in Chomsky's original paper [12].² A careful look at the evidence has convinced me that there are plausible alternatives for dealing with the data provided as motivation for these conditions. In fact, it can be shown, I will argue, that to treat the data by means of these conditions leads in many instances to a loss of generalization; in other instances, the conditions approach raises more problems than it solves.

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After discussing and criticizing the Specified Subject and Tensed S Conditions, I will turn to a brief discussion and critique of Chomsky's Subjacency and Superiority Conditions. These too can be criticized with some force, I believe.

1. Introduction to TSC and SSC

Let us first consider SSC. This condition can be illustrated by considering the well-known rule of Object Shift (= Tough Movement). It is often claimed that this rule relates pairs such as the following.

(1) a. It is not easy for a novice to faro a deck of cards.
    b. A deck of cards is not easy for a novice to faro.

(2) a. It is hard to deal deceptive seconds without arousing suspicion.
    b. Deceptive seconds are hard to deal without arousing suspicion.

The traditional analysis has it that Object Shift moves the object of the complement, in these examples, a deck of cards in (1a) and deceptive seconds in (2a), and substitutes it for it in the matrix. Now a problem immediately arises in connection with (3a).

(3) a. It is pleasant for the rich for poor immigrants to do the hard work.
    b. *The hard work is pleasant for the rich for poor immigrants to do.

The problem is why the object the hard work in (3a) cannot be shifted by Object Shift to yield (3b). According to Chomsky, movement is blocked in (3a) by a constraint on transformations. This constraint prohibits the movement, deletion, etc. of a category across a specified subject, where specified subject amounts to, roughly, a lexical subject (although the revised definition of specified subject will be discussed below). A simplified formulation of this constraint is given in (4).

(4) SSC: No rule can involve X, Y in the structure

\[ \ldots X \ldots [\ldots Z \ldots -WYV \ldots ] \ldots \]

where Z is the specified subject of WYV in \( \alpha \), a cyclic category.

The effects of this constraint are illustrated diagrammatically in (5).

(5) \[ \begin{array}{c}
\text{X} \\
\text{It is pleasant for the rich [s for poor immigrants to do the hard work]} \\
\end{array} \]

\[ \downarrow \]

\[ \begin{array}{cccc}
\text{Z} & \text{Y} \\
\end{array} \]
Since the poor immigrants functions as a specified subject, the hard work cannot cross to substitute for it.

Let us now turn to additional examples illustrating a prohibition against Object Shift.

(6) a. It is good that C. C. Wei invented the precision bidding system.
    b. *The precision bidding system is good that C. C. Wei invented.

Again we see that Object Shift cannot apply to (6a) to give (6b). The prohibition of course follows from SSC, but there is a second condition which also serves to block (6b). This condition prohibits movement or deletion from a tensed sentence and is repeated in a somewhat simplified form as (7).

(7) TSC: No rule can involve X, Y in the structure
     \[\ldots X\ldots [\alpha \ldots Y\ldots ]\ldots\]
     where \(\alpha\) is a tensed sentence.

Since the embedded complement of (6a) is a tensed sentence, by TSC it is not possible to extract the precision bidding system by Object Shift.\(^3\)

2. Motivation for SSC and TSC: A Critique

In this section I will examine Chomsky's motivation for SSC and TSC and provide plausible alternatives to account for the relevant range of data. I will show that these alternatives are independently justified inasmuch as they account for facts which are not treated by SSC and TSC. Thus, it appears that these conditions may be artifacts.

2.1 Object Shift

Since SSC and TSC have been introduced by way of Object Shift in section 1, let us now consider an alternative and historically antecedent account of the relevant range of data. In [7] Bresnan made the following observation.

It has been proposed... by Lees 1960... that certain infinitival complements should be derived from deep-structure VP's rather than S's. Suppose this proposal is applied to the analysis of certain adjective plus complement constructions. [7:263]

According to Bresnan's proposal, following Lees, some adjectives, such as obvious, clear, etc. are lexically subcategorized to select S's, but not VP's, while others, such as tough are subcategorized to select VP's or PP + VP but not S's. This situation is illustrated in (8).

(8) a. It is obvious [\(\text{s}\) that Mahler composed that symphony]
    b. It will be tough [\(\text{pp}\) for some students][\(\text{vp}\) to solve that problem]
Bresnan provides a wealth of evidence to show that predicates such as *tough should not be analyzed as selecting an S complement. Here I will repeat only one of those arguments.

Several facts argue against the sentential analysis: first, if there were an underlying sentence, one would normally expect a sentence-cyclic transformation such as *There-Insertion to take place. But though one can say *It will be tough for at least some students to be in class on time, one cannot say *It will be tough for there to be at least some students in class on time. [7:264]

Bresnan contrasts this situation with predicates such as eager which do select S complements and consequently do permit *There-Insertion: The administration is eager for there to be at least some students in class on time.

Now, in connection with (8), the crucial observation is that Object Shift correlates with presence of VP or PP + VP complement and is not allowed in the case of S or PP + S complement.

(9) a. *That symphony is obvious that Mahler composed.
b. That problem will be tough for some students to solve.

The obvious conclusion is that Object Shift does not apply to S complements. In other words, the rule of Object Shift should be formulated so as to be sensitive to VP or PP + VP complements. Bresnan's tentative formulation along these lines is given in (10).

(10) Object Shift: [s A Pred (PP) [VP V* (P) NP]]

This analysis provides an immediate explanation for the ungrammaticality of Chomsky's (3b) and for example (6) cited above in section 1.

(11) a. *The hard work is pleasant for the rich [s for poor immigrants to do]
b. *The precision bidding system is good [s that C. C. Wei invented]

The explicit formulation of Object Shift as (10) does not allow extraction of an NP from an S complement. Therefore (11a) and (11b) cannot be generated. Thus, SSC and TSC are not supported by movement under Object Shift.

This discussion highlights a rather important point relating to all syntactic research, namely, that serious discussion can ensue only when explicit formulations of the rules in question are provided. In this case Bresnan's formulation leads to a solution for an outstanding puzzle. The puzzle involves certain ambiguous constructions noticed by traditional grammarians such as Jespersen and later by Lees.

There is in fact a class of adjectives permitting both S and PP + VP complements — namely, the class including good, bad, sweet, pleasant, and appropriate; the ambiguity in such cases is noted
by Lees. The sentence *It is good for John to leave* may mean either 'For John to leave is good' = It is good (for John to leave)' or 'To leave is good for John' = It is good for John (to leave.)' Lees maintains a clear distinction between the ambiguous class (good; his type 7) and the unambiguous class (hard, tough; his type 8). [7:266-7].

Now the puzzle is this: whereas (12a) is ambiguous, the result of applying Object Shift in (12b) is not ambiguous.

(12) a. It is good for John to learn such things.
   b. Such things are good for John to learn.

Example (12b) receives the interpretation 'To learn such things is good for John' but not 'For John to learn such things is good'. What is the explanation for the absence of ambiguity under transformation? Obviously Bresnan's rule of Object Shift predicts that the object NP such things will be shifted from the VP complement only. Therefore, it follows that (12b) will receive the PP + VP interpretation and not the S interpretation for the complement structure. This is accomplished without theoretical elaboration. Let us consider briefly how Chomsky's constraints would express these facts.

First, consider example (9b). According to Chomsky, the underlying representation is roughly (13).

(13) It will be tough [PP for some students] [S for PRO to solve that problem]

Chomsky attempts to preserve the abstract S by postulating an abstract subject PRO. This PRO is taken to be an unspecified subject, and therefore SSC will not block Object Shift, which allows extraction of an NP from S provided SSC and TSC are not violated. Now, turning to (12), Chomsky would propose two underlying sources for (12a) corresponding to the two interpretations.

(14) a. It is good [S for John to learn such things]
   b. It is good [PP for John] [S for PRO to learn such things]

In the case of (14a) Object Shift will be inapplicable because of SSC. However, Object Shift will apply to (14b), just as in (13), yielding (12b). Thus, by recourse to SSC, Chomsky is also able to predict the nonambiguity of (12b).

In comparing the two alternatives it is important to bear in mind that Bresnan does not employ ad hoc extensions (of what we agree appears on the surface) such as the abstract S and PRO. Now such extensions are not objectionable in themselves, but if no independent motivation can be given to support them, the theory which avoids such elaborations is to be favored. In this case, no evidence is offered to support the abstract S or the PRO. In
fact, it would appear that new problems entailing further ad hoc excesses are a consequence of the proposed elaborations.

Notice first that preservation of the abstract S creates a gap in phrase structure as well as in the lexicon in terms of lexical subcategorization. Thus, if all VP-like complements are derived from S complements, there will be no VP complements expressed in the phrase structure rules or in lexical subcategorization. But certainly one expects to find VP complements, since one finds all the other major categories such as S, NP, and AP. This gap is closed if VP complements are in fact VP's in underlying representations. Second, notice that the availability of PRO now raises the question of distributional generality. Since true NP's can occupy all the NP positions provided by the phrase structure rules, e.g. the object position, object of preposition position, subject position, etc., one would expect PRO, if it really exists, to occupy the full range of NP positions provided by the phrase structure rules. But no evidence has been advanced to indicate that PRO occupies anything but the subject position. Surely this limited distribution should lead us to question the existence of PRO. Third, the availability of the abstract S raises problems of the following sort. How are we to block underlying complement structures from being associated with tough when they are of the following type?

(15) a. It is tough \[S for John to learn such things\]
   b. It is tough \[S for us to yield to such demands\]

According to Lees and Bresnan, adjectives such as tough do not select S complements, but rather only PP + VP or VP complements. And this claim is borne out, at least for me, by the fact that It is tough for John to learn such things cannot receive an interpretation ‘For John to lean such things is tough’ but rather must be interpreted as ‘To learn such things is tough for John’ and likewise for (15b). Notice that it will not do to block (15) by simply marking tough to obligatorily select a PP, i.e. a PP + S complement. This is so in view of examples such as (16).

(16) It is tough to solve such problems.

If (16) derives from It is tough \[S for PRO to solve such problems\], then one should expect (15) to be a legitimate structure; but it is not, at least for speakers such as Lees, Bresnan, and myself. On the other hand, if (16) derives from a source such as It is tough \[PP for PRO\] \[S for PRO to solve such problems\], then new difficulties arise. First, a new rule will have to be postulated to delete the PP for PRO. This rule is postulated for no other reason than to undo the results the abstractions entail and in this sense is ad hoc. Second, what now is to block It is tough for PRO [for John to solve such
problems)? This in turn raises the general problem of how the presence of PRO in the abstract S subject position is to be insured when PP is present. Thus, what is to block *It is tough for John* [s for Mary to leave]?

It is certainly remarkable that none of the problems even arise within the VP framework. All other things being equal, I think the conclusion is inescapable. The VP framework is to be favored over the analysis adopting the abstract S, PRO, and constraints such as SSC and TSC. Until the problems raised here can be satisfactorily resolved and independent justification provided for the theoretical elaborations entailed by the framework adopted by Chomsky, Object Shift phenomena cannot be taken as evidence for SSC and TSC.°

### 2.2. Each-Movement and TSC

Chomsky [12] claims to follow Dougherty [16] in assuming a rule which moves each so as to relate pairs such as the following.°

(17) a. The candidates each hated the other.

b. The candidates hated each other.

Chomsky calls this rule each-Movement (and occasionally each-Insertion [12:239]) and he draws on it throughout his study as evidence to support SSC and TSC. Thus, consider the difference between (18) and (19).

(18) a. The candidates each expected the other to win.

b. The candidates expected each other to win.

(19) a. The candidates each expected that the other would win.

b. *The candidates expected that each other would win.

It is claimed that (18b) derives from (18a) via each-Movement (hereafter EM), whereas (19b) does not derive from (19a) by virtue of the fact that EM is blocked by TSC as illustrated in (20).

(20) \[ \text{The candidates each expected [s that the other would win]} \]

Since *that the other would win* is a tensed sentence, application of EM to (19a) would constitute a violation of TSC. EM is not prohibited from applying to (18a), however, since *the other to win* is not a tensed sentence.

Now it can be shown that EM is not a movement rule. Rather, each other should be generated as such in the base.° The question therefore shifts from that of explaining why EM cannot apply to (19a) to that of why each other cannot be generated directly in (19b), or, alternatively, why (19b) is filtered in the event that it is generated. Chomsky recognizes the latter possibility
when he remarks: "Notice that if one were to accept the alternative analysis of Jackendoff (1969), principle (20) [= TSC, MKB] would again apply – in this case, not to a movement rule but to a rule of interpretation" [12:238, fn. 17]. Thus, again we see that TSC is instrumental in accounting for the deviance of (19b).

There is some reason to believe, however, that TSC has nothing to do with the deviance of (19b). Consider by way of example the following cases.

(21) a. *Each other will win.
   b. *The boys and each other will win.

The point is simply this. Under the conditions approach, TSC is invoked in ruling out (19b), whereas it plays no role whatsoever in ruling out (21a) and (21b). But, clearly, the mechanism that is independently needed to rule out (21a) and (21b) can be utilized to rule out (19b), in which case (19b) cannot be said to constitute motivation for TSC. We might do this by constraining lexical insertion so that only subject pronouns are inserted into the subject position of tensed S's. Reciprocals such as each other, being object pronouns, would not be inserted into the subject position, as desired. Formally, this might be accomplished by enriching the phrase structure rules or by expanding the complex symbol associated with Pronoun to yield [−objective] when followed by Aux. Subject pronouns would then be marked with this feature, as opposed to objective pronouns such as each other, himself, him, etc., which are [+objective]. Such an account would insure that each other could not be inserted into the subject position of (21a), (21b), and also (19b). This proposal, incidentally, is simply a lexical analogue of Klima's case marking rule, which marks the subject of a tensed S as nominative. Such an account immediately generalizes to account for the following data.

(22) a. *Himself will win.
   b. *Him will win.
   c. He will win.

It will automatically allow for the following distinctions.

(23) a. *We believe that each other are incorrect.
   b. We believe that each other's theories are incorrect.

It also provides for the following distribution of data.

(24) a. The candidates knew that pictures of each other would be on sale.
   b. The candidates knew that pictures of themselves would be on sale.
   c. The candidates knew that pictures of them would be on sale.
The constraint against the appearance of *each other* in the subject position of a tensed S is thus seen to be a special case of a more general lexical or base rule constraint against object pronouns in this position. TSC is incapable in principle of accounting for this range of data. Rather, it appears to lead to a loss of generalization in this area.

There is a further consideration which is worthy of comment. This concerns languages with an underlying order of constituents which differs from the English SVO order. Joan Bresnan has informed me that my idea that *each other* and other instances of 'bound anaphora' must agree with their subjects predicts that reciprocals and reflexives could precede their antecedents in VOS languages, whereas Chomsky's assumption that bound anaphors agree with arbitrary antecedents, subject to SSC and conditions on *proper binding*, predicts that this could happen only if NP-movements are subject to the same conditions, namely rightward movement as opposed to leftward. If reciprocals and reflexives in Malagasy are bound anaphora, Bresnan points out that such a language would appear to support my assumption and disconfirm Chomsky's, because reflexives do precede their subjects, whereas NP-movements are leftward.

Now let us turn to the following examples.

(25) a. The boys each think that Bill will fool the other.
    b. *The boys think that Bill will fool each other.

(26) a. Bill thinks that the boys each will fool the other.
    b. Bill thinks that the boys will fool each other.

Under the movement approach to *each other*, (25b) cannot derive from (25a) because of TSC, whereas (26b) can derive from (26a) without incident. But, as noted above, the movement approach is misguided. Therefore, according to Chomsky's interpretive analogue, *each other* and *the boys* in (25b) cannot be related by the interpretive anaphora rule because of TSC (and also by virtue of SSC).

But TSC again has nothing to do with the deviance of (25b). To see this consider the following examples.

(27) a. *Bill will fool each other.
    b. The boys will fool each other.

The most obvious and straightforward account of (27a) is simply that *each other* and Bill are anaphoric, but since anaphorically related NP's must agree in number and gender, (27a) constitutes a violation of concord, *Bill* being singular and *each other* plural. Such an account generalizes to other anaphoric pronouns.
This account also generalizes to rule out (25b), granted that anaphoric pronouns such as *each other are marked as anaphoric with their subject antecedents.

In summary, there are two assumptions. First, I assume a rule of anaphora which marks anaphoric pronouns such as reciprocals and reflexives as anaphoric to their subject antecedents. Let us write this interpreted relation as (NPi, NPj), to be read Wi is anaphoric to NPj, where NPi is an anaphoric pronoun and NPj is its subject antecedent. Second, I assume that there is a filter which marks those sentences in which the anaphorically related NP's differ in concord as ill-formed. Such a filter might be formulated in the following way.

\[(29) \text{Gender/Number Filter:} \]
\[s \ldots [\ldots NPi \ldots \ldots NPj \ldots \ldots] \rightarrow \# \]
\[\alpha F \rightarrow \neg \alpha F \]
where (NPj, NPi) and F is gender or number

Now it is true that the interpretive rule which provides us with the anaphoric relations (NPi, NPj) must itself be constrained so that it does not apply across tensed S's; however, it is shown in [6] that TSC receives no support from the general rule of anaphora.

The point is again this. Even Chomsky must develop an independent mechanism for marking examples such as (27a) and (28) as deviant. But this independently needed mechanism, which I have formulated as (29), should in fact be utilized to account for the deviance of (25b). Once this independent device is brought to bear, examples such as (25b) cease to count as evidence for TSC.

2.3. EM and SSC

On quite analogous grounds it can be shown that EM does not constitute evidence for SSC. Consider the argument for SSC based on the following examples.

\[(30) \text{a.} \quad \text{The men each expect Bill to see the other.} \]
\[\text{b.} \quad \ast \text{The men expect Bill to see each other.} \]

According to the conditions approach, EM is blocked by SSC from applying to (30a) to yield (30b). Or, looking at it from the interpretive perspective,
each other cannot be marked as anaphoric to the men in (30b) because of SSC, as illustrated below.

(31) \[
\begin{array}{c}
X \\
\mid \\
Z \\
\mid \\
Y \\
\end{array}
\]
the men expect [s Bill to see each other]

However, here, as in the case of (25b), special conditions such as SSC are superfluous. Completely independent mechanisms such as the rule of anaphora will mark Bill and each other as standing in an anaphoric relationship, i.e. (each other, Bill), since Bill is the antecedent subject. This in turn constitutes a violation of number agreement, so that (30b) is filtered by (29). This explanation derives additional support from the fact that the following must be filtered in a completely analogous fashion.

(32) a. *John’s pictures of each other are on the table.
    b. *John’s pictures of themselves are on the table.
    c. *The men’s pictures of himself are on the table.
    d. *John’s pictures of one another are on the table.

On the other hand, the following examples are not filtered by (29).

(33) a. The men’s pictures of each other are on the table.
    b. John’s pictures of himself are on the table.
    c. The men’s pictures of one another are on the table.

In (32) the subject and anaphoric pronoun must again stand in an anaphoric relationship, but this time the relevant phrase is the cyclic category NP as opposed to S. These anaphoric relations, however, give rise to concord violations. Quite apart from SSC, some extra mechanism is required to mark the examples of (32) as deviant. The claim made here is that precisely this mechanism should constitute the explanation for the deviance of (30b). This conclusion shows that SSC derives no support from examples such as (30b).

2.4. Unlike Person Constraint and Disjoint Reference

Chomsky adduces the following examples with associated grammaticality judgments.

(34) a. *I saw me.
    b. *I watched us leaving.
    c. *We watched me leaving.
    d. *You (all) noticed you standing there.
Following Postal, Chomsky claims

... the point seems to be that a rule of interpretation RI applying to the structure NP-V-NP (among others) seeks to interpret the two NPs as nonintersecting in reference, and where this is impossible (as in the case of first and second person pronouns ...), it assigns 'strangeness', marking the sentence with *.

Chomsky goes on to cite the following examples.

(35) a. We expect them to visit me; I expect them to visit us (me).
b. *We expect me to visit them; *I expect us (me) to visit them.
c. *We expect me to be visited by them; *I expect us (me) to be visited by them.
d. We believe I may still win; I believe we (I) may still win.

In connection with (35a) and (35d), it is claimed that SSC and TSC block RI, and thus these examples are not starred. "Therefore in these sentences the pair of italicized NPs may intersect in reference; the sentences are not marked with * by RI." [12:241]

Let us attempt to be more explicit about what is asserted in the foregoing quote. First, the reference sets denoted by NPs are interpreted as non-intersecting, i.e. their intersection is null, when SSC and TSC do not function to block this interpretation. This claim is represented by the following rule, where Ref (X) indicates the reference set denoted by X.

(36) RI1: \( \text{Ref}(NP_i) \cap \text{Ref}(NP_j) = \emptyset \) if \([s \ldots NP_i \ldots NP_j \ldots]\)

Second, some sentences are actually starred when the NPs involved are both first person or both second person pronouns. This claim is represented by the following rule.

(37) RI2: \([s \ldots NP_i \ldots NP_j \ldots] \rightarrow *\)
where NP_i and NP_j are both first or second person pronouns

Now there is some reason to suspect that reference, intersecting or otherwise, is not crucial to this discussion. First of all, note that (35b) and (35c) are in fact perfectly grammatical. This fact could be accounted for by incorporating a further restriction into (37), namely, that NP_i and NP_j agree in number as well as person (exclusive of third person). However, there is another fact, and this is simply that (34a–d) are also perfectly grammatical in spite of the claim to the contrary. What is remarkable about (34a), for example, is not that it is ungrammatical, but, rather, that it receives a special interpretation, which, to borrow a term from Lewis, we might call the counterpart interpretation. To see that such examples are indeed grammatical, we might consider examples involving more contextual material, such as the examples listed under (38).
(38) a. While watching TV the other day, I saw (us, me) leaving.
    b. Why don’t you come up to my place and we’ll watch (us, me)
       leaving on TV.
    c. If I were you, I would kiss me.
    d. I dreamed I was you and that I kissed me.

Now the crucial point here is not that rules such as (36) and (37) are blocked
by conditions such as SSC and TSC, but rather that certain pronouns are
interpreted as counterparts under structural conditions which turn out to be
quite analogous to those required for anaphora. Thus, again representing
the anaphora relation with parentheses as in section 2.2 and representing the
counterpart relation with angled brackets, we observe the following.

(39) a. I saw myself                      (myself, I)
    b. I saw me.                           ⟨me, I⟩

(40) a. I know you saw myself.         ~ (myself, I)
    b. I know you saw me.                 ~ ⟨me, I⟩

(41) a. I told myself to leave.        (myself, I)
    b. I told me to leave.               ⟨me, I⟩

(42) a. I told you to kiss myself.     ~ (myself, I)
    b. I told you to kiss me.            ~ ⟨me, I⟩

This parallelism is expressed in a general way in the theory outlined in [6],
where counterpart interpretation, like anaphora, is an interpreted syntactic
relation. Though coreference must take such syntactic relations into
account, neither anaphora nor counterpart itself can be considered a seman-
tic relation on a par with pronominalization.11 In conclusion, the relevant
eamples cannot be considered as evidence for SSC or TSC.

There is, incidentally, evidence of another sort, brought to my attention
by Joan Bresnan, which suggests that intersecting reference is not crucial to
the correct account of the relevant examples. Thus, consider the following
eamples.

(43) a. John and Bill like him.
    b. John and Bill like them.

Now him in (43a) and them in (43b), under the approach being criticized
here, exhibit reference sets which do not intersect with the reference of John
and Bill, which is presumably the set of John and Bill. But if reference is
indeed involved, then an NP denoting the complement set of John and Bill
should allow pronominal reference to John and Bill. However, this prediction
is not borne out in the relevant examples listed in (44).

(44) a. Neither John nor Bill like him.
    b. Neither John nor Bill like them.
In (44), just as in (43), the reference of him and them cannot intersect with the set denoted by the subject, the set of John and Bill in the case of (43) and the complement set in the case of (44). This suggests that it is not reference, but rather the counterpart relation that we are dealing with here since in both (43) and (44) the pronouns can be interpreted as counterparts to their subjects. This conclusion is supported by the fact that reflexive pronouns are also possible under analogous conditions.

(45) a. John and Bill like themselves.
      b. Neither John nor Bill like themselves (likes himself).

The correlation between anaphora and counterpart is thus seen to hold in these cases as well. This shows that such relations are syntactic and do not depend on reference, in spite of the fact that any theory of reference will take such relations into account.

2.5 Wh-Movement

The following examples are offered as further motivation for SSC.

(46) a. Who did you see pictures of?
      b. *Who did you see John's pictures of?

In (46b) John's is a specified subject, whereas (46a) has no subject associated with pictures.\(^{12}\) Thus, it is argued, (35b) constitutes a violation of SSC, accounting for its deviance.

Some speakers have disagreed with the grammaticality judgments indicated in (46), maintaining that (46b) is perfectly grammatical. Since (46a) and (46b) are quite similar structurally (they do differ, as will be noted below), it seems reasonable that some speakers will provide a parsing of (46b) on analogy with (46a). This false parsing should be due to performance factors and can be dismissed in view of many additional clear-cut examples, including the following.

(47) a. Bill saw paintings by a famous artist.
      b. Which artist did Bill see paintings by?

(48) a. Bill saw Mary's paintings by a famous artist.
      b. *Which artist did Bill see Mary's paintings by?

However, additional examples show that it is not a fact about subjects, i.e. SSC, that accounts for the deviance of (46b) and (48b).

(49) a. Bill saw those paintings by Rembrandt.
      b. *Which artist did Bill see those paintings by?

(50) a. Mary saw those pictures of Harry.
      b. *Who did Mary see those pictures of?
Chomsky recognizes that determiners like *those, these, the*, etc. lead to violations and suggests that SSC might be refined to accommodate "the feature [+definite] as well as the property of lexical specification" [12:239, fn. 19]. He goes on to consider accounting for "a three-way gradation of acceptability" with examples such as (46b) apparently being less acceptable that (49b) and (50b). Although there may indeed be recognizable degrees of acceptability in these examples, it seems that these acceptability judgments ought to be construed as a relatively clear case of a performance phenomenon. Most speakers, would react even more strongly against (51), for example, than (46b) because the subject is even more complex.

(51) *Who did Bill see John and Mary's pictures of?*

It seems better to assume that all such example are ungrammatical, their deviance being due not to the presence of subjects, but rather to the presence of constructions bearing heads. I have in mind here a structural difference between *pictures of NP* on the one hand and *Det pictures of NP* on the other, where Det may dominate articles or possessive NPs. One proposal for such a distinction is provided in (52).

(52) a. \([\overline{N} \text{pictures} [PP \text{of N}]}_{\overline{N}}\]

b. \([\overline{N} \text{Det} [\overline{N} \text{pictures} [PP \text{of N}]}_{\overline{N}}\]

Given such a structural difference one might propose a general constraint on the scope of rules applying to structures such as (52b). In fact, such a constraint has been proposed by a number of authors. A recent formulation of the Head Constraint by van Riemsdijk [25] is the following.

(53) Head Constraint:
No rule may involve X and Y in the structure
\[\ldots X \ldots [H^n \ldots [H' \ldots H \ldots Y \ldots ]_{H'} \ldots ]_{H^n} \ldots \]
where H is the phonologically specified head and H^n is the maximal projection of H

The Head Constraint is an interesting alternative to SSC. Together with (52a, b), it correctly predicts that (46a) and (47b) are grammatical, while it predicts that (46b), (48b), (49b), and (50b) are not. Moreover, it does not block the following, given rational assumptions about the structure of such examples.

(54) a. *Who do you expect John to talk to?*

b. *Who do you want Bill to see?*

Such examples as these are counterexamples to SSC and occasion new elaborations such as successive cyclicity with special COMP nodes. The Head Constraint does not entail these devices.
There is, however, evidence that the Head Constraint is not the correct account in such cases. Consider, for example, the important fact that the following examples exhibit a range of grammaticality completely analogous to the foregoing examples.\textsuperscript{13}

(55) a. Who saw pictures of who(m)?
   b. *Who saw John’s pictures of who(m)?
   c. *Who saw those pictures of who(m)?

(56) a. Who saw pictures by who(m)?
   b. *Who saw Mary’s pictures by who(m)?
   c. *Who saw those pictures by who(m)?

Examples such as these should be read without echo intonation. They demonstrate, I believe, that the constraints approach to such phenomena is fundamentally misguided. Rather, the underlying structural difference laid out in (52) (or some such structural difference) should be crucial to filtering (or lexical insertion) of scope words such as who, what, etc. Such an account, elaborated in [6] and to some extent in the following subsection, does not make reference to SSC.

2.6. Scope of Negation

A further argument for SSC is attributed to Lasnik and is based on examples such as the following.

(57) a. I didn’t see many of the pictures.
   b. I didn’t see pictures of many of the children.
   c. I didn’t see John’s pictures of many of the children.

Chomsky claims that (57a) and (57b) are ambiguous. On one reading, the negative element can be associated with many; on the other reading, it is associated with see. On the former reading of (57a), few pictures were seen, while on the latter reading, many or few may have been seen, but many were not seen. A similar ambiguity is said to hold of (57b). However, it is claimed that (57c) is not ambiguous. It can bear only the interpretation associating the negative element with the verb see. The negative element cannot be associated with many in (57c). The reason for this is that SSC blocks interpretation across the specified subject John’s.

These judgments are subtle and I find difficulty sorting out the various interpretations, but they are not implausible. However, if scope of negation can be used to argue for SSC and TSC, certainly it can be used to argue against SSC and TSC if relevant examples can be found. In fact, it is well known that negation in matrix structures can affect material in complement
structures. Thus, to take a familiar example from Chomsky [11], we find the following facts concerning until phrases.

(58) a. *Bill will leave until midnight.
   b. Bill will not leave until midnight.

Thus, until midnight must fall within the scope of negation in order for the sentence to exhibit full grammaticality. But now consider the fact that the following is fully grammatical.

(59) Mary didn’t expect Bill to leave until midnight.

Now, according to the approach being criticized here, Bill is a specified subject in (59), and yet the scope of negation is able to filter past Bill so as to permit the until phrase. Such examples provide strong counterevidence to SSC, and analogous examples can be multiplied. Thus, idioms such as give a damn, cut any ice, and others behave like the until phrase in exhibiting full grammaticality in the presence of negation.14

(60) a. *We give a damn whether we pass or fail.
       We don’t give a damn whether we pass or fail.
   b. *It cuts any ice whether you pass or fail.
       It doesn’t cut any ice whether you pass or fail.

Again, the scope of negation is able to filter past the specified subject as exhibited in the following sentences.

(61) a. John doesn’t expect us to give a damn whether we pass or fail.
       John doesn’t expect it to cut any ice whether you pass or fail.

Thus, the facts attributed to Lasnik do not support SSC.

Assuming that Lasnik’s and Chomsky’s judgments concerning the ambiguity of (57a, b) and the nonambiguity of (57c) are correct, it remains to provide an alternative explanation for these facts. In this connection let us note the following examples.

(62) a. I didn’t see any of the children.
   b. I didn’t see pictures of any of the children.
   c. *I didn’t see John’s pictures of any of the children.

(63) a. I didn’t see any of the artists.
   b. I didn’t see pictures by any of the artists.
   c. *I didn’t see John’s pictures by any of the artists.

These examples are quite analogous to those cited in (57), repeated here to bring out the parallelism.
(64) a. I didn't see many of the pictures.
    b. I didn't see pictures of many of the children.
    c. I didn't see John's pictures of many of the children.
(65) a. I didn't see many of the artists.
    b. I didn't see pictures by many of the artists.
    c. I didn't see John's pictures by many of the artists.

There is indeed an analogy here. *Many may or may not receive negative scope, but in (64c) and (65c) it cannot, so these examples are unambiguous. *Any, on the other hand, requires negative scope, but does not have it in (62c) and (63c), so these sentences are deviant. Thus, there is a similarity, and the difference in grammaticality can be correlated with the following difference.

(66) a. *I saw any of the pictures.
    b. I saw many of the pictures.

That the generalization cuts deeper still can be seen by comparing (62)-(65) with the facts about reflexives to which we now return.

(67) a. The boys saw each other.
    b. The boys saw pictures of each other.
    c. *The boys saw John's pictures of each other.
(68) a. I saw myself.
    b. I saw pictures of myself.
    c. *I saw John's pictures of myself.

Clearly, SSC is the wrong way to go about generalizing the negation and anaphora cases. Further, the Head Constraint fails to generalize to the examples discussed in the previous subsection (repeated as (69)) which should be compared with (62)-(68).

(69) a. Who saw who(m)?
    b. Who saw pictures of who(m)?
    c. *Who saw John's pictures of who(m)?

Therefore, instead of approaching the problem negatively, i.e. by specifying what scope cannot do, let us approach the matter positively and stipulate what scope must do.

I have already suggested a means of attacking the facts about anaphora in subsection 2.2. It now remains to generalize such an account. In what follows I will sketch a general treatment for \( \bar{N} \); a more general account covering \( \bar{S} \) as well can be found in [6].
Let us stipulate that scope items such as *who, what, any, ever,* etc. as well as anaphoric pronouns such as each other, myself, etc. be obligatorily related to their associated heads in the presence of N. This was the account provided for anaphoric relations earlier where it was assumed that himself is marked as anaphoric to John in (33b) and as anaphoric to the men in (32c). The latter example constitutes part of the motivation for a concord filter such as (29). Suppose now we do the same for the other scope phenomena. Pictorially, we might formulate the scope rule as follows.

(70) Scope Rule: Interpret \(\text{R}(S, \text{Det})\) in \([\text{S}H[ ... S ... ]R]N\) where S is a scope word such as wh, any, myself, H is the lexical head of N, and R is the scope relation

A specific instance of the scope relation R is anaphora which was stated above as (NPi, NPr). Now in (62c) we get \(\text{R}(\text{any, John})\), but this does not satisfy the constraint that an affective item must be the second coordinate of R when any is the first coordinate. Therefore, (62c) is filtered in a way analogous to examples of concord disagreement in anaphora.

Within the framework I am advocating here, the key point is that scope items are obligatorily interpreted as related to their heads. Within the conditions framework, the affective contexts are blocked from having scope which crosses a head. My framework positively specifies its scope relations; the other allows arbitrary scope constrained by conditions such as SSC or the Head Constraint. In a sense, it says what cannot constitute a legitimate scope relation, rather than what can.

The theory advocated here should be able to express the following parallelism.

(71) a. We believe that each other’s theories are incorrect.
    b. We don’t believe that anyone’s theories are incorrect.

(72) a. *We believe that John’s pictures of each other are on the table.
    b. *We don’t believe that John’s pictures of anybody are on the table.

(73) a. We believe that pictures of each other are on the table.
    b. We don’t believe that pictures of anybody are on the table.

Examples such as (71) are discussed in [6]. Here, let us be content to note that relative clauses exhibit a similar parallelism and are treated by the Scope Rule (70).

(74) a. I saw the boy who hit himself
    \[\underline{_______}\]
    b. *I saw the boy who hit myself
    \[\underline{\times}\]
(75) a. I never met anyone who ever won at baccarat.

b. *I never met the boy who ever won at baccarat.

(76) a. John is the only boy who saw anything.

b. *John is the boy who saw anything.

Notice that the relation is well-formed and hence is not filtered when there is no concord disagreement in the case of anaphora and when an affective element is present in the head in the case of a negative scope item such as ever or anything. Such an account can be generalized beyond N as in [6]. This account correctly predicts the facts concerning scope of negation in (62) and (63), while allowing (59) and (61), which are counter examples to SSC.

2.7. Passive

Another argument offered as motivation for TSC concerns the following examples.

(77) a. I believe the dog is hungry.

b. *The dog is believed is hungry by me.

According to Chomsky, there is no way to block the Passive transformation from applying to (77a) to yield the ungrammatical (77b) within the standard theory since nodes that dominate no terminal string play no role “in factoring terminal strings for transformation” [12:273, n55]. Thus, even though COMP intervenes between the verb believe and the NP the dog in the relevant deep structure (78), Passive will still apply.

(78) I believe [s COMP the dog is hungry]

However, as Chomsky notes, “there are other conventions” that might be conceived, and one obvious proposal in this case is that nodes that dominate no terminal strings, such as COMP, do play a role in factoring terminal strings for transformation. If the rule of Passive is formulated so as to require that the object immediately follow the associated verb, then (77b) will be avoided under this alternative convention.

However, it seems to me that there is another even more plausible explanation for the ungrammaticality of (77b). This explanation rests on some results argued for in [3] and depends on base structures which are
considerably less abstract than assumed in the standard theory. In [3] and [5] I argue that VP complements are generated directly, along with passives, expletive there sentences, raising sentences, etc. If this is the case, then it is necessary to explain why the following examples are ungrammatical.

(79) a. I persuaded Mary [VP is present]
b. I expected Mary [VP is present]

One answer is to adopt Emonds' proposal that no Aux node be generated as an expansion of VP. Rather Aux is reserved for S and gives rise to tense (M). If Emonds' proposal is adopted, then (79a, b) cannot arise. Alternatively, Aux might be generated in the VP, but expanded only as to and possibly ing when dominated by VP. In either case, such restrictions on VP complements will allow both of the examples listed in (80) while prohibiting the examples in (81).

(80) a. Mary persuaded John to be quiet.
b. John was persuaded by Mary to be quiet.

(81) a. *Mary persuaded John is quiet.
b. *John was persuaded by Mary is quiet.

But clearly (81b) is analogous to (77b). Precisely the same restrictions on VP complements can be used to prohibit (77b) where is hungry is taken to be VP. Passive of course cannot apply to (77a) because it is not a transformation. Rather, passive structures are generated directly as argued in [3] and [5].

2.8. Naturalness

As a final argument for SSC, Chomsky notes that SSC "has a certain naturalness" in having "the effect of reducing ambiguity, or, to put it differently, of increasing the reliability of a reasonable perceptual strategy that seeks the nearest NP to a verb (or the head noun of a nominal phrase) as its subject" [12:270]. Thus, in the example the men expected the police to arrest each other, SSC reduces ambiguity by requiring the each of each other to be associated with the police and not the men. But, clearly, within the approach outlined in subsections 2.2, 2.3 and 2.6, this result is also obtained, and in a positive manner. Moreover, there is little to be gained by resorting to plausibility arguments based on very abstract ideas such as naturalness, given the poverty of our present understanding of what constitutes a natural syntactic process. Indeed languages are quite rampant with ambiguity and one might even argue that it is natural that languages are blessed with such richness. Whatever the case, naturalness is no substitute for internal
arguments, and I do not see that naturalness provides any support for SSC over the alternatives sketched out here.

3. Counterexamples to SSC, TSC, and Subjacency

I think that the foregoing discussion demonstrates that there is little motivation for SSC and TSC. Moreover, many of the facts brought to bear in section 2 argue against these conditions. In the present section I want to advance additional arguments against SSC, TSC, and a further condition, subjacency. Preparatory to presenting these arguments, let us review subjacency and its consequence, successive cyclicity.

3.1. Introduction to Subjacency and Successive Cyclicity

Chomsky notes examples such as those listed in (82).

(82) a. What did you tell me Bill saw?
b. Who did you say left?

He points out that (82a) appears to violate both SSC and TSC, while (82b) appears to violate TSC. Therefore Chomsky reanalyses wh-fronting, utilizing Bresnan's COMP node, so as to move the wh-word leftward in a successive cyclic fashion as illustrated in (83).

(83) a. COMP you told me [s COMP Bill saw what]
   \____________|\____________|
   \    \   |
   \    \   |
b. COMP you said [s COMP who left]
   \____________|\____________|
   \    \   |
   \    \   |

A more complicated example is (84a), which is derived in a successive cyclic fashion according to (84b).

(84) a. Who did John say that Bill wanted Harry to investigate?
b. COMP John said [s COMP Bill wanted [s COMP Harry to investigate who]]
   \____________|\____________\____________|
   \    \    |
   \    \    |

This analysis is apparently required given the new constraint Chomsky proposes.

(85) Subjacency: No rule can affect material in two cyclic domains unless these domains are adjacent.
This condition has the effect of prohibiting *wh*-fronting in one sweep as in the traditional approach. Further, to avoid violations of TSC and SSC, these conditions are reformulated and collapsed to give the following.

(86) No rule can involve \( X, Y \) in the structure
\[
\ldots X \ldots [\ldots Z \ldots -WYV \ldots ]\ldots
\]
where
(a) \( Z \) is the specified subject of \( WYV \)
or (b) \( Y \) is in COMP and \( X \) is not in COMP
or (c) \( Y \) is not in COMP and \( \alpha \) is a tensed S

(86a) is SSC and (86c) is TSC revised so as to allow extraction when \( Y \), in the above case the *wh*-NP, is in COMP. Condition (86b) prohibits movement from COMP unless the relevant trigger is itself in COMP. The net effect is that *wh*-fronting proceeds from COMP to COMP.

Before turning to the counterevidence, let us consider one further revision of SSC. This revision is occasioned by examples such as the following.

(87) a. We each persuaded Bill to kill the other.
   b. *We persuaded Bill to kill each other.

According to (86), EM (or the interpretive analogue) should not be blocked in (87a). Therefore (87b) should be grammatical. This follows from the fact that the embedded clause contains PRO in Chomsky’s framework, which is an unspecified subject under the previous definition. To obtain the situation illustrated in (88), Chomsky revises SSC as in (89).

(88) We each persuaded Bill [COMP \( PRO \) to kill the other]

(89) SSC: No rule can involve, \( X, Y \) in the structure
\[
\ldots X \ldots [\ldots Z \ldots -WYV \ldots ]\ldots
\]
where \( Z \) is the subject of \( WYV \) and is not controlled by a category containing \( X \).

Now in (88) it is \( Bill \), not \( X \) (we each), which controls PRO. Therefore (89) applies, and EM will be inapplicable to (88). On the other hand, SSC will not apply in the case of (90), so that EM will be allowed.

(90) We each promised Bill [COMP \( PRO \) to kill the other]

Thus, \textit{we each promised Bill to kill the other} can be converted to \textit{we promised Bill to kill each other}.
3.2. Counterexamples

Let us now turn to some problems that arise in connection with TSC, SSC, and Subjacency.

3.2.1. Clefting

Clefting provides a new source of counterevidence against successive cyclicity in conjunction with constraint (86). The relevant example is due to Joseph Emonds (personal communication).

(91) It was in the garage that John put the car.

Note that (91) apparently must involve a transformational operation since the following is ungrammatical.

(92) *John put the car.

Therefore, (92) apparently derives from a source containing the focus prepositional phrase in the that-complement. Plausible deep structures include the following.

(93) a. It was in the garage [s that John put the car in the garage]
   b. It was A [s that John put the car in the garage]

Now if (93a) is adopted as the underlying source of (91), a deletion transformation will be required, but deletion under identity will violate subjacency, SSC, and TSC in the following example.

(94) It was in the garage that Mary said that John put the car.

On the other hand, if (93b) is adopted as the underlying source for (91), a movement transformation will be required. Clearly, movement in one sweep from the nonfocus position to A will again constitute a violation of subjacency, SSC, and TSC. Consequently, movement must proceed in a successive cyclic fashion. This is illustrated in (95).

(95) It was A [s COMP Mary said [s COMP John put the car [PP in the garage]]]

But this derivation also leads to a violation, since the final movement from the COMP to the focus position entails a violation of (86b). This is so since the PP moves from a COMP position to a nonCOMP position.

3.2.2. Comparative Subdeletion

Bresnan [9] has provided additional examples which pose problems for
Subjacency. She argues for a rule of Comparative Subdeletion which deletes underlying measure phrases in examples such as the following.

(96) a. Why were there more women on TV than there were ____ men?
    b. There weren't as many men on TV as there were ____ women.

This deletion, she argues, violates Subjacency in examples such as the following.

(97) Therefore, they can hire more women than the Administration would allow them to hire ____ men.

Bresnan advances arguments against a movement analysis for such examples. If her arguments against movement are correct, her examples constitute counterevidence to Subjacency.

3.2.3. wh-Movement

Chomsky adduces the following examples and assigns them the underlying structures provided in (99).

(98) a. They will obey any request to kill each other.
    b. *They will okay any request to kill each other.

(99) a. They each will obey [any request [COMP PRO to kill the other]]
    b. They each will okay [any request [COMP Δ to kill the other]]

It is assumed that they each controls PRO in (99a), but not Δ in (99b). Given the revised SSC (89), PRO will not function as a specified subject in (99a). Therefore EM will be applicable, giving rise to (98a). However, Δ will function as a specified subject under (89) in (99b). Hence EM will not be applicable and (98b) will be blocked.16

In this connection consider the following examples in which, following the above reasoning, we would conclude that Δ is present in the structures underlying the examples.

(100) a.*They will okay any proposal to kill each other.
    b. Which Cubans did the White House okay a proposal to kill?
    c. It was Castro that the White House okayed a proposal to assassinate.

Since presumably (100a–c) all contain Δ in their underlying structures, that Δ should function as a specified subject given the revised version of the constraint (89). This leads to the false prediction that (100b, c) are ungrammatical.
3.2.4. Each-Movement

Let us return now to EM in connection with examples such as the following.

(101) a. It would be pleasant for the rich for the poor immigrants to do
      the hard work.
      b. It would be pleasant for each of the men for the poor immigrants
         to do the hard work.
      c. It would be pleasant for each of the men for the others to do the
         hard work.
      c. *It would be pleasant for the men for each other to do the hard
         work.

All of these examples involve a PP+S complement, and it is clear from
(101c) that quantified phrases can occupy the PP slot with the others
functioning as the subject of the embedded S. Chomsky's approach predicts
that EM should be applicable to (101c) to yield (101d) since there is no
intervening specified subject and no tensed S. Yet (101d) is not grammatical.
If, alternatively, EM is viewed as interpretive, as suggested in section 2,
there will be nothing to block the relevant interpretation in the case of
(101d) since SSC and TSC are not applicable. Examples such as (101d),
therefore, appear to constitute evidence against the conditions approach.
By contrast, (101d), can be ruled out in a straightforward manner according to
the suggestion of section 2.2 that object pronouns not be generated in the
subject position of S's.17

3.2.5. Object Shift

Consider the following examples.

(102) a. It is pleasant for the rich to do the hard work.
      b. The hard work is pleasant for the rich to do.

Example (102b) is perfectly grammatical and yet the deep structure
Chomsky assigns to it is the following.

(103) It is pleasant for the rich [COMP PRO to do the hard work]

Now Chomsky notes that Object Shift should not be applicable given the
revised version of SSC as (86). This follows since it functions as X, and PRO
is not controlled by a category containing X. It is because of this new
difficulty that Chomsky reanalyses Object Shift as two rules—PRO-
Replacement and It-Replacement—and incorporates traces into his
framework. A representative derivation is given in (104).
(104)  It is easy [for PRO to please John] PRO-Replacement  
      It is easy [for John to please] It-Replacement  
      John is easy [for t₁ to please]  

Chomsky argues that this reanalysis does not constitute a complication since It-Replacement is needed in any event to get John seems to be a nice fellow according to (105).

(105)  It seems [COMP John to be a nice fellow] It-Replacement  
      John seems to be a nice fellow  

Now the claim that such a reanalysis of Object Shift does not constitute a complication in the grammar of English clearly rests on the truth of the claim that It-Replacement can be utilized in the derivation (105). But Chomsky himself notes that this entails complications. Thus, It-Replacement must somehow be blocked in (106).

(106)  It is pleasant for the rich [for the workers to do the work]  
      *The workers are pleasant for the rich to do the work  

Since the workers are pleasant for the rich to do the work is ungrammatical, new machinery is necessary to avoid the bad result. Chomsky's analysis involves stating PRO-Replacement so as to 'combine' the moved object of the complement with PRO and stating It-Replacement so that it is obligatory when (i) PRO is part of the subject complement and when (ii) PRO is not present in structures such as that evidenced in (105). This proposal is contrived inasmuch as PRO-Replacement is the only such rule to 'combine' constituents and inasmuch as the 'independent' motivation for It-Replacement is repossessed in view of the difference in obligatoriness with respect to the related structures and presence of PRO. It should also be added that none of the relevant rules are explicitly formulated.

Thus, the conclusion would seem to be inescapable, namely that simple Object Shift examples such as (102) are counterevidence to SSC. In this connection, it should be remarked that none of the difficulties discussed here arise in the VP framework discussed in section 2.1.

Before closing this subsection, I would like to offer one final argument against the foregoing approach to Object Shift. It is well known that arbitrarily long strings of verbs do not block application of this rule. Thus, Bresnan has cited examples such as the following.

(107)  John is hard for Bill to even begin to try to please.

Now, if Chomsky's underlying structures are adopted, then (108) will underlie (107).
(108) It is hard for Bill [for PRO to even begin [for PRO to try [for PRO to please John]]]

Now if John is moved directly and substituted for it, not only will this violate SSC, as noted above, but also it will violate subjacency. On the other hand, if the PRO-Replacement analysis is adopted, John will 'combine' with the PRO of the innermost embedded S. But now It-Replacement applied to this result will violate subjacency! Thus, new elaborations are needed to derive (107). Presumably PRO-Replacement must apply in a successive cyclic fashion. But apparently this rule 'combines' an object NP with PRO, whereas after one application, it would have to 'combine' a subject instance of an NP/PRO combination with PRO. Without explicit rules, it is difficult to envision what such an analysis would look like, and whether, in fact, it would even be formulable.

3.2.7. Superiority

Chomsky attempts to account for the ungrammaticality of the following examples.

(109) a.*John knows what who saw.
    b.*To whom does John know what books to give?

These examples are to be read without echo intonation, for when echo intonation is present the examples are fine. The account of (109) offered in [12] involves a new condition which is called Superiority.

(110) Superiority: No rule can involve X, Y in the structure
     \ldots X \ldots \ldots Z \ldots -WYV \ldots \ldots
     where the rule applies ambiguously to Z and Y and Z is superior
to Y.

Consider how this condition predicts the ungrammaticality of (109b). Here the COMP of the underlying matrix clause functions as the X of (86). The rule of wh-fronting would apply ambiguously to what books, which is Z, and to to whom, which is Y. But Z is superior to Y, so (109b) constitutes a violation of (110). By contrast, What books does John know to give to whom, in which case Z is moved, does not constitute a violation and is indeed grammatical.

The following examples are counterexamples to Superiority.

(111) a. What books does John want which student to read?
     b. What books does John want who else to read?

To my ear such examples are quite natural when read without echo intonation.
4. Conclusion

In section 2, the evidence adduced to support TSC and SSC has been assessed, and alternatives have been suggested which adequately account for the relevant range of data. In some cases, it has been argued that the alternatives provide a more general account than the constraints. Additional counterexamples to SSC and TSC have been provided in section 3, and Subjacency and Superiority were also criticized.

In this paper, I have confined my remarks to Chomsky's original paper [12]. In recent works [13, 14], traces have assumed a more prominent role than in the original essay. Constraints such as TSC and SSC are now interpreted as constraints on surface structures, a move which is made possible by the fact that traces serve to code into surface structures all relevant aspects of the earlier transformational history of moved phrases. Now clearly, trace theory and constraints such as TSC and SSC are logically independent. Nevertheless, a good deal of the plausibility for trace theory is intimately bound up with the plausibility of TSC and SSC, since, in practice, it is constraints such as these that are now taken to be "conditions on an enriched surface structure involving traces, instead of conditions on the application of rules" [14:317]. In light of the criticism that can be leveled against TSC and SSC, it may be appropriate now to rethink the feasibility of trace theory itself.

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REFERENCES


NOTES

1 See, for example, [14].

2 A number of relevant papers have appeared too late for discussion here: critical essays by Yagi [26], Ikeuchi [20], and Bach/Horn [1] for example, as well as Chomsky's most recent contribution [15], which further refines and revises the proposals appraised here.

3 Actually the treatment of Object Shift presented here reflects Chomsky's initial formulation. At a later point in the development of his conditions he reanalyzes Object Shift as two processes, thus obviating some of the initial development. The reanalysis is discussed below in subsection 3.2.5.

4 Rule (10) can be extended in the obvious way to allow this violin would be easy to play the Kreuzer sonata on.

5 A somewhat different analysis of Object Shift cases which is consistent with Bresnan's VP hypothesis is offered in [3]. Cf. also the exchange between Bresnan and Berman/Szamosi, which is discussed in [2].

6 Chomsky and Dougherty differ in important respects. Dougherty converts each of the candidates hated the other into the candidates hated each other by means of three distinct transformations—Quantifier Postposition, Quantifier Movement, and each other-Transformation. Dougherty provides an explicit formulation of all three rules. Chomsky apparently accepts a version of Dougherty's Quantifier Postposition while the distinction
between Quantifier Movement and each other-Transformation is blurred. These rules are not stated, and it is therefore difficult to determine precisely to what extent Dougherty's analysis is followed.

One basic objection to the movement approach to each other has been voiced by Postal, who cited the men talked to each other about each other as underivable under the movement assumption since the subject could give rise to only a single instance of each, cf. [24:72]. Additional arguments against movement are provided in Fiengo and Lasnik [18] and Brame [4]. In the latter it is shown that the putative arguments for movement are in fact strong arguments against it. Additional arguments against movement are also provided, including arguments against the Quantifier Postposition transformation that is accepted by Fiengo and Lasnik.

An obvious argument against movement here is the fact that reciprocals such as one another behave similarly, viz. *the boys think that Bill will fool one another, where there is no candidate for movement such as each. See Brame [4] for additional examples.

Apparent counterexamples are discussed in [6].

Here, as elsewhere in this paper, subscripts are utilized as a formal device to distinguish distinct occurrences of syntactic units, not as an indication of intended reference.

For more on the distinction, cf. Hust and Brame [19] and Lasnik [22].

I am following Chomsky [10] in assuming that John's is the subject of the NP construction.

A similar point is made in a somewhat different context by Bresnan [8:46].

The idioms differ from the until phrase in exhibiting full grammaticality in 'affective' contexts.

(i) a. Do you give a damn about your exam?
   b. Does it cut any ice whether you pass?
   c. *Will you leave until midnight?

(ii) a. If you give a damn, you'll pass that exam.
   b. If it cuts any ice, he'll tell us.
   c. *If he leaves until midnight, he'll tell us.

Excluding the "... at all" reading which is often possible in nonaffective contexts.

Throughout his paper, Chomsky assumes a notion of control which is never made explicit, citing Jackendoff [21] for clarification. But Jackendoff here provides no explicit analysis of how control is assigned; cf. [19] for discussion. It seems that some of the problems raised might resolve themselves automatically if control were made explicit. Control appears to be simply a name for a problem; its resolution involves taking seriously a program for working out Equi within an interpretive framework. See [3] for one proposal.

In earlier sections, I spoke of the restriction as one related to tensed S's, but the more general formulation is needed in view of examples such as (101d). If correct, this shows that reciprocal pronouns such as each other are not part of S complements in examples such as They expect each other to win. Thus, the evidence argues against Chomsky's anti-raising position; cf. [12]. However, as I have argued in [4], there is no rule of Raising as classically conceived. Thus, I take a position intermediate between Chomsky on the one hand, who argues against Raising but fails to adopt the correct surface structures, and Postal on the other, who adopts the correct surface structures, but fails to recognize that such structures are identical to the base structures, i.e. that Raising does not exist. Cf. [4] for detailed discussion.