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Subject Gaps: An Asymmetry between Questions and Relatives in Norwegian

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SUBJECT GAPS:

AN ASYMMETRY BETWEEN QUESTIONS AND RELATIVES IN NORWEGIAN*

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This paper addresses the question under what conditions an empty subject can be properly governed. Empty subjects have mainly been discussed with respect to so-called pro-drop languages such as Italian. Rizzi (1982) and Chomsky (1981) have linked the possibility of having subject gaps either to pro-drop or to the availability of an inversion process in the language which freely inverts subject and verb in simple clauses. Here I am going to discuss subject gaps in a language which has neither pro-drop nor free inversion. This empirical broadening will hopefully provide some more insights into the nature of proper government. The primary evidence will be taken from a contrast in extractability between indirect questions and relative clauses in Norwegian. Towards the end I will compare the Norwegian data with similar cases in Swedish. This comparison suggests that languages can differ systematically as to whether they require proper governors to be phonetically realized or not.

Consider the data in (1) and (2).

(1) a. Ola$_j$ husker jeg ikke hvem$_i$ som e_i snakker med e_j.
Ola^j remember I not who^i that $-_i$ talks with $-_j$.

b. Ola$_j$ skjønner jeg ikke hva$_i$ e_i sier e_j.
Ola^j understand I not what^i $-_i$ says $-_j$.

(2) a. Ola$_j$ kjenner jeg mange som$_i$ e_i liker e_j.
Ola^j know I many that^i $-_i$ like $-_j$.

b. *Ola$_j$ kjenner jeg mange som$_i$ e_i liker e_j.
Ola^i know I many that^j $-_i$ like $-_j$.

We see that extraction of the subject of an embedded question is o.k. (1-b), but extraction of the subject of a relative clause results in ungrammaticality (2-b). Extractions of objects are permitted in both types of clauses under similar circumstances. I will argue that the reason for the difference between the grammatical (1-b) and the ungrammatical (2-b) lies in the fact that in (1-b) the empty subject is properly governed in its governing category whereas this is not the case in (2-b). Let us first look at what the governing category for subjects in Norwegian is. Following Chomsky (1981, p. 211) we can adopt the characterization of governing category in (3).

(3) β is a governing category for α iff β is the minimal category containing α, a governor of α, and a SUBJECT accessible to α.

By SUBJECT Chomsky understands AGR in finite clauses and the subject in non-finite clauses. I will follow a suggestion made by Kayne (1982) and adopted in Taraldsen (1983) and assume that the accessible SUBJECT is "the most prominent nominal element" in a given domain. Eliminating AGR as a candidate for this status, the SUBJECT of a finite clause will be the (actual) subject, just as it is in non-finite clauses. Kayne further assumes that embedded clauses are nominal in virtue of having a nominal element in Comp which then will be the most prominent nominal element in S'. On these assumptions, what would count as an accessible SUBJECT for a subject trace in an embedded clause? Since the notion "accessible" is intended to exclude a category from being accessible to itself, it can't be the subject, i.e. itself, it must be the nominal element in Comp. This makes S' the governing category for subjects.

I will also assume that both main and subordinate clauses in Norwegian contain a position, distinct from Comp, which informally speaking serves as the landing site for wh-movement. I will refer to this position as the XP-position (similar suggestions have been made, e.g. in den Besten (1983) and Holmberg (1983a, b)). The relevant phrase-structure rules are given in (4). α ranges over NP and S''.[1]

(4) a. $\alpha \rightarrow$ XP S'

b. S' $\rightarrow$ Comp S

c. S $\rightarrow$ NP ADV VP

The main motivation for assuming these expansion rules comes from facts about verb placement in Scandinavian languages. Following den Besten (1981, 1983), Holmberg (1983a, b), and Platzack (1983, to appear) I will assume that the finite verb moves into Comp in matrix clauses. An example is given in (5-a) which will have the S-structure in (5-b).

(5) a. Snakker Ola aldri med Marit?
talks Ola never with Marit

b. $[_{S'}[_{Comp}\text{snakker}_i][_S$ Ola aldri $[_{VP}\underline{e}_i$ med Marit]]]

According to Platzack, the verb must move to Comp in order to assign case to the subject NP. Holmberg, who follows Kayne (1982), assumes that the verb has to move in order to make the matrix clause verbal, given that features from Comp percolate up to the maximal projection.

Declarative sentences as well as constituent questions are derived by a second movement of some constituent into the XP-position, as shown in (6).

(6) a. Ola snakker aldri med Marit.
Ola talks never with Marit

b. $[_{S''}[_{XP}\text{Ola}_i][_{S'}[_{Comp}\text{snakker}_j][_S \underline{e}_i$ aldri $[_{VP} \underline{e}_j$ med Marit]]]]

Consequently a declarative sentence will involve two movements. This might seem overly complicated at first, there is however a good reason which has to do with a difference in the relative order of finite verb and sentential adverb between main and embedded clauses. In main clauses like (6), an adverb will always follow the finite verb which has moved into Comp. In a subordinate clause like (7), however, Comp is filled, the verb does not move and the adverb will consequently precede the verb.

(7) a. Jeg lurer på om Ola aldri snakker med Marit.
I wonder if Ola never talks with Marit

b. Jeg lurer på $[_{S'}[_{Comp}\text{om}][_S$ Ola aldri $[_{VP}$snakker med Marit]]]

Notice that we get the same verb-adverb order if other constituents besides the subject have been fronted as in topicalized sentences (8) or questions (9). This is in contrast with English where topicalization does not involve subject AUX inversion.[2]

(8) Marit$_i$ snakker$_j$ Ola aldri e_j med e_i.
Marit talks Ola never with

(9) Hvem$_i$ snakker$_j$ Ola aldri e_j med e_i?
who talks Ola never with

Evidence for assuming an XP-position also in subordinate clauses comes from embedded subject questions like in (10), which is similar to (1-a).

(10) Vi vet hvem *(som) snakker med Marit.
we know who that talks with Marit

Note that som is obligatory whenever the wh-phrase is understood as the subject of the adjacent S.[3] What would the S-structure of (10) look like? There are of course several possibilities, but we can limit our discussion to the two indicated in (11).

(11) a. Vi vet $[_{S'}[_{Comp}$ hvem som$][_S$ e snakker med Marit]]

b. Vi vet $[_{S''}[_{XP}$hvem$][_{S'}[_{Comp}$ som$][_S$ e snakker med Marit]]]

(11-a) involves a branching Comp. Assuming that we want the empty category in subject position to be governed by an element in Comp, this presumably entails that the notion of government that would be relevant here is one that doesn't rely on a structural definition of c-command but rather defines government in terms of shared maximal projections.[4] However, there are some indications that the interrogative phrase and som don't form a constituent, as suggested by (11-a). For instance, they may be separated as in (12).

(12) Ola husket hvor mange piker men har glemt
Ola remembered how many girls but has forgotten

hvor mange gutter som snakket med Marit.
how many boys that talked with Marit

If we assume the constituent structure in (11-a), then (12) is a problem. If instead we assume the structure in (11-b), then (12) can be analyzed as a case of Right-Node Raising of S'.[5] There are other reasons for preferring (11-b) over (11-a) which I cannot go into in detail. In the following I will assume that embedded constituent questions in Norwegian have the structure given in (11-b), which is identical to the structure I have been assuming for main clauses.

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Given the rules in (4), the S-structure for (1-a) and (1-b) will be as in (13-a) and (13-b), respectively.

(13) a. $[_{S''}[_{XP}\text{Ola}_j][_{S'}[_{Comp}\text{husker}_k][_S$jeg ikke $\underline{e}_k$ $[_{S''}[_{XP}\text{hvem}_i]$
Ola remember I not who

$[_{S'}[_{Comp}\text{som}_i][_S \underline{e}_i$ snakker med $\underline{e}_j]]]]]]$
that talks with

b. $[_{S''}[_{XP}\text{Ola}_i][_{S'}[_{Comp}\text{skjønner}_k][_S$jeg ikke $\underline{e}_k$ $[_{S''}[_{XP}\text{hva}_j]$
Ola understand I not what

$[_{S'}[_{Comp}\underline{e}_i][_S \underline{e}_i$ sier $\underline{e}_j]]]]]]$
says

In (13-a), the empty category $\underline{e}_i$ in subject position is properly governed within its governing domain S' by som. In (13-b), it is presumably properly governed by the coindexed empty category in Comp (cf. Taraldsen (1983, fn. 4)).

Returning to the relative clauses in (2), repeated below, we can now account for why it is not possible to extract the subject of a relative clause as shown in (2-b).

(2) a. Ola_j kjenner jeg mange som_i $\underline{e}_i$ liker $\underline{e}_j$.
Ola_j know I many that $\underline{e}_i$ like $\underline{e}_j$.

b. *Ola_i kjenner jeg mange som_j $\underline{e}_i$ liker $\underline{e}_j$.
Ola_i know I many that $\underline{e}_i$ like $\underline{e}_j$.

Notice that the reason (2-b) is ungrammatical is not the extraction out a relative clause per se, since a similar sentence with an object extraction is o.k. shown in (2-a). Relative clauses will be introduced by the rule in (4-a), setting α and XP to NP, as shown in (14).

(14) NP → NP S'

Consequently, relative clauses will not contain an XP-position. Given (14), (2-b) will have the structure in (15).

(15) (=(2-b)) *Ola_i kjenner_k jeg $\underline{e}_k$ $[_{NP}$ mange $[_{S'}[_{Comp}\text{som}_j]$
$[_{S'} \underline{e}_i$ liker $\underline{e}_j]]]$

The reason (2-b) is excluded is then because $\underline{e}_j$, the empty category in subject position, is not properly governed within its governing domain, S'.

Independent support for not assuming an XP-position in relatives comes from the contrast in (16).

(16) a. mannen som $\underline{e}$ vant løpet
'the man that won the race'

b. mannen hvis hest $\underline{e}$ vant løpet
'the man whose horse won the race'

c. *mannen hvis hest som $\underline{e}$ vant løpet
'the man whose horse that won the race'

The ill-formed relative clause in (16-c) should be compared with the well-formed indirect question in (17), which provides a minimal pair. Here som is obligatory, just as in (1-a) and (10).

(17) Jeg husker ikke hvis hest *(som) vant løpet
I remember not whose horse that won the race

An interesting consequence of the relative clause rule in (14) is that (2-a) will have the structure in (18).

(18) (=(2-a)) Ola_j kjenner_k jeg $\underline{e}_k$ $[_{NP}$mange $[_{S'}[_{Comp}\text{som}_i]$
$[_S \underline{e}_i$ liker $\underline{e}_j]]]$

In this structure, $\underline{e}_i$ is properly governed by som. $\underline{e}_j$ is properly governed by liker and it is $\bar{A}$-bound by Ola but the relation violates the subjacency condition on Move α (cf. Chomsky (1982, p. 33)) if we assume NP and S' are bounding nodes in Norwegian. One way to try to avoid this problem would be to assume that relative clauses also contain an XP-position, outside S', which can serve as an escape hatch for subjacency. On this approach (2-a) would have the structure in (19).

(19) $[_{S''}\text{Ola}_j$ $[_{S'}$ kjenner_k $[_S$ jeg $\underline{e}_k$ $[_{NP}$mange $[_{S''}[_{XP}\underline{e}_j]$
$[_{S'}[_{Comp}\text{som}_i][_S \underline{e}_i$ liker $\underline{e}_j]]]]]]]$

But assuming the structure in (19) won't solve the problem. It wrongly predicts that relative clauses like (16-c) should be good. Furthermore, even if we assume an XP-position in relative clauses, the relation between the empty category in the intermediate XP-position and Ola will still cross two bounding nodes, NP and S' of the matrix clause. There are in fact several indications that subjacency is neither a necessary nor a sufficient condition for characterizing possible extractions in Scandinavian languages (cf. Allwood (1976), Andersson (1982), Engdahl (1982)). Some further illustrations of grammatical extractions are given in (20) and (21).[6]

(20) $[_{S''}\text{Ola}_i[_{S'}\text{lurer}_m[_S$ jeg $\underline{e}_m$ på $[_{S''}\text{hvem}_j$ som_j $\underline{e}_j$
Ola wonder I who that

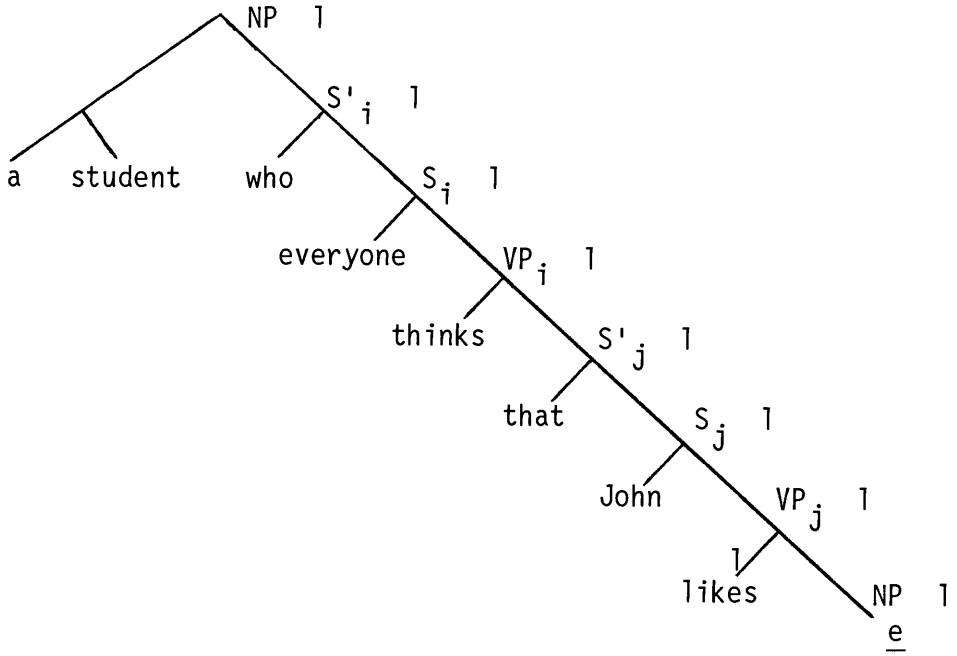
husket [S" hvem$_k$ som$_k$ e_k snakket med e_i.]]]]
remembered who that talked with

(21) [S"Spansk$_i$ [S' finns$_m$ [S det e_m [NP mange [S' som$_j$
Spanish is there many who

e_j kjenner [NP noen [S' som$_k$ e_k snakker e_i]]]]]]]
know someone that talks

Sentences like these can presumably only be accounted for under subjacency if we proliferate the number of sentence external escape positions in a way that has no empirical ground and which seriously weakens the explanatory potential of subjacency.[7] A more promising approach seems to be to look at the distribution of empty categories in a language like Norwegian in terms of connectedness, a notion introduced in Kayne (1983). In order to bring out the relevant properties of this approach, we can break down the account of empty categories into two parts, which I believe also has a methodological advantage. First, empty categories are subject to a local condition: For each empty category (except PRO) there must be a structural governor. Second, an empty category must stand in a licit binding relation to some antecedent. On Chomsky's approach, this relation is established by Move α and hence constrained by subjacency. Kayne points out that this approach fails to account for certain systematic contrasts in the distribution of empty categories, in particular parasitic gaps. He argues that these contrasts have to do with whether an empty category occurs on a right branch or a left branch, and proposes to replace Chomsky's account by the Connectedness Condition which actually generalizes beyond empty categories to cases with multiple wh-phrases and multiple relatives (cf. Kayne (1983, p. 239)). The Connectedness Condition lays down certain conditions that all paths between empty categories and their antecedents must meet. Kayne states the Connectedness Condition in terms of government-projection (g-projection) sets, a notion which involves an empty category, its structural governor, its antecedent, and a constituent dominating the antecedent. Consider the tree structure in (22).

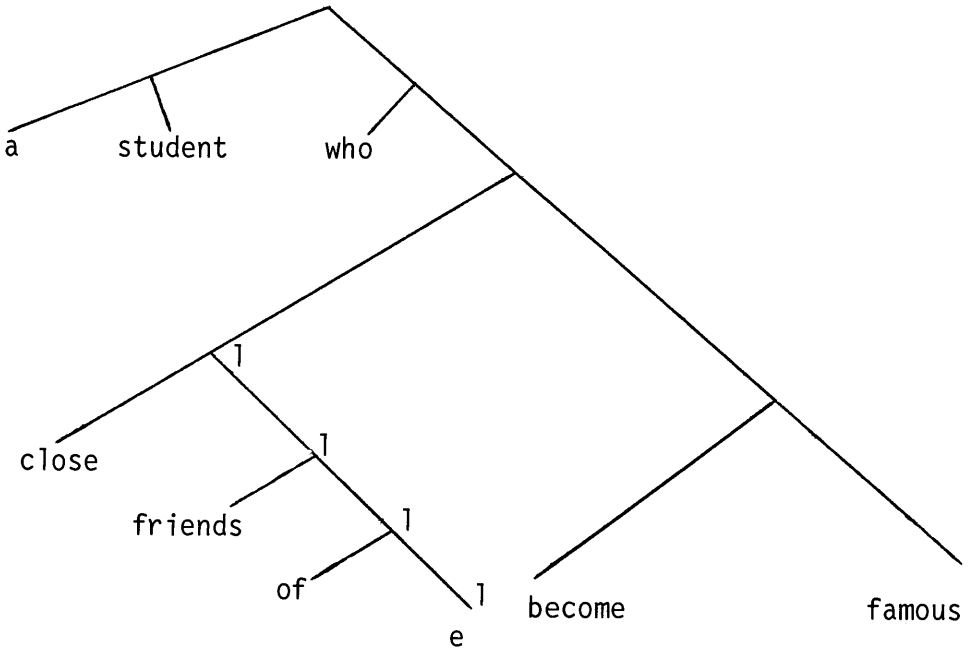
(22) a student who everyone thinks that John likes



According to Kayne, the g-projection set of the empty category, e, will contain its structural governor, likes, all projections of its governor in the normal sense of X-theory, as well as all nodes dominating e that do not dominate the governor. Maximal projections are normally barriers for government, but a g-projection path may extend across a maximal projection, X, just in case X is in canonical government configuration (CGC) with respect to some other node. In a language like English, where verbs govern to the right, a node will be in CGC just in case it is a right sister.[8] Applied to the example in (22), this means that the path will extend across S'_j since this node is in CGC with thinks. The path, which I have indicated by the integer 1 next to the category label, thus will connect the node immediately dominating the antecedent with the empty category and its governor. Kayne (1983) deliberately does not include the category information in the trees but emphasizes that what matters is only that the direction of government and the direction of branching match. In the subsequent examples, I will follow Kayne and only indicate which projection path, if any, a given node belongs to.

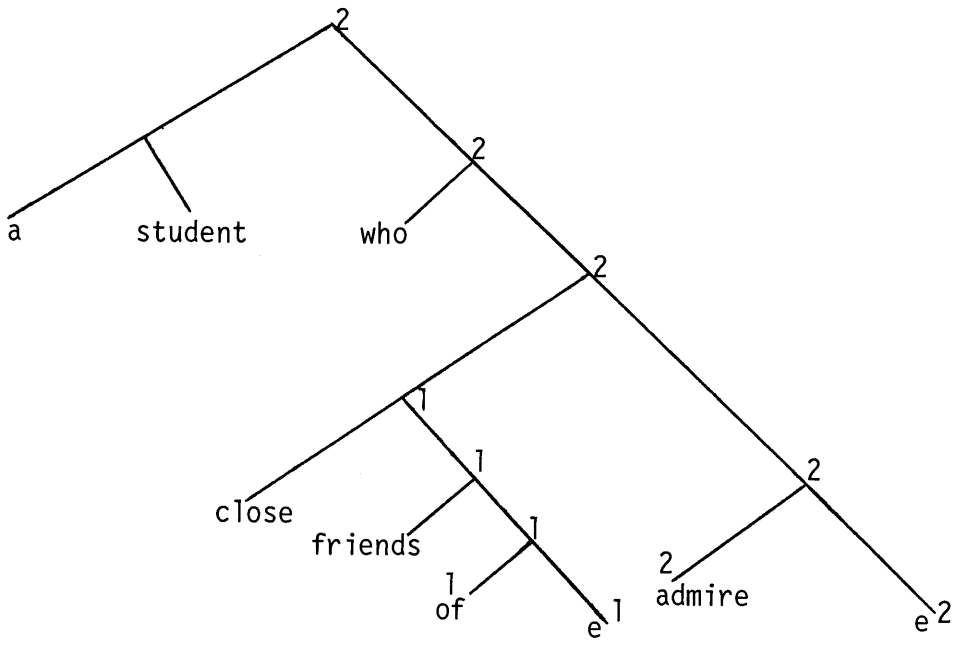
To illustrate how the notion of CGC captures the left branch/right branch asymmetry discussed by Kayne, we can look at an example where an empty category occurs inside a maximal projection which is not in CGC.

(23) *a student who close friends of e become famous



Although the empty category is properly governed by of, the path fails to project across the NP dominating close friends of since this is on a left branch and we get the familiar Subject-Condition effect. However, if there is another path in the tree, the sentence becomes notably better, as shown in (24).

(24) ?a student who close friends of e admire e



Examples like (24), known as parasitic gap sentences, illustrate that an empty category whose path fails to reach its antecedent may still be admitted if its path connects to another path in the three. Kayne formulates a general condition on empty categories as in (25) where G_β is the g-projection set of β (cf. Kayne (1983, p. 234)).

(25) Let $\beta_1 \ldots \beta_j, \beta_{j+1} \ldots \beta_n$ be a maximal set of empty categories in a tree T such that $\exists \alpha, \forall j$, β_j is locally bound by α. Then $\{\alpha\} \cup (\bigcup_{1 \leq j \leq n} G_{\beta_j})$ must constitute a subtree of T.

In Kayne's formulation, the notion of g-projection set plays a crucial role. These sets are defined as projections from the structural governor. Letting the path so to speak originate from the governor makes no difference in cases where the governor and the empty category are minimally contained in the same maximal projection, but cases where they are not, i.e. cases of cross-boundary government, require a special clause in Kayne's definition of g-projection sets (cf. Kayne (1983, p. 229, fn. 6)). It is possible to avoid this if we define the path directly as the sequence of nodes from the antecedent to the empty category, separating out the condition that there be a structural governor from the conditions on the path itself. I will refer to such a path as a binding path. The examples in (22)-(24) illustrate the three disjunctive conditions that enter into the definition of binding path in (26).[9]

(26) The path Π from the node immediately dominating an antecedent α to a structurally governed empty category β is a binding path connecting α and β iff as in either (a), or (b), or (c):

a. if $\pi \in \Pi$, i.e. π is a member of the sequence Π, π is immediately dominated by π', π is not a maximal projection, then $\pi' \in \Pi$.

b. if $\pi \in \Pi$, π immediately dominated by π', π is a maximal projection in CGC then $\pi' \in \Pi$.

c. if $\pi \in \Pi$, π immediately dominated by π', $\pi' \in \Pi'$ where Π' is a binding path connecting α to some β', then $\pi' \in \Pi$.

Condition (a) says that any node immediately dominating β or some node X that is already on the path will belong to the path provided that X is not a maximal projection. Condition (b) says that the path will extend across a maximal projection

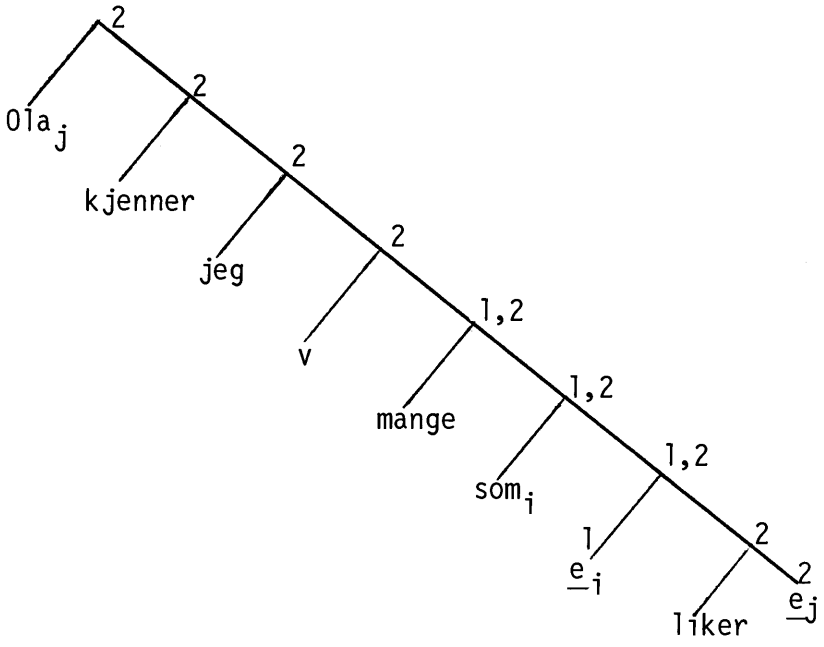
just in case this is in CGC. Condition (c) says that the path will extend to any immediately dominating node that is already on some other binding path which connects the same antecedent to another empty category. The case where (c) will be relevant is when π is a maximal projection not in CGC, as illustrated e.g. in (24). Given the definition of binding path in (26), we can summarize the condition on empty categories as in (27).

(27) For each empty category, there must be a binding path connecting it to its antecedent.

It is worth noting that given this way of looking at the distribution of empty categories in terms of connecting paths in a tree, there is no ground for distinguishing between movement-induced empty categories (i.e. empty categories that stand in the Move α relation to some binder) and base-generated empty categories, as Kayne points out (1983, p. 229; pace Taraldsen (1981); and Chomsky (1982)).

According to (26), binding paths are only defined for structurally governed empty categories. Kayne assumes that verbs are always proper governors, and that prepositions are in some languages but not in others. We can now get a coherent picture of the facts in Norwegian if we assume that in addition to V and P, a coindexed som in Comp acts as a proper governor for an empty category in subject position. On this assumption, the well-formedness of (2-a) with the structure in (28) follows from the fact that each of the empty categories is properly governed and connected to its antecedent by a binding path which satisfies the conditions in (26).

(28)



som is not the only lexically realized governor in Comp in Norwegian. The lexical complementizers at (that) and om (if) also govern the subject position, as shown by the examples in (29) and (30).

(29) Desse konstruksjonar trur eg at e er
these constructions think I that — are

meir naturlege uttrykksmåtar.
more natural expressions

(30) Det finns substantivforekomster vi ikke engang
there are noun occurrences we not even

vet om e skal klassifiseres som mengdetermer
know if — shall be-classified as mass terms

eller ikke.
or not

In addition to lexically realized governors in Comp, it appears that a coindexed empty category in Comp also counts as a proper governor in Norwegian in view of examples involving subject extractions in embedded questions like (1-b) with S-structure as in (13-b).[10] This seems to be the case in Danish and Icelandic, too. Swedish differs from these languages, however, in a way which we can now express as follows: Whereas Norwegian allows empty categories to be properly governed by empty categories, Swedish requires that proper governors be phonetically realized. Consequently, the Swedish counterparts to the subject question in (1-a) and the subject relative in (2-a) where there is an overt som are grammatical, but the Swedish counterpart to (2-b) is not. The subject position cannot be empty, a resumptive pronoun must be used as shown in (31).

(31) Ola$_i$ förstår jag inte vad$_j$ han$_i$ säger
Ola understand I not what he says

e$_j$. (Swedish)

som, then, counts as a proper governor for subjects in Swedish.[11] Interestingly enough there are some dialects of Swedish which allow other governors in Comp. In the type of Swedish spoken in Finland, finlandssvenska, the complementizer att (that) acts as a proper governor, as illustrated in (32).

(32) Vi har försökt ta upp sådana fall som$_i$ vi
we have tried take up such cases that we

tänkte att e$_i$ skulle vara intressanta. (Finland
thought that — should be interesting Swedish)

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In certain southern Swedish dialects, där, seems to act like a proper governor. It is probably not an accident that these dialects are spoken in provinces which were formerly under Danish rule since der in Danish often replaces som.

(33) Vi ved hvem der taler med Marit. (Danish)
we know who there talks with Marit

However, as far as I am aware, there are no dialects of Swedish which allow empty subjects to be properly governed by an empty category in Comp as is apparently the case in Norwegian. What all Scandinavian languages have in common then is that they allow government from Comp. Swedish differs from the other languages in this family in only allowing an empty category in subject position if this is properly governed by a lexical item in Comp.[12] In main clauses, an empty subject will always be governed by the finite verb which has moved to Comp. In embedded subject questions and subject relatives, an empty subject will be governed by som. It is interesting, but not really surprising, that dialects of Swedish should differ with respect to which lexical items in Comp count as proper governors.

FOOTNOTES

*I would like to thank Y. Aoun, R. Cooper, and D. Pesetsky for valuable comments and suggestions.

[1]At NELS, Y. Aoun suggested to me this use of α as a variable over NP and S", which simplifies the rule system.

[2]See Holmberg (1983-a) for a discussion of relevant differences between Topicalization in English and Swedish. Holmberg also provides an interesting argument for base-generating the XP-position. Holmberg assumes that the XP-position, in addition to being the landing site for wh-movement also houses the weakly stressed adverb så, which is base-generated in this position. These two assumptions correctly account for the fact that så cannot cooccur with a topicalized or questioned argument phrase, i.e. a phrase which bears a GF-θ role, as illustrated in (a) and (b), (cf. Holmberg (1983-a (59)-(60))).

(a) Ingrid (*så) behöver vi inte vänta på e.
Ingrid so need we not wait for

(b) Att han gör sitts bästa (*så) vet vi e.
that he does his best know we

så occurs frequently in 'as for' constructions as in (c) as well as in sentences with initial adverbial phrases, as in (d).

(c) För min del, (så) anser jag att förslaget
for my part so think I that the proposal

bör understödas.
should be supported

(d) När Ingrid kommer, (så) börjar vi.
when Ingrid comes so start we

Holmberg accounts for this distribution of så by assuming that the initial phrase in (a)-(b) occurs in the XP-position and is co-indexed with an argument position in S, whereas the initial phrase in (c)-(d) is base-generated in some kind of Topic position, introduced by a rule like in (e), and consequently not coindexed with any empty category inside S.

(e) E ⟶ Top S"

[3]It remains to be investigated when som became obligatory in subject questions in Norwegian (and Swedish) given that this use of som does not appear in Icelandic. In Middle English that optionally appeared following an initial wh-phrase in indirect questions. This process seems to have been quite free. According to C. Allen (p.c.) there does not seem to have been a stage in the language when that was obligatory in subject questions but optional in other types of questions.

[4]Cf. Aoun, Hornstein, and Sportiche (1981) for one alternative. But see Saito (1983) for some problems with this proposal.

[5]This argument was first made in Andersson (1975).

[6]The existence of sentences like (21) argues against Taraldsen's (1982) analysis of extraction out of relative clauses in Norwegian. Taraldsen argues that extraction is only possible if the relative clause has been extraposed outside the NP. In order for this approach to work for (21), extraposition would have to apply in a successive cyclic fashion.

[7]This argument is developed further in Engdahl (1980).

[8]Kayne's account which defines CGC solely in terms of branching direction overgenerates in that it predicts that gaps will occur indefinitely far down, as long as they are on a right branch. See Engdahl (1983), Longobardi (to appear), and Sells (1983) for various suggestions how this can be avoided.

[9]Besides dispensing with the notion of g-projection set, this definition avoids an unclarity in the interpretation of the expression 'constitutes a subtree' in Kayne's original definition. Cf. e.g. Hopcroft and Ullman (1979, p. 3f. 84).

[10]The question what governs the empty category in Comp in examples like (13-b) is intriguing. Space constraints prevent a full discussion of it here. If we adopt Kayne's (1980) suggestion that only casemarked empty categories can be governors, then (13-b) is problematic, given the presence of lexical material, hva, between the matrix verb and the empty category in Comp. Cf. also the discussion in Chomsky (1981, p. 300 ff.).

[11]I here deviate from Baltin (1982, p. 23 ff.) who assumes that complementizers, being semantically empty, do not count as lexical items in order to preserve the subjacency condition.

[12]Cf. Platzack (1983, to appear) who assumes that a subject must be casemarked by a lexical element in Comp, accompanied by the feature TENSE.

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