

The Complex NP Constraint in Swedish

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1. Movement Constraints In Swedish and Norwegian

One of the fundamental ideas in generative grammar has been that man possesses a partly innate system of language, his so called linguistic competence. The most important part of competence is a set of syntactic rules that determine the structure of the sentences in a language. In describing these rules it is not adequate simply to describe the rules themselves. To characterize a possible human language one must say what is impossible just as much as what is possible.

To this end, a number of universal restrictions on syntactic rules have been proposed. Chomsky (1964) suggested that all rules follow the A-over-A principle, such that if a constituent of type A is dominated by another, also of type A, then no rule concerning an unspecified A can be applied to the dominated A without also being applied to the dominating A.

JA. Ross (1967) showed that the A-over- A principle was both too strong and too weak, since it excluded good sentences and permitted ungrammatical ones. Instead, Ross proposed four formalized and one unformalized restriction on the variables that occur in syntactic rules. These constraints mainly concerned movement rules and were named for the syntactic constructions out of which they prevented all movement: 1) Complex NP's 2) Sentential Subjects, 3) Coordinate Constructions, 4) Left Branching Constructions, 5) Prepositional Phrases in NP's.

Various authors have criticized Ross and said that his constraints are not general enough or that they are too unsystematic from a theoretical point of view. Interesting attempts to replace all or some of them have been made by S. Kuno, A. Grosu, N. Chomsky and G. Horn amongst others.

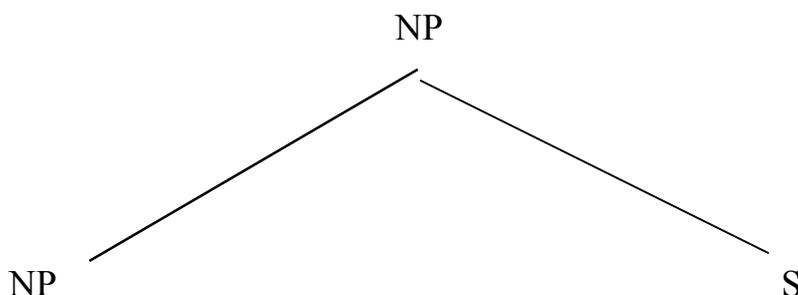
Kuno (1973) suggested a restriction on non-complete constituents in non-final S position, which he intended to replace Ross's constraints on sentential subjects and also to handle new data about movement from non-final PP's and subjects which are not sentential. Grosu (1972), taking as his point of departure general strategies of perception, formulated a restriction on what he called "nucleus and satellite

constructions". In this way he intended to replace Ross's restrictions on Complex NP's and coordinate structures, and at the same time to give an account of some data concerning movement out of adverbial phrases and sentences. Chomsky (1973) has tried to replace all of Ross's constraints with a set of conditions on the application of syntactic rules. Finally, Horn (1974) has argued for a general restriction against movement out of NP's. This constraint is intended to replace most of the above mentioned constraints to the extent that they concern NP's.

For all of the authors that have been mentioned here it holds that they intended to propose constraints that are valid for all human languages. The constraints, that is, are intended to characterize something essential about human linguistic ability. To this end the constraints have to a large extent been argued for by means of data from a number of different languages and language families. It is therefore of interest to note that we find among the Nordic languages Swedish and Norwegian many examples of sentences that ought to have been completely excluded by the restrictions we have mentioned. These sentences are the so-called *satsflätor*, which are complex sentences where a part of S. has been moved from one sentential constituent into another one.¹ Such sentences are accepted in some form by most speakers of Swedish and Norwegian and are primarily used to put a non-initial constituent into sentence-initial position in conjunction with topicalization and focusing. They are more common in spoken than written language, being considered too informal in written usage. However, the degree of acceptability also varies in spoken language and to some extent seems to be regionally differentiable.

As a point of departure for the discussion to follow I shall take those restrictions that have been formulated by (1) Ross for complex NP's (CNPC) and for pied-piping (PPC), and (2) Horn more generally for all transformational movement out of NP's. However, the conclusions that will be drawn are also relevant for the constraints formulated by Chomsky, Kuno and Grosu.

Ross defined a complex NP as an NP which has as daughter nodes an NP followed by an S:



According to all the authors mentioned above, one cannot move constituents out of configurations of this sort. Let us therefore investigate a number of *satsflätor* that involve complex NP's. These sentences have all been judged acceptable² by a

number of Swedish or Norwegian speakers (for the Norwegian speakers, Norwegian equivalents of the sentences were used). West Swedish and Norwegian speakers have a greater propensity to accept the sentences than speakers from East and Southern Sweden. Further, it holds that all speakers had the sentences presented to them orally and therefore have given their judgements for spoken (but not necessarily written) language.

Complex NP's in Swedish are mainly of three kinds (English glosses will be provided in square brackets for all Swedish example sentences):

- (1) NP plus relative clause: Mannen som kysste Stina.
[The man who kissed Stina]
- (2) NP plus *that*-S: Påståendet att Alexander hatade Aristotles.
[The statement that Alexander hated Aristotle]
- (3) NP plus **if/whether/about S3**.
Frågan om Atlantis verkligen försvann.
[The question whether Atlantis really disappeared]

By embedding complex NP's of this kind in a superordinate sentence while at the same time moving a constituent out of the Complex NP, one can create *satsflätor* of different types. The movement rules I have used are Topicalization (T), Question Formation (Q) and Relative Clause Formation (R). Traditionally in Swedish grammar in the discussion of *satsflätor* only topicalization has been treated, which is then usually described as giving emphasis, or as forward movement of the psychological subject of the sentence. However, below we will give a number of different *satsflätor* which contain movement out of a complex NP, not all dependent on Topicalization.

- (4) The head noun of an embedded intransitive relative clause is topicalized, questioned, or relativized.⁴
- a. Jag känner en man som är stark.
[I know a man who is strong]
- (T) b. En man känner jag som är stark.
[A man know I who is strong]
- c. Vem känner jag som är stark?

- (Q) [Who know I who is strong (?)]
- d. En man som jag känner som är stark.⁴...(är här)
- (R) [A man who I know who is strong ...is here]

(5) The head noun of an embedded transitive relative clause is topicalized, questioned or relativized.

- a. Jag känner en pojke som har kysst Lisa.
[I know a boy who has kissed Lisa]
- (T) b. En pojke känner jag som har kysst Lisa.
[A boy know I who has kissed Lisa]
- c. Vem känner jag som har kysst Lisa?
(Q) [Who know I who has kissed Lisa (?)]
- d. En pojke som jag känner som har kysst Lisa ...
(R) [A boy who I know who has kissed Lisa ...]

(4) The object is moved out of an embedded transitive relative clause.

- a. Jag ser en hund som gnager på ett ben.
[I see a dog who is-gnawing on a bone]
- (T) b. Ett ben ser jag en hund som gnager på...
[A bone see I a dog who is-gnawing on]
- (Q) c. Vad ser jag en hund som gnager på ?
[What see I a dog who is-gnawing on(?)]
- (R) d. Ett ben som jag ser en hund som gnager på...
[A bone which I see a dog who is-gnawing on ...]

(4) The object head noun of an embedded transitive relative clause is topicalized, questioned or relativized.

- a. Jag har en bil som Kalle har haft.
[I have a car which Kalle has had]

- (T) b. En bil har jag som Kalle har haft.
[A car have I which Kalle has had]
- (Q) c. Vad har jag som Kalle har haft?
[What have I which Kalle has had (?)]
- (R) d. En bil som jag har som Kalle har haft ...
(A car which I have which Kalle has had ... 1

(8) The subject head noun, the direct object, the indirect object and the adverbial of an embedded relative clause is topicalized, questioned or relativized.

- a. Jag känner till en flicka som gav en pojke en kyss på Röda Torget.
[I know of a girl who gave a boy a kiss in (the) Red Square.]
- (T) b. En flicka känner jag till som gav en pojke en kyss på Röda Torget.
[A girl know I of who gave a boy a kiss in Red Square]
- (T) c. En pojke känner jag till en flicka som gav en kyss på Röda Torget.
[A boy know I of a girl who gave a kiss in Red Square]
- (T) d. En kyss känner jag till en flicka som gav en pojke på Röda Torget.
[A kiss know I of a girl who gave a boy in Red Square]
- (T) e. På Röda Torget känner jag till en flicka som gav en pojke en kyss.
[In Red Square know I of a girl who gave a boy a kiss]
- (Q) f. Vem känner jag till som gav en pojke en kyss på Röda Torget?
[Who know I of who gave a boy a kiss in Red Square (?)]
- (Q) g. Vem känner jag till en flicka som gav en kyss (till) på Röda Torget?
[Who know I of a girl who gave a kiss (to) in Red Square (?)]
- (Q) h. Vad känner jag till en flicka som gav en pojke på Röda Torget?
[What know I of a girl who gave a boy in Red Square (?)]
- (Q) i. Var känner jag till en flicka som gav en pojke en kyss?
[Where know I of a girl who gave a boy a kiss(?)]
- (Q) j. En flicka som jag känner till som gav en pojke en kyss på Röda Torget ...
[A girl who I know of who gave a boy a kiss in ...]
- (R) k. En pojke som jag känner till en flicka som gav en kyss på Röda Torget ...
[A boy who I know of a girl who gave a kiss in ...]

(R) l. En kyss som jag känner till en flicka som gav en pojke på RödaTorget ...
[A kiss which I know of a girl who gave a boy in ...]

(R) m. En plats där jag känner till en flicka som gav en pojke en kyss ...
[A place where I know of a girl who gave a boy a kiss ...]

(R)

(9) The subject and the object from a *that-S* dominated by an NP is topicalized, questioned or relativized.⁶

a. Herodes levde i hoppet om att Salome skulle förföra den mannen.
[Herod lived in the hope of that Salome should seduce that man]

(T) b. Salome levde Herodes i hoppet om att skulle förföra den mannen.
[Salome lived Herod in the hope of that should seduce that man]

(T) c. Den mannen levde Herodes i hoppet om att Salome skulle förföra.
[That man lived Herod in the hope of that Salome should seduce]

(Q) d. Vem levde Herodes i hoppet om att skulle förföra den mannen?
(Who lived Herod in the hope of that should seduce that man (?))

(Q) e. Vem levde Herodes i hoppet om att Salome skulle förföra?
[Who lived Herod in the hope of that Salome should seduce (?)]

(R) f. Salome som Herodes levde i hoppet om att skulle förföra den mannen ...
[Salome who Herod lived in the hope of that should seduce that man ...]

(R) g. Den mannen som Herodes levde i hoppet om att Salome skulle förföra ...
[That man who Herod lived in the hope of that Salome should seduce..]

(10) The subject and the object are topicalized, questioned or relativized out of an *if/whether-S* embedded under an NP.

a. Jag hade en stilla undran om Stina verkligen sett Pelle.
[I had a quiet wonder if Stina really had-seen Pelle]
(roughly in English: "I wondered to myself if. . .").

(T) b. Stina hade jag en stilla undran om verkligen sett Pelle.
[Stina had I a quiet wonder if really had-seen Pelle]

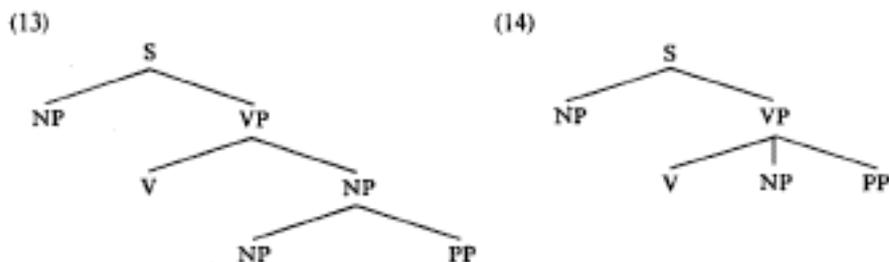
- (T) c. Pelle hade jag en stilla undran om Stina verkligen sett.
[Pelle had I a quiet wonder if Stina really had seen]
- (Q) d. Vem hade jag en stilla undran om verkligen sett Pelle?
[Who had I a quiet wonder if really had-seen Pelle (?)]
- (Q) e. Vem hade jag en stilla undran om Stina verkligen sett?
[Who had I a quiet wonder if Stina really had-seen (?)]
- (11) f. Stina som jag hade en stilla undran om verkligen sett Pelle ...
[Stina who I had a quiet wonder if really had-seen Pelle ...]
- (11) g. Pelle som jag hade en stilla undran om Stina verkligen sett ...
[Pelle who I had a quiet wonder if Stina really had seen ...]

Far from all the sentences in (4)-(10) are accepted by all speakers (though some speakers may, of course, individually accept them all). But sufficiently many are accepted by most speakers for us to be able to claim that, for example, the constraints formulated by Ross and Horn against movement from NP's cannot hold. That is, they do not hold as universal restrictions on syntactic rules, even though of course they could be valid for those specific languages for which they were originally proposed (particularly English).

Consider the only sorts of ways in which this conclusion might be avoided. One such way would be to claim that the sentences above do not contain any complex NP's. Horn (1974) for example tries to show in this way that what seems to be a violation of his general constraint on movement out of NP's is not after all such a violation. Horn wants to explain how it is possible that (11 1), which seems to violate his general NP constraint, is completely acceptable.

- (11) Vem skrev Pelle en bok om?
[Who wrote Pelle a book about?]
- (12) Pelle skrev en bok om Einstein.
[Pelle wrote a book about Einstein]

Horn explains the anomaly by claiming that (12) above has two structures, namely (13) and (14) below, associated with it:



A sentence like (11) is to be derived from a structure like (14). However structures like (13) do not allow any movement. This is supposed to explain according to Horn, why one cannot say a sentence like (15) below. This will follow because (16) has only one structure of type (13), (15) is derived from (16), and thus (15) also has underlying structure (13) from which, once again, movement is not a possibility:

(15) Vem förstörde Pelle en bok om?
 [Who destroyed Pelle a book about (?)]

(16) Pelle förstörde en bok om Einstein.
 [Pelle destroyed a book about Einstein]

About this the following can be said for Nordic languages. First, seems that many speakers are able to say (15) in Swedish⁷ which, if Horn is right about the structure of (16) means that we have here another violation of the constraint on movement from NP. Second, if (16) were, on the other hand to have a structure like (14), one starts to wonder about the criteria that are supposed to be used in assigning NP's such as (12) and (16) a constituent structure.

The most common criteria for constituent structure tests rely on pause and intonation patterns, possibility of substitution, or possibility of functioning as a unit in a syntactic process. Especially the last criterion is extensively used in generative grammar. If we use this criterion on the constituents that have been presented as complex NP's in (4)-(10), their analysis as complex NP's is confirmed. So, for example, we can let the passive, relative, question, pseudo-cleft, cleft and topicalization transformations (all of which apply typically to an NP) operate on (6) to show that it must contain a complex NP:

(17) Jag ser en hund som gnager på ett ben.
 [I see a dog who is-gnawing on a bone]

passive: En hund som gnager på ett ben ses av mig.
 [A dog who is-gnawing on a bone is-seen by me]

relative: En hund som gnager på ett ben som jag ser springer utanför.
 [A dog who is-gnawing on a bone who I see is-running outside]

- question:* Vad (vem) ser jag?
[What see I]
- pseudo-cleft:* Vad jag ser är en hund som gnager på ett ben.
[What I see is a dog who is-gnawing on a bone]
- cleft:* Det är en hund som gnager på ett ben jag ser.
[It is a dog who is- gnawing on a bone I see]
- topicalization:* En hund som gnager på ett ben ser jag.
[A dog who is-gnawing on a bone see I]

Considering the sentences in (17), I do not think it is possible to reanalyze the sentences in (4)-(10) in a way that resembles the one that Horn has proposed for (12). It seems plausible that for speakers who accept the sentences in (4) -(10) we really are concerned with a violation of the constraints on movement out of NP'S.⁸ How is this to be explained?

Most speakers more easily accept sentences with moved head NP's than sentences where constituents have been extracted from the clause modifying the head. This conforms to our expectations, since we would anticipate that these sentences would be derived in a very regular way by first fronting the whole complex NP and then applying extraposition from NP to move the modifying clause into another position. However, this alone is not sufficient to account for all of the acceptability judgements in (4) -(10). We would therefore expect there to be other factors which also influence the acceptability of these sentences.

Amongst other things, for example, we might expect that the predictions made by Keenan and Comrie (1972) about accessibility of NP's in different syntactic positions could be valid⁹ Keenan and Comrie suggest the following accessibility hierarchy (where ">" means "is more easily moved out"):

- (18) subject > direct object > indirect object > object of prep. > possessive NP > object in comparative position (e.g. *The man who John is taller than)

If we disregard movement of the head NP, we would expect the following acceptability ranking of the sentences in (8) above (where ">>" means "is more acceptable than"):

(8d)(d.o. movement) >> (8c)(i.o. movement) >> (8e)(adverbial movement)

(80 - (8i) and (8j) - (8n) could then be ranked in a similar way.

However the order of (8c), (8d) and (8e) seems to have no importance for most speakers (although it may accord with the intuitions of some individuals). The sentences are roughly of the same level of acceptability. Furthermore, the hierarchy is unable to account for differences in acceptability between sentences in which the relative pronoun of the complex NP is the subject of the clause, and-sentences where it is not. If the head NP of a relative clause is not coreferential with the subject of the clause, topicalization out of the relative clause drastically diminishes in acceptability and in fact becomes unacceptable for most speakers. Compare pare (I 9b) -(I 9c), (20b) - (20c), and (21b) -(21c) all of which are bad for most speakers.

(19) Movement from an embedded relative clause with a direct object relative pronoun.

- a. Jag känner till en bok som en flicka gav en pojke.
[I know of a book which a girl gave a boy]
- b. En flicka känner jag till en bok som gav en pojke.
[A girl know I of a book which gave a boy]
- c. En pojke känner jag till en bok som en flicka gav.
[A boy know I of a book which a girl gave]

(20) Movement out of an embedded relative clause with an indirect object relative pronoun.

- a. Jag känner till en pojke som en flicka gav en bok.
[I know of a boy who a girl gave a book]
- a. En flicka känner jag till en pojke som gav en bok.
[A girl know I of a boy who gave a book]
- b. En bok känner jag till en pojke som en flicka gav.
[A book know I of a boy who a girl gave]

(Sentence (20b) is acceptable to many speakers but this is due to the fact that the sentence can be reanalyzed so that *pojke* is experienced as the subject and no longer as the indirect object.)

(21) Movement out of an embedded relative clause with an adverbial relative pronoun.

- a. Jag känner till en stad där en flicka gav en pojke en bok.
[I know of a town where a girl gave a boy a book]
- b. En flicka känner jag till en stad där gav en pojke en bok.
[A girl know I of a town where gave a boy a book]

- c. En bok känner jag till en stad där en flicka gav en pojke.
[A book know I of a town where a girl gave a boy]
- d. En pojke känner jag till en stad där en flicka gav en bok.
[A boy know I of a town where a girl gave a book]

From this two conclusions might be drawn:

(22)

- (a) The Keenan-Comrie hierarchy cannot be extended from relativization in simple sentences to movement out of complex NP's, whether these have a relativized subject (there is no difference in acceptability for the sentences in (8)) or a relativized non-subject (the sentences in (19) -(21) are to most speakers totally unacceptable). The Keenan-Comrie hierarchy is simply unable to explain these data.
- (b) Movement which gives rise to *satsflätor*, which violate the constraints we are concerned with in this paper only takes place when the head NP *of* the relative clause corresponds to the subject of the relative clause (as in sentences (6) and (8)).

Furthermore, for many speakers, sentences of the type shown in (9b) and (10b) are less acceptable than sentences of the type shown in (9a) and (10a). In (9b) the subject has been moved out of the complex NP containing an embedded *that*-S, and in (10b), out of a complex NP with an embedded *if/whether*-S. In (9c) and (10c) by contrast the object has been moved. If both these observations are correct, one could, whilst keeping in mind that far more speakers accept movement of a subject out of an *att* or *om* clause than accept movement out of a relative clause with a non-subject relative pronoun, hypothesize that the subject must be retained in a complex NP. Thus constituents other than the subject in the embedded sentence can be moved out in clear violation of constraints of the Ross type, but the subject cannot be moved out acceptably.

In sum, with regard to Swedish and Norwegian, Ross's Complex NP Constraint does not hold, nor do those constraints suggested by Chomsky, Horn and others as replacements for the CNPC apply to Nordic languages. The major syntactic constraint applicable to Nordic movement rules seems, in fact, to be the following:

(23) *The Complex NP Subject Constraint.*

The subject constituent cannot be moved out *of* a sentence which is embedded in a complex NP.

This conclusion indicates that much research needs to be done on movement rules in non-English languages before syntactic competence theories based on attempts to account for the Ross constraints can be assumed to be other than strictly languages specific. Further, since the major syntactic work to date concerned with accounting for acceptability judgements on movement rules (that of Keenan and Comrie) is inapplicable to the more complex Swedish *satsflätor*, it seems to be well worthwhile to look at factors other than syntactic ones to see how they might interact with linguistically universal accounts of acceptability judgements.

The next section of this paper will therefore be devoted to exploring some of the regularities which exist in Swedish acceptability judgements for *satsflätor*, and I shall attempt to argue that such regularities must minimally take into account both pragmatic and semantic factors in addition to the possible syntactic factors discussed above.

2. Non-Syntactic Factors and Judgements of Acceptability

An initial factor in the acceptability of movement from complex NP's is the definiteness of the extracted NP. Demonstrative NP's are much better than indefinite ones. Compare (24) with (25), and (26) with (27):

- (24) Den flickan känner jag en pojke som har kysst.
[That girl know I a boy who has kissed]
- (25) En flicka känner jag en pojke som har kysst.
[A girl know I a boy who has kissed]
- (26) Den boken vet jag om en flicka som har köpt till Pelle.
[That book know I of a girl who has bought for Pelle]
- (27) En bok vet jag om en nicka som har köpt till Pelle.
[A book know I of a girl who has bought for Pelle]

Furthermore, the choice of the verb seems to influence acceptability. Some speakers who cannot accept (28) can accept (29); (30) and (31) are even easier than (29) to accept; but (32) is much more difficult for most speakers.

- (28) De blommorna tänker jag på en man som vattnar.
[Those flowers think I of a man who is-watering]
- (29) De blommorna tänker jag på en man som sköter.
[Those flowers think I of a man who tends]
- (30) De blommorna känner jag en man som säljer.

[Those flowers know I a man who sells]

(31) De blommorna ser jag en man som vattnar.
[Those flowers see I a man who is-watering]

(32) De blommorna talar jag med en man som säljer.
(Those flowers talk I with a man who sells]

It would be a mistake to try to explain the variation in acceptability demonstrated here solely in syntactic terms, since both semantic and pragmatic factors seem to be involved. Let us study some of these factors. While many speakers accept (33), hardly anyone accepts (34a):

(33) Den pojken talar jag med som kysst Lisa.
[That boy speak I with who has-kissed Lisa]

(34) a. Lisa talar jag med den pojken som kysst.
Lisa talk I with that boy who has-kissed]

Some of the explanation for this becomes clearer if we study (34b):

b. Jag talar med den pojken som kysst Lisa.
[I talk with that boy who has-kissed Lisa]

This sentence asserts that certain relation holds between me and a boy whose properties are indicated by the relative attribute. This relation can be maintained in spite of the topicalization of *den pojken* in (33), but is lost in (34a) since *Lisa* through topicalization there becomes the preferred object of *tala* and is thus weakened as the object of *kyssa*. If we instead choose verbs that can be directed toward whole states of affairs, the acceptability increases.

(35) Lisa vet jag om en pojke som kysst.
[Lisa know I of a boy who has-kissed]

(36) a. Jag ser en man som vattnar de blommorna.
[I see a man who waters those flowers]

b. De blommorna ser jag en man som vattnar.
[Those flowers see I a man who waters]

Since *känna till*, *se* and *veta om* can designate relations both to singular objects and states of affairs, the topicalization of the objects will only mean that a different constituent than the head noun of the relative clause will be brought into focus first. The truncated relative clause will not seem disconnected since the verb is semantically directed toward the whole state of affairs being described. This also explains why (33) is better than (34). In (33) the head NP of the relative attribute is

topicalized. Therefore no new object of *tala will* be brought into focus. However, this does become the case when the object NP *Lisa is* topicalized. Since it is difficult to imagine any verb that would designate a relation between a subject and any other constituent than the *head* noun of the relative clause, we also obtain independent explanation of why movement of constituents other than head nouns is less acceptable than head noun movement itself.

As we have seen, it is here important to note that it is the head noun, rather than the subject of the relative clause, that is easier to move. If any constituent other than the subject is the head noun, this becomes very clear. In (37a) the object of the relative clause is the head noun. Then the object is topicalized in (37b), resulting in an S that many speakers accept. If we instead move the subject of the relative clause, we obtain (37c), which no one accepts:

- (37) a. Jag har en bil som Kalle har haft.
[I have a car which Kalle has had]
- b. En bil har jag som Kalle har haft.
[A car have I which Kalle has had]
- c. Kalle har jag en bil som har haft.
[Kalle have I a car which has had]

A tentative conclusion which might be drawn from this discussion is that movement out of a complex NP either

- (a) preserves semantic relations between the main subject and the head noun of the relative clause, which is the case when the head noun is moved (or, alternatively, the relative clause is extraposed); or
- (b) takes place in sentences which contain verbs that can tolerate a change of meaning from being directed toward singular objects to being directed toward states of affairs. If (36a) is compared with (36b) we can note this type of meaning change.¹⁰

Besides semantic factors such as these, pragmatic factors seem to affect acceptability. For everyone who accepts the types of *satsflätor* we have described, it holds insofar as they can envision a suitable context for the sentence in question. Since the movement processes we have been describing always in one way or another involve focusing or topicalization, the context most speakers envision is some kind of a question. It is easier to accept (38) and (39) if one is first presented with the question in (40) and (41) than if one is presented with these sentences *in vacuo*.

- (38) En sköldpadda känner jag en flicka som kysste.
[A tortoise know I a girl who kissed]
- (39) En sköldpadda vet jag som kysste en flicka.
[A tortoise know I who kissed a girl]
of
- (40) Känner du någon som kysst ett djur?
[Know you anybody who kissed an animal (?)]
- (41) Känner du till något djur som kysst en människa?
[Know you of any animal which kissed a human-being (?)]

If one cannot think of a context (e.g. a suitable question) which makes it plausible to topicalize or focus a given constituent in a sentence, one is unwilling to accept that sentence. (27') is difficult to accept for most speakers, but is better if it is construed as the denial of (42) with the appropriate intonation.

- (42) Pelle har aldrig haft en enda bok.
[Pelle has never had a single book]
- (27') Nä, du har fel, för en bok vet jag om en flicka som har köpt till Pelle.
[(No, you are wrong, since a book know I of a girl who has bought for Pelle)]

Thus one must in some way see that the topicalization has some reasonable purpose; otherwise acceptability is reduced. If this requirement is met, it seems that most speakers are willing to accept rather complex *satsflätor*. Since such *satsflätor*, when of generated, are always generated in discourse contexts (see above for comments on these sentences as chiefly spoken rather than written phenomena), it is apparent that this is one of the primary factors involved in their generation.

It is worth noting that it does not help in Swedish to rephrase the Ross constraints themselves as semantic restrictions, and to attempt to account for the data in that way. One might, for example, want to say that no constituent part can be extracted from a referential unit. (By "referential unit" is meant an expression where all attributes are necessary for identifying or referring to a certain object in the world: i.e. the attributes are restrictive.) Such a step would, in view of our *satsflätor*, force us to say that the process of topicalization does not entail the breaking up of a referential unit.

I think that both of these conclusions may be relevant up to a point in considering Swedish acceptability judgements, at least in a modified form, but the difficulty is that they tend to reinforce the conclusion that the Ross constraints are not universal. Let us first look at the breaking up of referential units. In the natural restrictive interpretation of (43) the head noun and the relative clause constitute a

referential unit. The relative attribute is used to specify a certain man with whom I am acquainted. In (44) a non-restrictive interpretation seems more natural, paraphrasable by "a man I know, who, by the way, sells flowers":

(43) Jag känner en man som säljer blommor.
[I know a man who sells flowers]

(44) En man känner jag som säljer blommor.
[A man know I who sells flowers]

However, if we compare (45), (46) and (47) below, we see that it is not possible without qualification to draw the conclusion that topicalization of the head noun breaks up referential units.

(45) En hund ser jag som gnager på ett ben.
[A dog see I who is-gnawing on a bone]

(46) Den hund ser jag som gnager på ett ben.
[The (particular¹¹ dog see I who is-gnawing on a bone]

(47) Den hunden ser jag som gnager på ett ben.
[That dog see I who is-gnawing on a bone]

Even though a non-restrictive interpretation seems natural for (45), the restrictive interpretation seems more natural for (46) and for (47), especially if *ser* is stressed. In other words, topicalization does not appear to destroy referential unity in these cases in spite of the lack of syntactic contiguity.

This result is not surprising, since we already noted that topicalization of head nouns does not entail any semantic change. However it is somewhat surprising that contiguity seems to be required for head nouns which are indefinite. Even if a restrictive interpretation perhaps is possible in (45), the most natural interpretation is non-restrictive.

As we might expect, verbs like *se*, *veta om*, *tro* [believe] and *hoppas* [hope], which can designate relations both towards singular objects and whole states of affairs, tolerate the breaking of a referential unit better than verbs such as *tala* or *känna*. This is in conformity with our prior observation that such verbs permit more extreme violation of the Complex NP Constraint than do verbs directed toward singular objects alone. Other factors appear to be involved in the referential unity question, however. A strange fact is that many speakers find (48) better than (49):

(48) De blommorna känner jag en man som säljer.

[Those flowers know I a man. who sells]
(This roughly answers the question "Do you know where I can get some flowers like that?", especially if prefixed by "Yes,")

- (49) De blommorna talar jag med en man som säljer.
[Those flowers talk I with a man who sells]
(As an answer to the above-mentioned question, this sentence is difficult to accept.)

Both *känna* and *tala* seem to be directed toward singular objects and ought therefore to exhibit an equal requirement of referential unity. In my view they do, but they also exhibit pragmatic differences. If one is interested in flowers, it is relevant to know who sells them, but it is scarcely relevant to find out the character of the relation, which I have with the flower salesman. *Känna* designates a relation between me and the flower salesman of relevance to those who are interested in flowers. *Tala* also designates such a relation, but conveys additional irrelevant information which withdraws attention from the flowers. These differences between *känna* and *tala* enable *känner jag en man som säljer* [know I man-who sells] to function perfectly well as the pseudo-predicate (i.e. the comment) of *de blommorna*, while *talar jag med en man som säljer* [talk I with a man who sells] cannot.

Generally speaking, this is probably the most decisive factor in determining the acceptability of topicalized sentences. Everything in the sentence except for the topicalized constituent must be interpretable as reasonable predication (comment) of the referent of the topicalized constituent. Thus pragmatic factors like those discussed in Grice's 1975 "Maxims of Conversation" seem to influence the acceptability of *satsflätor*. In the example above, it seems to be the maxim of relation with its "relevance" requirement that is most clearly applicable.

Our discussion of referential unity could be summarized in the following way. For most speakers, sentences that contain verbs requiring referential unity (i.e., verbs that can only be directed toward singular objects) become less clearly acceptable if a constituent is moved in such a way as to destroy that unity. Movement out of a restrictive attribute generally seems to have this effect, but movement of a relative head does not necessarily. This holds especially for heads with definite or demonstrative articles, (compare (45) with (46) and (47), and also holds if the verb in the main clause does not require referential unity (i.e., may be directed toward states of affairs as well as singular objects). We can thus keep referential unity even if the verb allows a change of meaning so that it is directed toward a state of affairs (compare (46) and (47)). For verbs that do not require referential unity, the acceptability is less affected by the breaking up of referential units. One should note that a change of meaning (when an interpretation with referential unity becomes impossible), often takes place in sentences that contain such verbs. Compare, for example, (6a) with (6b). Movement out of non-head

position seems in all cases to break referential unity. Sentences that have been produced through such movement are therefore more acceptable if they contain verbs which do not require referential unity. Their acceptability can also be improved by pragmatic factors such as those in (48) and (49).

From the above, it is clear that semantic phenomena like referential unity and semantic type of verb are important for explaining topicalization out of complex NP's in Swedish. However, as was earlier pointed out, the fact that we are using semantic phenomena in an explanation does not thereby mean that we have obtained a universally valid explanation. Even though the Swedish verb *se* tolerates the destruction of referential units, and the English verb *see*, like its Swedish counterpart, can be directed either toward states of affairs or individuals, the English sentence (50) is clearly less acceptable than its Swedish equivalent (51).

(50) A bone, I see a dog that is eating.

(51) Ett ben ser jag en hund som äter.
[A bone see I a dog who eats]

3. General Comments

Given that the Complex NP Constraint is not a universal constraint on grammars, the puzzling question to be answered is what distinguishes those languages in which the constraint applies (e.g. English) from those in which it does not generally apply (e.g. Swedish). It seems likely that a more thorough investigation of the differences between Swedish and English complementizer structure may produce part of the answer (see fns 3 and 4).

More speculatively, A. Grosu has tried to explain the Ross' constraints through universal restriction on human perception. We could perhaps draw the conclusion from this that to some extent linguistic perception is conventionally determined. This is certainly the case with phonological rules, for example, since our perceptions of sounds in other languages are initially determined to a large extent by our knowledge of the phonological rules of the language(s) of which we are native speakers. Topicalization is a much more extensive rule of sentence formation in Swedish than it is in English (where it seems to be chiefly dialectal or regional). Since Swedish speakers are so thoroughly accustomed to topicalization, it may be that this conventionally permits us to perceive as acceptable (and certainly as interpretable) many *satsflätor* which a language with less common topicalization could not tolerate. In this sense even our syntactic perception, at least in some respects, might be to some extent conventionally determined by the

language we speak. Such a speculation in any event opens the door for more thorough investigation of the relations between syntax, semantics, perception and convention, or, if one prefers, between convention and nature.

Notes

I should like to thank the following persons for rewarding discussions on some of the questions covered in this paper. Lars Gunnar Andersson, Jan Anward, Eva Braroe (=Ejerhed), Östen Dahl, Thorsten Fretheim, Jerker, Järborg Roger Källström, and the Editor of the volume of the U/Mass Occasional Papers in Linguistics per first appeared. I should also like especially to thank Justine Stillings, without whom would never have come about. The paper was delivered in Swedish at the Nionde Sammankomsten Svenskans Beskrivning in Göteborg Sweden, in October, 1975.

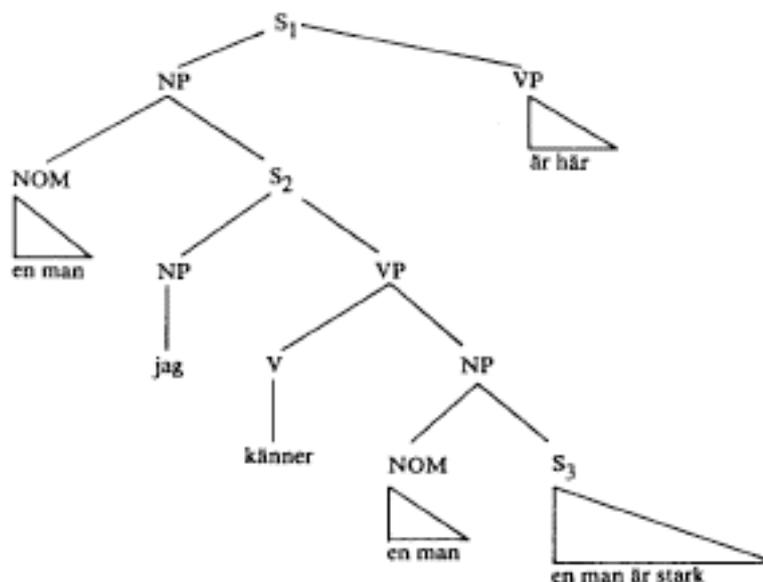
1. I am satisfied with this approximate definition since the purpose of this paper is not to define or to investigate Swedish *satsflätor*. For additional data on these phenomena, see excellent accounts in Lindberg (1968), Severinsson (1972), Källgren (1972), Wessén (1968) and Lindstedt (1926). Rather, it is my purpose to show that certain *satsflätor* violate proposed general linguistic principles and to discuss other means of accounting for them.

2. Not all sentences that are presented in this paper are acceptable to all speakers of Swedish, since there is great regional variation in Sweden. I have therefore chosen not to insert any *'s or ?'s, even to indicate my own personal grammaticality judgements. It should also be noted here that all of the sentences are to be read with the most favorable appropriate intonation.

3. *Om* is used in Swedish equally for English if, *whether* and *about*.

4. *Sam* is translated either as *who/which* or as *that*. It is not always clear whether som is a complementizer or a relative pronoun, since it is difficult to find evidence on this question in Swedish. Lars Gunnar Andersson suggests that som is a complementizer.

5. Although it is clear that (4d) cannot be directly derived from (4a), it is somewhat unclear how (4d) actually should be derived within the transformational framework. I have assumed a structure of the following kind as underlying relative clauses such as (4d) (the reason for this proposal becomes clearer when the other example sentences in this paper are taken into consideration):



6. Here and in other places restrictive relatives can be used on proper names, as in the English "No, I didn't mean John from Detroit, I meant John who lives downstairs from us!"

7. Note that in English one could probably say this if destroying books were a normal activity (e.g. in the *Fahrenheit 451* world). Cf. "Who did Bill destroy a book about?"

8. Platzack (1974), in a way that resembles Horn (1974), tries to show that sentences that contain picture NP's and NP's that designate inalienable relations do not constitute counterexamples to Ross's CNPC. Platzack claims that the NP's he is discussing are both semantically and syntactically ambiguous between a complex NP structure and a non-complex NP structure. The sentences that seem to involve a violation of the CNPC have in fact, he argues, arisen through movement out of a non-complex NP. However, as has already been noted above in connection with the discussion of Horn, a reanalysis of this type could hardly be in question for the examples in (4) - (10).

It would be difficult to claim that NPs with relative attributes do not constitute Nrs (as in Horn's approach) or that they should be reanalyzed according to Platzack's suggestions as:



A reanalysis such as the above would hardly help in any event, since all movement out of this structure would still violate Horn's general constraint on NP's or Ross's PPC.

9. However, since it is movement out of complex sentences which is treated here, and not just simple sentences with relativization as in Keenan and Comrie, we have somewhat transgressed the proper area of application of their hierarchy.

10. It should be pointed out that I now, without discussion, have assumed that optional transformations change meaning. I am making this assumption since I have never come across sentences related by optional transformations which exhibit no meaning differences. According to this view one should not take a postulate of identity of meaning for granted, but rather try to exhibit the systematic meaning differences which do exist. For a very interesting attempt of this kind see Anward (1974).

11. Swedish has so-called determinative pronouns (*den hund*), different from the definite article (*hunden*) [the dog], and demonstratives (*den hunden*) [that dog]. Determinative NP's more or less obligatorily take a restrictive relative attribute.

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PostScript

In what follows I would like to make a few short comments on the paper which was written in 1974-75.

First, it has become clear through the work of, among others, the investigators in this volume that constructions which violate the CNPC are a stable phenomenon of Nordic Languages. They occur in Norwegian, Swedish and at least to some extent in Danish. In Swedish there seem to be some dialect differences so that eastern dialects are more restrictive than western ones .

In connection with dialect differences I would then like to say a few words about the view on grammaticality that was taken in the paper. All the sentences were tried on a sample of 19 speakers and they were all accepted by one or more speakers unless something to the contrary is stated in the text. It is, of course, hard to know why particular sentences were rejected or accepted - there could be many reasons. The point is that speaker's acceptance was the closest I could come to an operational handling of the concept of grammaticality, since the concept of grammaticality in itself to me was theoretically unclear. My present view is that grammaticality best can be explicated as an as yet not fully analyzed type of normative intuitions a certain speaker or group of speakers might have about what linguistic constructions they wish to allow. In order to bypass this debate on grammaticality I decided to rely on speaker's acceptance, which I would recommend as a course also to be followed by others, until a satisfying analysis of grammaticality has been found.

Finally, a few words about the explanations offered in the paper. I now think my proposed complex NP subject constraint was too strong. In fact, I think that explaining syntax merely by constructing formal constraints on structures will have a very small chance of succeeding as a theoretically viable form of explanation. What is needed is a form of explanation which connects structural facts with semantic and pragmatic facts of the type I have pointed to in the paper. Preferably, the analysis and explanation should also be done on naturalistically recorded speech data, so that facts of prosody and rhythm could be given their proper place. If the analysis is done in this way, I would like to venture a guess that what might in the end give us an account of structures of the "satsfläte" -type is a combination

of Behaghel's principle ("What is placed together mentally is placed close together syntactically") with a number of means, whereby we can break the contiguity requirement of the principle and still make it possible for a listener to retain the desired semantic connections. Such means will range from morphological to prosodic and nonverbal features in addition to the presuppositions and expectations raised by the content of what is being said. Perhaps such an investigation will also give us a more complex view of the way in which languages conventionally can differ from each other.

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