

On the Global Nature of the Sentential Subject Constraint

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When the island constraints presented in Ross 1967 were first formulated, they were regarded as transformational in nature. Recent work indicates, however, that (at least) some of them are derivational in nature: they do not constrain transformations from applying, but they mark certain derivations as ill-formed. Ross 1969 and Koutsoudas 1973a present evidence that the Complex Noun Phrase Constraint is a derivational constraint. In this paper I present evidence that the Sentential Subject Constraint is a global derivational constraint, which is stated at the level of surface structure, but makes reference to earlier stages of a derivation.¹

The evidence depends upon prior assumptions about the nature of rule ordering. There is now an extensive literature which indicates that all rules are unordered--i.e. all constraints on the order of application are predicted by language-universal principles.² I find the evidence in favor of the Unordered Rules Hypothesis convincing, and will adopt it for the purposes of this paper. As a preliminary to further discussion, I present a summary of the basic principles of the Unordered Rule Hypothesis. These appear in Koutsoudas 1973b.

- (1) a. All restrictions on the application of rules are determined by universal principles (and hence there are no language-specific ordering restrictions between the rules of a grammar).
- b. An obligatory rule must apply whenever its structural description is met, unless its application is precluded by some universal principle. It follows from this requirement that rules will apply simultaneously if possible; otherwise they will apply sequentially.
- c. All rules are scanned for applicability to each new representation in a derivation.
- d. A derivation is terminated when no obligatory rules are applicable.

The relation between rule ordering and island constraints should be kept clearly in mind. Island constraints are defined on certain structural configurations, e.g. sentential subjects and complex noun phrases. There are some transformations which destroy the structures defining islands. For example, Extraposition from NP

and Relative Clause Reduction destroy complex noun phrases. As demonstrated by Koutsoudas 1973a, when complex noun phrases are destroyed, they maintain their integrity as islands: no elements may be moved out of them. This restriction may be expressed in global terms by saying that nothing may move out of a constituent if that constituent was under the domination of a complex NP node earlier in the derivation. In this case, once some node is an island, it remains an island.

Now let us consider the other logical possibility with respect to the destruction of islands. It could be the case that some node is an island, that the island is destroyed by the application of some rule,³ and that elements may then be moved out of the former island. Using extrinsic ordering, we could order all movement rules to apply after the rule (or rules) which could destroy the island in question. But using the Unordered Rules Hypothesis, some other approach must be taken.

The Sentential Subject constraint presents an example of just the sort that I have outlined in the paragraph immediately above. A sentential subject may be destroyed by the application of Extraposition, as shown in (2).

- (2) a. That John read the book is probable.
b. It is probable that John read the book.

When a sentential subject is destroyed, elements may be extracted from it. Compare (3) and (4).

- (3) a. *What is that John read probable?
b. *There is the book which that John read is probable.
- (4) a. What is it probable that John read?
b. There is the book which it is probable that John read.

Even if we were to use extrinsic ordering, we would face a serious problem with respect to (2)-(4). Each extrinsic ordering statement is an ad hoc statement for a particular pair of rules, and does not generalize to other pairs. Given that we must order Wh Q Movement after Extraposition (to account for 4a)), there is no reason why we should order Wh Rel Movement after Extraposition (to account for 4b)). Any extrinsic ordering of one rule before another carries with it implicitly the possibility that the order could be opposite to that actually found. It would then be completely accidental that all movement rules followed the rule(s) which could destroy a sentential subject. No explanation could be offered for the fact that all movement rules can operate on elements inside the former island.

Of course, adopting the Unordered Rules Hypothesis, we must find some other explanation for (2)-(4). I shall now sketch an alternative explanation wherein the Sentential Subject Constraint is viewed as a global constraint, stated at the level of surface structure, but making reference to earlier stages in a derivation.

I shall argue that the constraint is to be stated in the following way.

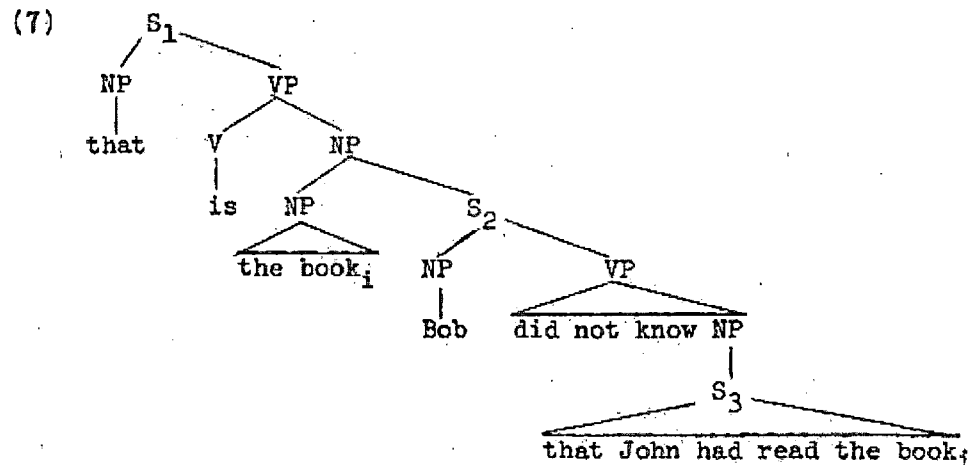
- (5) The Sentential Subject Constraint.
 Given a phrase marker containing a clause S' and a constituent C' , the derivation of that phrase marker is ill-formed if:
- in surface structure S' is a sentential subject,
 - C' is not under the domination of S' in surface structure,
 - in semantic structure, C' is under the domination of S' .

The sentences in (3) illustrate the fact that the presence of a sentential subject in surface structure is sufficient to block movement out of the subject clause. The sentences in (4) show that the presence of a sentential subject in deep structure is not sufficient to block movement, for (4a, b) are derived from structures in which the constituents that have been moved were under the domination of a sentential subject. Furthermore, there are rules which can create sentential subjects, such as Passive. The clauses which are moved into subject position by this rule are islands:

- (6) a. Bob did not know that John had read the book.
 b. That John had read the book was not known by Bob.
 c. *What was that John had read not known by Bob?
 d. *That is the book which that John had read was not known by Bob.

The above facts indicate that the presence of a sentential subject in surface structure is crucial.

Given the Unordered Rules Hypothesis, there is no restriction against applying movement rules to a clause before that clause has become a sentential subject. For example, consider the deep structure of (6d), which is given in (7).



There is nothing to block Wh Rel Movement from applying to move the book_i out of S₃. If we left things at this stage, the result would be:

- (8) That is the book which Bob did not know that
John had read.

But there is no restriction against going on to apply Passive to S₂ in (7) after Wh Rel Movement has applied, the result of which is (6d). There would be nothing to block (6d), and it should in fact be generable by a grammar which contains neither extrinsic ordering nor constraint (5). I claim that (6c, d) are ruled out because they violate the global constraint (5). I have already shown that the presence of a sentential subject in surface structure is crucial, so the constraint must be stated at that level. Furthermore, in the absence of extrinsic rule ordering constraints we have to know whether C' was under the domination of S' in semantic structure. Therefore, we have to make reference to earlier stages of a derivation.

There are alternatives to the formulation of the constraint as presented in (5), but they are less than optimal. To begin with, (3a, b) are acceptable because Extraposition has destroyed the sentential subject. We might try to make Extraposition obligatory, along the lines presented in (9).

- (9) Extraposition is obligatory if:
- a. there is a sentential subject, S', and some other constituent C' outside the domination of S';
 - b. C' was under the domination of S' earlier in the derivation.

The problems with (9) are twofold. First, making rules obligatory on the basis of derivational history is an extension of the power of global grammars. Constraints typically prevent the application of rules in certain cases. The application of a rule is determined by the structural description of the rule, and the optional or obligatory nature of the rule. If we can eliminate conditions which require that an optional rule become obligatory on the basis of derivational history, then we have limited the power of global rules. More damaging is the fact that Raising can destroy sentential subjects, as demonstrated in (10).

- (10) a. _S[That John will read the book]_S is certain.
b. John is certain to read the book.

Here the subject of S' has been raised into the higher sentence, and the remainder of S' has been shifted to the end of the higher sentence. If a sentential subject has undergone Raising, constituents may freely move out of it. Compare (11) with (12), where Raising has applied to the sentences in (12).

- (11) a. *What is that John will read certain?
(Wh Q Movement)
b. *That's the book which that John will read
is certain. (Wh Rel Movement)
c. *It's the book that that John will read is
certain. (Cleft Formation)
d. *What that John will read is certain is the
book. (Pseudo Cleft Formation)
- (12) a. What is John certain to read?
b. That's the book which John is certain to read.
c. It's the book that John is certain to read.
d. What John is certain to read is the book.

If we chose (9), we would have to make Raising obligatory under the same conditions given for Extraposition. In fact, we would have to repeat the constraint expressed by (9) for any rule which could destroy a sentential subject. But this repetition leaves unexplained why the constraint should apply to rules which destroy sentential subjects (based on the conditions (9a, b)) which will prevent the conditions expressed in (5) from existing. Repeating conditions (9a, b) for a set of rules does not express the connection which holds between the rules in the set. The crucial factor is whether or not a sentential subject exists in surface structure, something not expressed by (9), where it is derivative that the rule made obligatory happens to destroy a sentential subject. An outcome of this discussion is that it may be possible to add the following restriction to the class of global grammars:

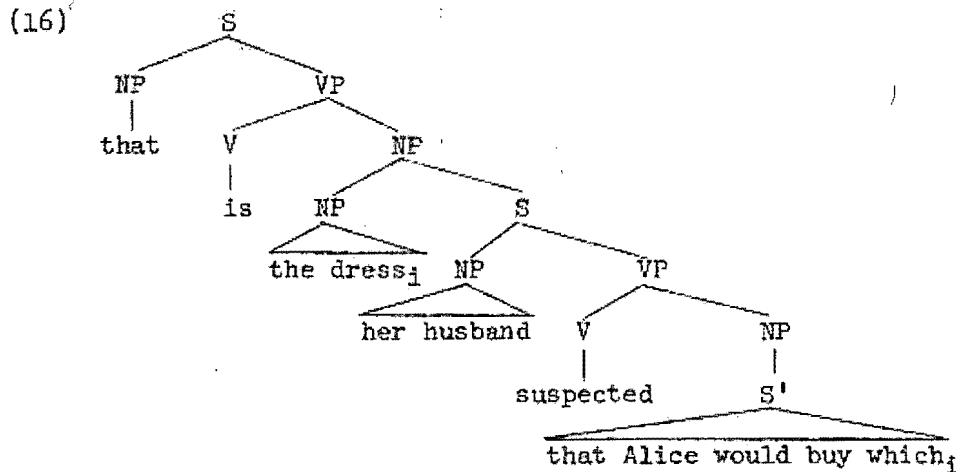
- (13) No rule may be made obligatory on the basis
of derivational history.

Another alternative to (5) is the constraint given in (14).

- (14) Given a clause S' and a constituent C' such that
a. C' is under the domination of S' and
b. S' will appear as a sentential subject in
surface structure, then C' may not be
moved out of S' .

The underlined restriction in (14) is necessary because of cases like (4), where a sentential subject is destroyed. It appears that (14) merely states constraint (5) in inverse terms. In (14) we are blocking a rule, but on the basis of 'future history'. But there is a conceptual flaw in (14). The deep structure of (15a, b) is as in (16).

- (15) a. *That is the dress which that Alice would buy
was suspected by her husband.
b. That is the dress which it was suspected by
her husband that Alice would buy.



Constraint (14) claims that nothing may be moved out of a clause that will appear as a sentential subject in surface structure. (15a) is blocked by this constraint, while (15b) is not. But consider more closely the case in which Wh Rel Movement is blocked from applying to (16) because Passive will later create a sentential subject. If we did not apply Passive, then the conditions for blocking Wh Rel Movement would not exist, and we should not have blocked Wh Rel Movement. In essence, Passive becomes obligatory on the basis of having blocked Wh Rel Movement. We would have to add another constraint making certain rules obligatory (just those which create sentential subjects) on the basis of constraint (14). In other words, we have to block Wh Rel Movement from applying to (16) because Passive must apply, where Passive must apply just because we blocked Wh Rel Movement from applying. The circularity, redundancy, and lack of insight of this analysis is obvious. I conclude that the proper way to express the necessary constraint is as in (5). The downfall of (14) leads me to suspect that another constraint may be added to the theory of global grammar:

- (17) No rule may be blocked on the basis of the future history of a derivation.

I have shown above that the Sentential Subject Constraint is global in nature. It should be noted that there is a surface structure constraint similar in nature to the Sentential Subject Constraint. In (18) and (19), the violation could not result from moving something out of a sentential subject.

- (18) a. *What is that John did surprising?
 b. What is it surprising that John did?
 (19) a. *I went out with a girl who that John showed up pleased.
 b. I went out with a girl who it pleased that John showed up.

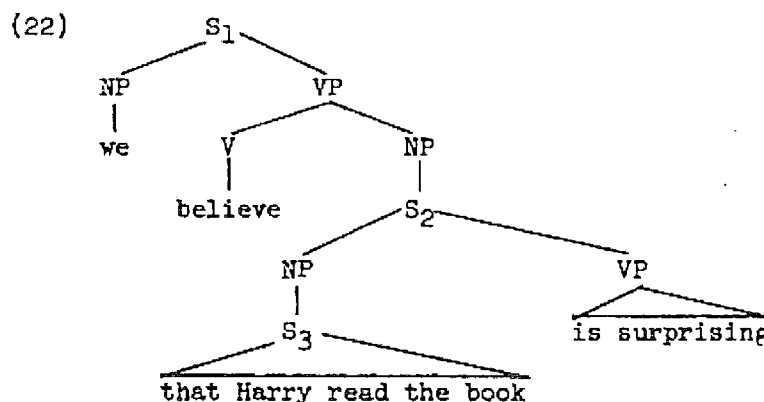
To account for the ungrammaticality of (18a) and (19a) Ross (1967:251)

proposed the following constraint:

- (20) The S-Internal NP Clause Constraint (SINPC²).
Grammatical sentences containing an internal NP which exhaustively dominates S are unacceptable, unless the main verb of that S is a gerund.

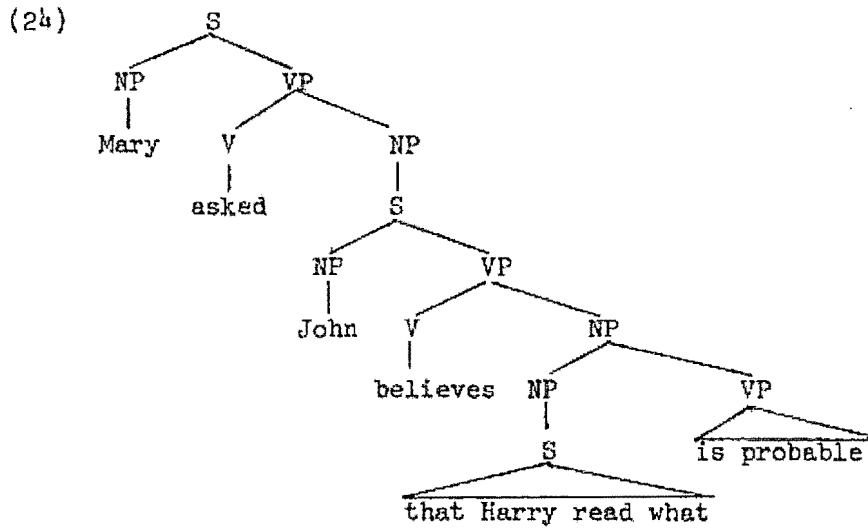
It might be claimed that all sentences which are putative violations of the SSC are actually violations of the SINPC². But the following considerations indicate that the SSC is necessary. The SINPC² refers to internal NP: for example, Subject-Aux Inversion in (18a) has caused the subject NP to become internal. Notice that in (22), the deep structure of (21), the sentential subject S₃ has material to both the left and right, but it is not clause-internal since it is the leftmost constituent of S₂.

- (21) We believe that Harry read the book is surprising.

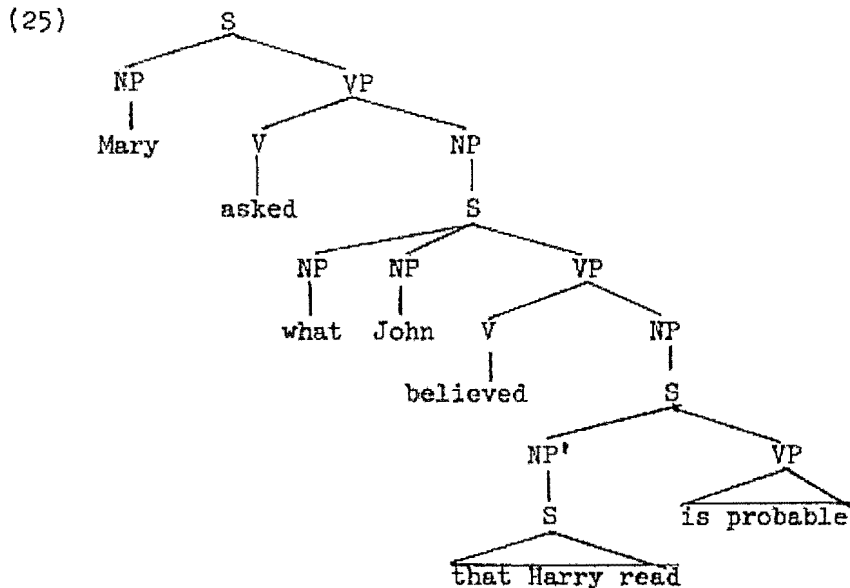


Now notice that in (24), the deep structure of (23), NP' is not clause-internal.

- (23) a. *Mary asked what John believes that Harry
read is probable.
b. Mary asked what John believes it is probable
that Harry read.



But in the structure derived from the application of Wh Q Movement (illustrated in (25)), NP' is not clause-internal either.



Since Wh Q Movement has an essential variable in its structural description it may move the wh-element to the left over any number of S boundaries. Therefore the wh-element can move over the S which dominates the NP complement that it originated in. By virtue of this property of Wh Q Movement, NP' in (25) does not appear as clause-internal in surface structure. It would appear that (23a) must be blocked because something has moved out of a sentential subject, and that the Sentential Subject Constraint is necessary.⁵ Given that the constraint is needed in the grammar of English, the evidence that I have given here indicates that it is global in nature.

Notes

1. The Sentential Subject Constraint was defined by Ross 1967:134 as follows:
 No element dominated by an S may be moved out of that S if that node S is dominated by an NP which itself is immediately dominated by S.
2. For a discussion of the rule ordering issue see Koutsoudas 1973a, 1973b, Lehmann 1971, Ringen 1972.
3. When I say that a transformation 'destroys' a sentential subject I mean that it alters the phrase marker so that the former sentential subject is no longer in subject position. Likewise, when I say that a transformation 'creates' a sentential subject, I mean that the rule moves a sentence into subject position.
4. It would be possible to order Wh Rel Movement after Passive, so that a sentential subject would be present at the point that Wh Rel Movement applies. But in the absence of extrinsic ordering, this option must be rejected.
5. Ross 1967:134-8 gives two other pieces of evidence that the SSC should be included in the grammar of English.

References

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