

Preposed Sentential Negation in Danish

Submission for HPSG09

1 Introduction

In Danish embedded clauses sentential negation occupies a position to the left of the VP, i.e. after the subject immediately preceding the finite verb (1a). Even inherently negated indefinite complements are attracted to this position as in (1b) ([Sells, 2000]). However, in certain non-veridical contexts sentential negation may also appear between the complementizer and the subject (1c). I will refer to this as *preposed negation*. Note that the negation element *ikke*/'not' is morphologically and phonologically identical in the two uses.

- (1) a. *fordi (*ikke) han (ikke) har nogen venner*
because (*not) he not has any friends
b. *fordi han (ingen venner) har (*ingen venner)*
because he (no friends) has (*no friends)
c. *hvis (ikke) han (ikke) har nogen venner*
if (not) he (not) has any friends

In the paper I propose that preposed negation is an optional complement of the non-veridical complementizer just as sentential negation in English is analyzed as a complement of the auxiliary in [Kim and Sag, 2002, Warner, 2000], while ordinary sentential negation in Danish is an adjunct. I further show that preposed negation is associated with VERUM-focus ([Höhle, 1992, Romero, 2006]), emphasizing the negation of an *all-focus* proposition in the antecedent of the conditional. Thus, in non-veridical contexts sentential negation may scope either over a proposition or a VERUM-predicate. The HPSG analysis is spelled out in the last section providing sample semantic representations using Minimal Recursion Semantics ([Copestake et al., 2005, Warner, 2000]) and providing lexical entries for the sentential negation *ikke*/'not' and the complementizer *hvis*/'if'.

2 Preposed negation

Preposed negation is found in non-veridical contexts, notably in conditional clauses but also in interrogatives (embedded (2a) and non-embedded (2b)) and optative clauses (2c).

- (2) a. *jeg spekulerer på om ikke det er for sent*
I wonder PREP if not it is too late
b. *mon ikke det er for sent*
I.guess.COMPL not it is too late
c. *bare ikke han kommer*
if.only.COMPL not he comes

Preposing is, however, not restricted to negation. Sentential adverbs relating to the polarity of the clause, may be preposed, even more at a time (3c) forming a complex ADVP where the additional adverbs modify the negation.

- (3) a. *hvis alligevel du vil deltage*
if anyway you want to participate
b. *hvis godt du vil deltage*
if indeed you want to participate
c. *hvis [altså alligevel ikke] du vil deltage*
if that.is anyway not you want to participate
'if you don't want to participate anyway, that is'

Not only negation but also inherently negated indefinite objects may be preposed (subject to the same restriction as post-subject negated indefinites, namely that postnominal PPs must remain in situ ([Christensen, 2005])). Negated indefinites will not be further considered here.

- (4) *hvis ingen arvinger (*til formuen) der er (til formuen)*
if no heirs (*to the.fortune) there are (to the.fortune)

A non-veridical context is not a sufficient condition for preposing although previous accounts actually explain this construction through the close bond between conditional semantics and negation ([Jensen, 2001]). The complementizer also has to be monosyllabic with the possible exception of *dersom*/'in case'. Otherwise bisyllabic conditional complementizers like *såfremt*/'provided that' and *ifald*/'in case' do not allow preposing.

- (5) * *såfremt / ifald ikke du vil deltage*
 provided that / in case not you want to participate

Also verbinitial conditional clauses do not allow preposing arguing against a purely semantic explanation of the phenomenon.

- (6) * *har ikke du lyst, skal du ikke gøre det*
 have not you the.desire, don't do it
 'if you don't feel like it, don't do it'

The following discussion is limited to sentential negation in the context of *hvis*/'if'.

3 The Syntax of Preposed Negation

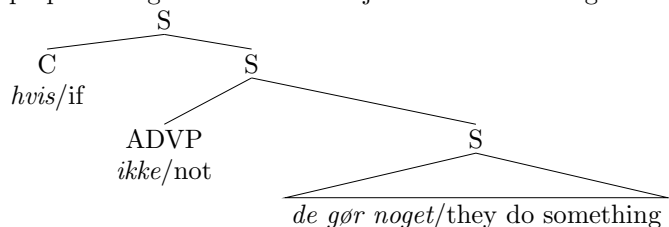
Preposed negation takes scope over the whole clause. It cancels out ordinary sentential negation (7) and just like ordinary sentential negation it licenses the negative polarity item (NPI) *heller*/'either' in a conjoined negated clause ([Borsley and Jones, 2005]) (8). Sentential negation with the (presuppositional) adverb *heller*/'either' requires a preceding sentence with sentential negation.

- (7) *hvis ikke de ikke gør noget → hvis de gør noget*
 if not they not do something → if they do something
- (8) *hvis ikke det regner og det heller ikke sneer*
 if not it rains and it either not snows
 'if it doesn't rain and it doesn't snow either'

Preposed negation is not part of a lexical structure, i.e. a kind of composite, inherently negated complementizer. The negation part is unambiguously a syntactic phrase as already shown in (4). If the negative quantifier phrase were to be analyzed differently from a preposed negation element, we would be left to explain why negative quantifier phrases always occur in exactly the same position as sentential negation (preposed or not). Also the negation part may contain the NPI-degree word *slet*/'at all' which cannot occur alone.

- (9) *Jaa, hvis slet ikke du har nogen fornemmelse af hvordan ...*
 Well, if at.all not you have any idea PREP how to ...

The preposed negation does not adjoin to the following S either, i.e. it does not exhibit the following structure.



First of all the restriction to monosyllabic complementizers is hard to explain on the basis of this structure. But more importantly sentential negation cannot attach to S but only to VP regardless of whether the complement clause is fronted or not. Cf.

- (10) * *han havde fortalt at ikke han havde stjålet bilen*
 he had told that not he had stolen the.car

Negation attaching to an S is only possible in the so-called *meta-negation* ([Christensen, 2005]) where negation attaches to a paranthetical complementizer clause expressing denial of an otherwise expected (conversational) implicature. In this use the sentence cannot be embedded and negation is to the left of the complementizer (in preposed negation it is to the right of the complementizer).

- (11) *ikke at jeg er utaknemmelig, men ...*
 not that I am ungrateful, but ...

Secondly the structure above falsely predicts that a conjoined clause may also occur with a preposed negation. Preposed negation, however, must be adjacent to the complementizer.

- (12) *??/* hvis ikke Peter kommer og ikke Louise er syg*
 if not Peter comes and not Louise is ill

Finally the complementizer and the negation may be stranded in elliptical structures. This is unexpected if the negation adjoins to an S, since there is no S to adjoin to ([Kim and Sag, 2002]).

- (13) *Hvis ikke, er det ikke ulovligt at have dem stående*
 If not, is it not illegal to have them around

Thus preposed negation is syntactically tied to the complementizer as in the analysis of ([Johanessen, 2000]) who assumes that the negation cliticizes to C in Norwegian. Licensing by the complementizer also allows an account of the restriction to monosyllabic complementizers as a case of lexical selection either through COMPS or MOD. However, there is evidence that preposed negation does not modify the complementizer. Preposed negation is always interpreted within the scope of the complementizer: IF(\neg (p)) while in a modificational structure the negation would take scope over the complementizer.

The complementizer is the syntactic and semantic head of the construction. It is still possible that the lexical complementizer cliticizes to the phrasal preposed negation forming a kind of complex head, but this does not explain how a negation element in the preposed position is licensed.

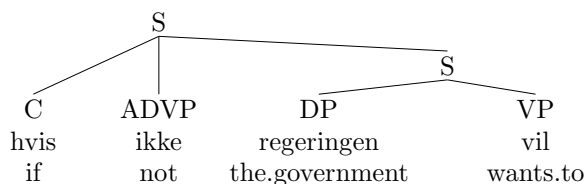
Thus I propose that the preposed negation is a complement of the complementizer just as sentential negation in English is analyzed as a complement of the auxiliary in [Kim and Sag, 2002, Warner, 2000]. This is further corroborated by the fact that preposing of the negation is lexically determined. Only certain monosyllabic complementizers with a non-veridical semantics license preposing. And the failure of finite verbs to license preposing (example (6)) can be explained as a lexical fact about finite verbs.

An analysis of ordinary sentential negation as a complement of the finite verb is, however, not viable. In Danish, complements appear to the right of their head, but sentential negation appears to the left of the head and may even be separated from its head by adjuncts. In addition, it would make the ungrammaticality of (6) totally mysterious.

- (14) a. *fordi han ikke ser filmen*
 because he not sees the.movie
 b. *fordi de ikke som raske mennesker hurtigt er i stand til at slukke ilden*
 because they not such as healthy people quickly are capable of extinguishing the fire

For these reasons I assume that ordinary sentential negation is an adjunct and preposed negation is an optional complement of the triggering complementizers. The example in (15) is assigned the structure below.

- (15) *hvis ikke regeringen vil*
 if not the.government wants.to



4 The Semantics of Preposed Negation

Sentences with preposed and ordinary negation are truth-conditionally equivalent, except in the case of scope-sensitive quantified subjects. However, there is a crucial difference between the two kinds of negation: Corpus investigations¹ reveal that preposed negation does not occur with strong NPIs (in the sense of ([Sailer, 2006, van der Wouden, 1997])), and such examples are judged to be marginal at best. Weak NPIs do occur with preposed negation, but they also occur in conditional clauses and may thus be licensed by the conditional semantics.

¹This investigation was carried out on *KorpusDK* from *Det Danske Sprog og Litteraturselskab*: <http://ordnet.dk/korpusdk>.

- (16) a. *hvis du ikke løfter en finger for dem, hjælper de heller ikke dig*
 if you not lift a finger for them, help they either not you
 b. ?? *hvis ikke du løfter en finger for dem, hjælper de heller ikke dig*
 if not you lift a finger for them, help they either not you
- (17) a. *hvis du ikke giver en skid for hans undskyldninger, hvorfor accepterer du dem så?*
 if you not give a damn about his excuses, why do you accept them then?
 b. ?? *hvis ikke du giver en skid for hans undskyldninger, hvorfor ...*
 if not you give a damn about his excuses, why ...]

In a similar vein preposed negation allows for (strong) positive polarity items (PPI).

- (18) a. ??/* *hvis du bare ikke kan det pis, skal du lade være*
 if you just not can that crab, don't do it
 'if you are not a top-professional, then don't do it'
 b. *hvis ikke du bare kan det pis, skal du lade være*
 if not you just can that crab, don't do it

Finally, preposed negation is preferred with non-topic-worthy subjects suggesting that the clause does not exhibit a basic topic-focus structure but rather *all_focus*.

- (19) a. *hvis ikke nogen gør noget*
 if not anyone does something
 b. ??/* *hvis nogen ikke gør noget*
 if anyone not does anything

This is further corroborated by the fact that indefinite subjects occurring with preposed negation favour a weak (existential) reading, while indefinite subjects with ordinary negation favour a strong (presuppositional/generic) reading. In the theory of indefinites in ([Diesing, 1992]) (VP-internal) focussed subjects favour the weak reading.

- (20) a. *Han ville uden tvivl have slået sig ihjel, hvis ikke [en rotte] i det samme var kommet løbende hen over gulvet*
 He would beyond doubt have been killed, if not [a rat] in that moment had come running across the.floor
 b. *Hvis [en atlet] ikke vil eller glemmer at fortælle Anti-Doping Danmark, ...*
 If [an athlete] not wants.to or forgets to tell Anti-Doping Denmark ...

I follow ([Romero, 2006]) in assuming that preposed negation introduces and scopes over a VERUM-predicate in the sense of ([Höhle, 1992]). Ordinary negation in turn scopes over a proposition. Thus the examples in (16a) and (16b) may be paraphrased: *if you do not lift a finger* vs. *if it is not true that you lift a finger*. These paraphrases make clear that preposed negation scopes over a VERUM predicate, which in turn scopes over a positive proposition explaining the observed exclusion of NPIs and licensing of PPIs. However, contrary to the analysis in ([Romero, 2006]) negation of a VERUM-predicate by preposed negation does not generally trigger a presupposition as to whether the speaker believes the proposition to be true or not, as otherwise suggested for Swedish by ([Jensen, 2001]). I believe this to be a matter of complex interaction between context, negation, VERUM and information structure.

5 Analysis

Using the framework of MRS (partly) from ([Warner, 2000]) I suggest the following semantic representations for *hvis Peter ikke vinder*/'if Peter not wins' (1) and *hvis ikke Peter vinder*/'if not Peter wins' (2) respectively.

$$(1) \left[\begin{array}{l} \text{KEY } \square \\ \text{CONTENT } \left[\begin{array}{l} \text{RELS } \left\langle \left[\begin{array}{l} \text{cond_rel} \\ \text{HDL h1} \\ \text{ARG h2} \end{array} \right], \left[\begin{array}{l} \text{neg_rel} \\ \text{HDL h3} \\ \text{ARG h4} \end{array} \right], \left[\begin{array}{l} \text{win_rel} \\ \text{HDL h5} \\ \text{ARG1 h6} \end{array} \right], \left[\begin{array}{l} \text{name_rel} \\ \text{HDL h6} \\ \text{NAME PETER} \\ \text{INDEX X} \end{array} \right] \right\rangle \\ \text{CONDS } \{ \text{h2} \geq \text{h3}, \text{h4} \geq \text{h5} \} \end{array} \right] \end{array} \right]$$

$$(2) \left[\begin{array}{l} \text{KEY } \boxed{1} \\ \text{CONTENT} \left[\begin{array}{l} \text{RELS} \left\langle \left[\begin{array}{l} \boxed{1} \\ \text{HDL } h1 \\ \text{ARG } h2 \end{array} \right], \left[\begin{array}{l} \text{neg_rel} \\ \text{HDL } h3 \\ \text{ARG } h4 \end{array} \right], \left[\begin{array}{l} \text{verum_rel} \\ \text{HDL } h5 \\ \text{ARG } h6 \end{array} \right], \left[\begin{array}{l} \text{win_rel} \\ \text{HDL } h7 \\ \text{ARG1 } h8 \end{array} \right], \left[\begin{array}{l} \text{name_rel} \\ \text{HDL } h8 \\ \text{NAME PETER} \\ \text{INDEX X} \end{array} \right] \right\rangle \\ \text{CONDS } \{ h2 \geq h3, h2 \geq h7, h4 \geq h5, h6 \geq h7 \} \end{array} \right] \end{array} \right]$$

Lexical entry for *ikke*/'not' as a complement:

$$\left[\begin{array}{l} \text{HEAD } \textit{adv} \\ \text{KEY } \boxed{1} \\ \text{CONTENT} \left[\begin{array}{l} \text{RELS} \left\langle \left[\begin{array}{l} \boxed{1} \\ \text{HDL } \boxed{2} \\ \text{ARG } \boxed{3} \end{array} \right], \left[\begin{array}{l} \text{neg_rel} \\ \text{HDL } \boxed{4} \\ \text{ARG } \boxed{5} \end{array} \right] \right\rangle \\ \text{CONDS } \{ \boxed{3} \geq \boxed{4} \} \end{array} \right] \end{array} \right]$$

Lexical entry for *hvis*/'if':

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{compl} \\ \text{MOD } \langle S \rangle \end{array} \right] \\ \text{COMPS} \left\langle \left(\left(\text{ADVP: } \left[\begin{array}{l} \text{KEY | HDL } \boxed{4} \\ \text{RELS} \left\langle \left[\begin{array}{l} \text{verum} \\ \text{ARG } \boxed{5} \end{array} \right] \right\rangle \right] \right) \right), S: \boxed{6} \right\rangle \\ \text{CONTENT} \left[\begin{array}{l} \text{KEY } \boxed{1} \\ \text{RELS} \left\langle \left[\begin{array}{l} \boxed{1} \\ \text{cond_rel} \\ \text{ARG } \boxed{3} \end{array} \right] \right\rangle \\ \text{CONDS } \{ \boxed{3} \geq \boxed{4}, \boxed{3} \geq \boxed{6}, \boxed{5} \geq \boxed{6} \} \end{array} \right] \end{array} \right]$$

The complementizer *hvis*/'if' selects an S which it outscopes (3 outscopes 6 in the CONDS). If the optional ADVP is present, the complementizer also outscopes the ADVP, i.e. the negation (3 outscopes 4 in the CONDS). Finally the VERUM outscopes the S (3 outscopes 4 in the CONDS). For ease of exposition the semantics of the matrix-clause to which the conditional clause adjons (the value of the MOD-feature) has not been accounted for.

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