Grammatical function selection in Swedish object shift

Elisabet Engdahl
University of Gothenburg

Annie Zaenen
Stanford University

Proceedings of the LFG'20 Conference

On-Line

Miriam Butt, Ida Toivonen (Editors)

2020

CSLI Publications

pages 109–126

http://csli-publications.stanford.edu/LFG/2020

Keywords: Danish, closed functions, object shift, open functions, Scandinavian, subcategorization, Swedish, word order

Engdahl, Elisabet, & Zaenen, Annie. 2020. Grammatical function selection in Swedish object shift. In Butt, Miriam, & Toivonen, Ida (Eds.), *Proceedings of the LFG'20 Conference, On-Line*, 109–126. Stanford, CA: CSLI Publications.

Abstract

Object shift, the word order where light object pronouns precede sentential adverbs, has received a lot of attention since it was first described in the theoretical literature in Holmberg (1986). The early studies discussed basic syntactic and prosodic conditions on this word order. More recently researchers have investigated pragmatic and information structural constraints on when object shift can or cannot apply. In this paper we take a syntactic approach following a proposal in Ørsnes (2013). After having carried out a survey of which types of verbs allow or disallow object shift in Swedish, we propose a generalization in terms of subcategorization. We find that object shift is possible, modulo information structural restrictions, with verbs that subcategorize for the closed functions OBJ and COMP but not with raising verbs that subcategorize for the open function XCOMP.

1 Introduction

Swedish is a Germanic verb second language where lexical objects follow the verb. When the main verb appears in second position, a lexical object has to follow any sentence adverbials:

(1) a. Jag har inte kysst Eva. [Sw.]
I have not kissed Eva
'I haven't kissed Eva.'

b. Jag kysste inte Eva.
I kissed not Eva
'I didn't kiss Eva.'

Object shift (OS) is the term used for the word order shown in (2) where a pronominal object precedes a sentential adverb.

(2) Jag kysste henne inte. [Sw.]
I kissed her not
'I didn't kiss her.'

Previous research on object shift OS in the Scandinavian languages has revealed that it is a multi-faceted phenomenon involving prosody, syntax, semantic-pragmatic factors as well as processing aspects related to the cognitive status of the referents. In this paper we discuss the role of subcategorization, an aspect first brought up in Ørsnes (2013). We agree with Ørsnes that there is a syntactic constraint but we believe that the relevant distinction is not whether the verb subcategorizes for an NP/OBJ or not but whether the verb takes an open or closed function as complement.

[†]We are grateful to Alex Alsina, Helge Dyvik, Helge Lødrup and Péter Szűcs for comments during the online LFG20 workshop and to two anonymous reviewers. We thank Maia Andréasson, Gunlög Josefsson, Filippa Lindahl and Benjamin Lyngfelt for judgments on the Swedish data and Bjarne Ørsnes for comments on a previous draft. We remain responsible for the interpretation of their judgments and comments.

In section 2 we briefly summarize previous research on OS before identifying three types of verbs in section 3. In section 4 we investigate the subcategorization of propositional complements more closely, looking also at *equi* and *raising* verbs. In section 5 we propose an LFG analysis for Swedish which involves a minor modification of the proposal in Sells (2001). In section 6 we summarize Ørsnes' analysis of Danish and show how it differs from our analysis of Swedish. Our analysis raises the question why the difference between XCOMP and COMP with obligatory anaphoric control would have consequences for a phenomenon that is in general seen as being conditioned by information structural factors.

2 Previous research on object shift

Early on it was established that only unstressed pronouns could be shifted and only in matrix clauses with a single finite verb, as in example (2), see Holmberg (1986) and Hellan and Platzack (1995). Examples where the pronoun is stressed or where there is an auxiliary verb are impossible:

(3) a. *Jag kysste HENne inte.
I kissed HER not

b. *Jag har henne inte kysst.
I have her not kissed

At first it was thought that in Norwegian and Danish, OS is obligatory when its syntactic conditions are met and the pronoun is unstressed, whereas it is optional in Swedish. But more recent research has shown that in all the languages other conditions play a role. Specifically the behavior of *det* 'it' as a sentential or VP anaphor has drawn much attention as it is more likely to resist OS than anaphors with nominal antecedents. Andréasson (2008) shows that in her corpus of Danish and Swedish, pronouns with entity antecedents were highly likely to shift (above 90%) whereas pronouns with sentential antecedents shifted in around 70% of the cases. Anderssen and Bentzen (2012) and Bentzen and Anderssen (2019) appeal to differences in topicality, whereas others cast this in terms of the accessibility of the referent in the mind of a listener or speaker. Andréasson (2013) discusses the relative strength of referent type, accessibility and factivity in an Optimality Theory analysis that makes use of the feature ACTVN from O'Connor (2006). She suggests that only elements that are highest on the *givenness hierarchy* of Gundel et al. (1993) may shift. Borthen (2004) and Lødrup (2012b) have shown that when an entity pronoun is used with a *type* reading, it is less acceptable in shifted position. Several researchers have pointed out that referents that are introduced by *factive* verbs are more likely to shift (see e.g. Andréasson 2010). Ørsnes (2013) and Bentzen and Anderssen (2019) among others link this to the fact that factive complements are more likely to be treated as part of the common ground. An LFG syntactic treatment for Swedish is given in Sells (2001).

3 Object shift and subcategorization

In this paper we focus on a syntactic constraint that was first pointed out for Danish in Ørsnes (2013). He argues that the subcategorization of the verb governing the pronoun plays an important role: only verbs that subcategorize for both NP/OBJ and VP/XCOMP complements allow OS. Ørsnes compares verbs like *savne* 'to miss' which alternate between a VP complement and an NP complement, see (4a), with subject raising verbs like *pleje* 'to use to' which only take VP complements, (4b).

(4) a. Jeg savner [at drikke øl / øldrikning]. [Da.]
I miss to drink beer / beer.drinking
'I miss drinking beer.'

b. Jeg plejer [at drikke øl / *øldrikning].
I use.to to drink beer / beer.drinking
'I usually drink beer.'

Ørsnes then shows that this affects OS, using the proform *det* 'it' which can take either a VP or an NP as antecedent. With *savne* both the in situ and the shifted positions are possible. Which version is chosen in a particular context depends, according to Ørsnes (2013), on the information structural status of the pronoun. With *pleje*, only the in situ version is possible.

(5) a. Savner du det ikke / ikke det? [Da.]
miss you it not / not it
'Don't you miss it?'

b. Plejer du *det ikke / ikke det?
use.to you it not / not it
'Don't you usually do that?'

Corresponding examples in Swedish behave similarly but we think that the generalization is slightly different from the one Ørsnes proposes. We have investigated verbs that take clausal complements, either VP or SENTENTIAL ones, using both large text corpora and native speakers' judgments.[1] With respect to OS, we find three patterns.

- Type A: verbs that allow OS
- Type B: verbs that only allow OS under certain circumstances
- Type C: verbs that don't allow OS

Type A verbs allow the complement to be replaced by the VP anaphor *det* both in situ and shifted, as shown in (6).

[1] We have primarily searched in the Swedish Language Bank (2.1 G tokens) using the *Korp* search engine `https://spraakbanken.gu.se/korp`.

(6) a. De accepterade att betala högre skatt. [Sw.]
they accepted to pay higher tax
'They accepted to pay higher taxes.'

b. De accepterade det inte / inte det.
they accepted it not / not it
'They didn't accept it.'

Type B verbs are more seldom used with OS. They include verbs of propositional attitudes like *tro* 'think, believe' and *anta* 'assume'. OS is clearly dispreferred in (7).

(7) 'Will you come to the party tonight?'

a. Jag tror inte det. [Sw.]
I think not it
'I don't think so.'

b. #Jag tror det inte.
I think it not

But, as Andréasson (2013) points out, there are contexts where contrastive stress on another element than *det* is motivated and then the shifted version is preferred, as for instance in the corpus example in (8).

(8) So you think that she is a murderer?

a. Jag tror det inte. Jag fruktar det. [Sw.]
I think not it I fear it
'I don't think so. I fear that it is so.'

b. Jag TROR det inte. Jag FRUKtar det.
I think it not I fear it

In (8a) the verb *tror* is contrasted with the verb *frukta*. If spoken, there would be contrastive stress on the two verbs, as shown in (8b) and destressing of the pronoun. The contrastive stress does not need to be on the verb, as shown in (9).

(9) Vi antog att vattnet var tjänligt, våra GRANnar antog det
*we assumed that water.*DEF *was drinkable our neighbours assumed it*
inte. [Sw.]
not
'We assumed that the water was drinkable, our neighbours didn't.'

Type C verbs don't allow OS at all, not even with contrastive stress. They are auxiliary verbs such as temporal *ha* 'have'. Given the question in (10), it is natural to stress the verb in the reply, but still only the unshifted option is possible.

(10) Visst har du varit i Oslo?
'You have been to Oslo, haven't you?'

a. Nej, jag HAR inte det. [Sw.]
no I have not it
'No, I haven't.'

b. *Nej, jag HAR det inte.
no I have it not

c. *Nej, jag HAR inte.
no I have not

In English, the answer would most likely involve VP deletion, as shown in the translation of (10a). Deleting the proform *det* is not possible in Swedish, see (10c).

The habitual *bruka* 'use to', cf. Danish *pleje* in (5), is also a type C verb.

(11) Olle dricker visst kaffe idag.
'Look, Olle is drinking coffee today.'

a. BRUkar han inte det? [Sw.]
use.to he not it
'Doesn't he usually do that?'

b. *BRUkar han det inte?
use.to he it not

In the next section we look at what complements these three types of verbs subcategorize for.

4 Subcategorization of propositional complements

In LFG a distinction is made between COMP and XCOMP. The primary example of COMP complements are tensed embedded clauses such as *that*-clauses in English. In these cases, the arguments of the main predicate of the embedded clause are realized locally, except when functional uncertainty constraints allow for the non local realization of one of the arguments. Functions that contain all the arguments of their primary predicate locally are called **closed** functions.

The canonical example of an XCOMP relation is the raising construction. Here one argument of the embedded clause is realized in the main clause and is related to the embedded predicate via functional control. The syntactic subject of the matrix verb is not a thematic dependent of that verb. The motivation for this are the well-known arguments for raising: e.g. *seem* doesn't impose thematic co-occurrence restrictions on its SUBJ: they are inherited from the lower verb, see the lexical entry for *seem* in (12).

(12) **seem** ⟨ (↑ XCOMP) ⟩ (↑ SUBJ) ; (↑ SUBJ) = (↑ XCOMP SUBJ)

The functional control equation, however, manages syntactic properties, not thematic ones; it insures unification of the higher and the lower subject, so that the syntactic constraints are the same. A good illustration of these are the Icelandic raising facts; when the lower verb selects for a non-nominative subject, the higher

subject will exhibit the same case marking (Andrews 1982). Functions that depend on functional control for the satisfaction of functional completeness are **open** functions.

In early LFG infinitival *equi* complements were often analyzed as XCOMPs. However they differ from raising complements in that the matrix subject is a thematic argument of the matrix verb as well as of the embedded one. This means that the subjects do not have to be unified syntactically; only the referential indices have to be the same. For instance, in Icelandic, the case agreement facts that are found with *raising* are not found with *equi*. More recently (see e.g. Dalrymple et al. 2019) it has been argued that the complements of equi verbs are COMPs but a special type that involves *obligatory anaphoric control*. Anaphoric control is in general not obligatory; the antecedent of a pronoun can be found in various not syntactically specified positions. With *equi* however, the referential index of the embedded SUBJ is shared with the referential index of the SUBJ of the matrix verb.[2]

To insure that the subject of the embedded clause is a PRO that is coreferent with the matrix subject, we could write the following equations (but it is most likely better left to the semantic component as in Dalrymple et al. (2019, 593ff.)).

(13) **try** V (↑PRED) = 'TRY'⟨(↑SUBJ), (↑COMP)⟩
(↑ COMP SUBJ PRED) = 'PRO'
(↑ SUBJ INDEX) = (↑ COMP SUBJ INDEX)
(↑ COMP FINITE) $=_c$ -

(The last of these equations insures that the complement of *try* is not finite.)

The partition of complements between OBJ and COMP has also come up for revision. Traditionally it was assumed that only DPs can be OBJ but Dalrymple and Lødrup (2000) and Lødrup (2002, 2012a) have argued that clausal complements can also be OBJs. We adopt this proposal here.[3] All together then we have the following options: XCOMP, an open function, and the closed functions OBJ, COMP and COMP with obligatory anaphoric control, which we will represent as COMP-OAC. This means we have three types of verbs, A,B and C, and three types of complements. Is there a correlation?

4.1 A correlation in Swedish

The subcategorization of Swedish propositional complements has not been studied in great detail (except for an early study by Ureland 1973). We base ourselves mainly on Lødrup's studies of Norwegian in the categories that we propose here. Specifically we follow him in using alternation with DPs and passivization as tests to distinguish between OBJ and COMP sentential complements. It turns out

[2]We limit our discussion to *subject control* verbs. With *object control* verbs the controller is identified as OBJ or OBJtheta of the matrix verb.

[3]But we do not always agree on the exact classification of the verbs, see Zaenen and Engdahl (to appear) for discussion.

that there is quite a good correlation between complement type and verb types in Swedish.

- OBJ-taking verbs are type A (allow OS)
- XCOMP-taking verbs are type C (don't allow OS)
- sentential COMP-taking verbs are type B
- COMP_{OAC} (*equi*) are either type A or B

We now go through the evidence, starting with type A.[4] The Swedish verb *acceptera* 'accept' takes an OBJ and behaves just like its Norwegian counterpart, *akseptere*, see Lødrup (2004, 70f.). It is an *equi* verb which takes an OBJ-OAC. The complement alternates with a DP object, it allows a personal passive and, we add, it allows OS (14d).

(14) a. De accepterade att betala högre skatt. [Sw.]
they accepted to pay higher tax
'They accepted to pay higher taxes.'

b. De accepterade chefens förslag.
they accepted boss' suggestion
'They accepted the boss' suggestion.'

c. Att betala högre skatt accepterades inte.
*to pay higher tax accepted.*PASS *not*
'To pay higher taxes was not accepted.'

d. De accepterade det inte.
they accepted it not
'They didn't accept it.' 'They didn't accept (to do so).'

The *equi* verb *sakna* 'lack, miss', which takes a COMP-OAC, is also a type A verb as shown in (15). The complement alternates with a DP which can become the subject in a passive, but the COMP-OAC argument cannot, unlike *acceptera*. OS is possible.

(15) a. Han saknar att dricka öl. [Sw.]
he misses to drink beer
'He misses drinking beer.'

b. Han saknar ölen / öldrickandet.
*he misses beer.*DEF */ beer-drinking.*DEF
'He misses the beer / the beer drinking.'

c. Ölen saknas.
*beer.*DEF *miss.*PASS
'The beer is missing.'

[4] Type A verbs of course include plain OBJ taking verbs as well, but we are here concentrating on verbs taking clausal complements.

d. *Att dricka öl saknas.
*to drink beer miss.*PASS

e. *Det saknas att dricka öl.
EXPL *miss.*PASS *to drink beer*

f. Han saknar det inte.
he miss it not
'He doesn't miss it.'

We have already seen that *tro* 'think, believe' is a type B verb. In Zaenen and Engdahl (to appear) we suggest that it sucategorizes for COMP. As evidence for this we can note that *tro* does not take a DP object that corresponds to a clausal complement and only allows impersonal passives. OS requires a special context.[5]

(16) a. Ingen trodde *(på) historien. [Sw.]
*nobody believed on story.*DEF
'Nobody believed the story.

b. *Att Northug skulle vinna troddes (av reportern).
*that Northug would win believed.*PASS *by reporter.*DEF

c. Det troddes allmänt att Northug skulle vinna.
EXPL. *believed.*PASS *generally that Northug would win*
'It was generally believed that Northug would win.'

d. #Jag tror det inte.
I believe it not

The *equi* verb *försöka* 'try' takes COMP-OAC and is also a type B verb. It does not take a DP object, does not passivize and OS is marked.[6]

(17) a. Han försökte *ölen / *öldrickande. [Sw.]
*he tried beer.*DEF */ beer-drinking*
Intended: 'He tried the beer / drinking beer.'

b. *Att dricka öl försöktes (av Olle).
*to drink beer tried.*PASS *by Olle*

[5]This verb can be construed with a personal pronoun object in which case OS is possible.

(i) Jag tror dig inte. [Sw.]
I believe you not
'I don't believe you.'

[6]The reason we classify *försöka* as a type B verb is that there are very few hits with OS in the large Swedish Language Bank (2.1 G). One example from the Finnish newspaper *Syd-Österbotten* 2011 is given in (i).

(i) Jörn Donner löser inte gåtan Mannerheim, han försöker det inte heller. [Sw.]
*Jörn Donner solves not riddle.*DEF *Mannerheim, he tries it not either*
'Jörn Donner doesn't solve the puzzle Mannerheim, he doesn't try to either.'

There are two coordinated main clauses; both verbs are negated and contrasted.

c. *Det försöktes (att) dricka öl.
EXPL *tried.*PASS *to drink beer*

d. #Han försökte det inte.
he tried it not
'He didn't try.'

Type C verbs are typical *raising* verbs and subcategorize for XCOMP. These verbs allow expletive subjects but do not take DP objects, do not passivize and OS is not possible.

(18) a. Det brukar regna här. [Sw.]
EXPL *use.to rain here*
'It usually rains here.'

b. Eva brukar sova länge på morgonen.
Eva use.to sleep long on morning
'Eva usually sleeps late in the morning.'

c. *Eva brukar sömn / sovande.
Eva use.to sleep / sleeping

d. *Sova länge brukas.
*sleep long use.to.*PASS

e. *Hon brukar det inte.
she use.to it not

4.2 Modal auxiliaries

If *equi* verbs take COMP-OAC and auxiliaries take XCOMP, what about modal auxiliaries like *kunna* 'can' and *måste* 'must'? As is well known, they can be used both as epistemic and root modals (see e.g. Teleman et al. 1999, 4:283ff. and Eide 2005) (in addition to other possible readings that we have not investigated). Lødrup (1994) for Norwegian and Thráinsson and Vikner (1995) for Danish have observed that OS is sometimes possible with modal verbs, but only on the interpretation where the subject is a thematic argument of the verb. The examples in (19) and (20) are from Lødrup (1994, 305).

(19) Kan du strikke votter nå?
'Are you able to knit mittens now?'
Nei, jeg kan det ikke ennå. [No.]
no I can that not yet
'No, I'm not able to do that yet.'

(20) Kan bussen ha kommet nå?
'Is it possible that the bus has come?'

a. Nei, den kan ikke dét. [No.]
no it can not that
'No, it can't have.'

b. ??Nei, den kan det ikke.
no, it can that not

In (19) the question is whether the addressee is able to knit mittens. The subject is hence a thematic argument of *kan* which calls for a COMP-OAC analysis; here OS is possible. In (20), the subject is not a thematic argument of *kan*, only an epistemic interpretation is possible and OS is unlikely.

The Swedish example in (21) works the same way; OS is not possible, not even with contrastive stress.[7]

(21) Kan bussen ha kommit redan?
'Is it possible that the bus has already come?'

a. Nej, den kan inte det. [Sw.]
no it can not it
'No, it can't have.'

b. *Nej, den kan det inte.
no, it can it not

c. *Nej, den KAN det inte.
no, it can it not

We thus assume that the modals are *equi* verbs that take COMP-OAC when their subject is a thematic argument of the verb whereas they are *raising* verbs that take XCOMP in other contexts, e.g. in their epistemic uses. It then comes as no surprise that some modals allow OS under the right stress conditions. The example in (22) comes from an editorial in *Dagens Nyheter*, a Swedish newspaper.

(22) Frågan är vem som kan besegra Trump. Hillary Clinton kunde det inte.
question is who that can conquer Trump Hillary Clinton could it not
'The question is who can win over Trump. Hillary Clinton wasn't able to do so.'

The question under discussion is who can win over Trump. The following sentence is most naturally produced with a focus accent on the subject and destressing of the verb and the pronouns. The subject *Hillary Clinton* is a thematic argument of the the modal *kunde* 'was able to'.

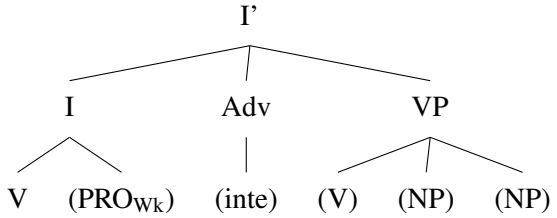
5 An LFG account

Under the assumptions made above, an LFG account is straightforward. First we assume, with Lødrup (2012b), that NPs can carry the specifications XCOMP and

[7] Lødrup renders the pronunciation of the shifted versions in (19) and (20b) as one phonological phrase *kan-det-ikke* whereas the *det* in situ in (20a) is accented. In Swedish too the epistemic reading is unavailable with a shifted *det*. But unlike Norwegian, *det* in situ does not require an accent and can even be cliticized onto the a sentence adverbial (Teleman et al. 1999, 2:270f., Engdahl and Lindahl 2014 and Erteschik-Shir et al. 2020).

COMP. More specifically we assume that the proform *det* is specified for the function that corresponds to the clausal subcategorization of the verb it occurs with, so it can be an OBJ, a COMP as well as an XCOMP. Second, we adopt the phrase structure rules proposed in Sells (2001) which give rise to the simplified structure below. There is a position for shifted weak pronouns under I.

(23)



Sells (2001) assumes that material under PRO is restricted to direct GFs (SUBJ, OBJ, OBJtheta). We propose instead that it is restricted to closed functions.

Since there is no such restriction on *det* occurring in situ in the VP, all types of *det* can occur there. In the shifted position, the pronoun is under I and hence restricted to complements of verbs that subcategorize for OBJ or COMP.[8]

6 *det* in Danish and Swedish

The solution above handles the Swedish facts well. We now look at the Danish facts and discuss how they fare. There is an interesting difference between Danish on the one hand and Norwegian and Swedish on the other which is relevant. All three languages have the same proform *det*, which is often referred to as a VP anaphor since it replaces a whole VP.[9] It correponds more or less to VP deletion in English, as shown in the English translations of the examples. Compare the Swedish and Danish replies to a question like *Did Peter drink beer last night?*

(24) Nej, han brukar inte det. [Sw.]
no he uses not it
'No, he usually doesn't.'

(25) a. Nej, han plejer ikke at gøre det. [Da.]
no, he uses not to do it
'No, he usually doesn't.'

b. ??/*Nej, han plejer ikke det.
no he uses not it

Whereas it is fine to have *det* in situ in Swedish, this is strongly dispreferred in Danish; instead the support verb *gøre* 'do' has to be inserted (Ørsnes (2011). This

[8] Sells (2001) actually adds a proviso for locative proforms. Under our proposal locative proforms would be allowed but we will need a restriction on the type of ADJs that are possible.

[9] See Lødrup (1994, 2012b), and Houser et al. (2007) for arguments that this *det* is a surface anaphor which requires a linguistic antecedent.

has nothing to do with OS since in both languages *det* is realized in the VP. We get the same pattern with the temporal auxiliary in replies to a question like *Have you posted the letters?*[10]

(26) Ja, jag har det. [Sw.]
yes I have done it
'Yes I have.'

(27) a. Ja, jeg har gjort det. [Da.]
yes I have done it
'Yes I have.'

b. *Ja, jeg har det.
yes, I have it

Again we see that Danish does not allow the VP anaphor in situ without *gøre* whereas this is fine in Swedish. The way Ørsnes accounts for the Danish pattern is as follows. He assumes that *det* is always an NP of category OBJ. Since *pleje* and *have* subcategorize for XCOMP, there will be a clash if we insert *det*. But *gøre* subcategorizes for an OBJ, so inserting *gøre* avoids the clash.

Ørsnes doesn't discuss Swedish. On our approach, *det* has the category of the complement that the verb subcategorizes for. Consequently having det_{XCOMP} in situ in (24) or (26) does not cause a problem.

It seems then that the difference between Swedish (and Norwegian) and Danish might lie in the difference in the categorization of *det* in the languages: in Danish it is always an OBJ, in Swedish and Norwegian it can be an OBJ, an XCOMP or a COMP. The situation is however complicated by the fact that when *det* is topicalized, which is quite common, *gøre* is optional. In this respect Danish and Swedish behave exactly the same way; both examples in (28) are natural replies to the question *Did Peter drink beer last night?*

(28) a. Nej, det plejer han ikke (at gøre). [Da.]
no it use.to he not do
'No, he usually doesn't.'

b. Nej, det brukar han inte (göra). [Sw.]
no it use.to he not do
'No, he usually doesn't.'

For Swedish we assume that det_{XCOMP} can be topicalized but this solution is not available to Ørsnes who assumes that *det* in Danish is always an NP of category OBJ. Since *pleje* in (28a) does not subcategorize for OBJ, the standard topicalization via functional uncertainty does not work. Instead Ørsnes proposes to let topicalization relax the subcategorization requirements so that a topicalized con-

[10]Example (27) supplied by Bjarne Ørsnes, e-mail, March 2020.

stituent can be of a different category than that required by the verb.[11] Constituents which appear in the 'canonical' complement position after the verb must still meet the subcategorization requirements (2013, 254). Ørsnes refers to examples like (29) from Bresnan (2001, 17).

(29) [$_{\text{CP}}$ That he was sick] we talked about [$_{\text{–NP}}$] for days.

However, as we have seen, *det* sometimes may appear post-verbally without *gøre*-support, as in the in situ version in (30), repeated from (5b).

(30) Plejer du *det ikke / ikke det? [Da.]
use.to you it not / not it
'Don't you usually do that?'

According to Ørsnes this only happens when topicalization isn't possible. The crucial difference between (25) and (27), where *gøre* is required, and (30) is that the latter is a verb initial yes/no question where topicalization is unavailable. In such cases a discourse prominent topic *det* may appear post-verbally without *gøre*-support. The reason that such a topic *det* can not appear in the shifted position in (30) is, according to Ørsnes (2011, 424f.), that it is stressed and has to appear after the negation since OS in Danish only applies to unstressed, non-topical, elements.

We have not investigated whether in situ VP anaphors in Danish are stressed. In Swedish such anaphors can cliticize onto the negation (Erteschik-Shir et al. 2020) which suggests that they are not stressed. Still an unstressed *det*$_{\text{XCOMP}}$ may not shift which we account for by a syntactic restriction on what types of weak proforms may appear under I in the tree.[12]

6.1 Polysemous verbs

Restricting the shifted position to *det*$_{\text{OBJ}}$ and *det*$_{\text{COMP}}$ has an interesting consequence for polysemous verbs; a pronoun in the shifted position forces one of the readings. We can illustrate this with the verb *ha*. So far we have only looked at examples with the temporal auxiliary *ha* but there is also a main verb *ha* 'be in possession of' which subcategorizes for OBJ. Object shift disambiguates:

[11] See Ørsnes (2011) for a detailed LFG analysis of non-finite *do*-support in Danish. On page 422 he gives a C-structure rule for CP-expansion which allows topicalized VPs and NPs to map either to XCOMP or OBJ. Mikkelsen (2015) analyzes similar VP anaphora data in a feature based Minimalist framework.

[12] The Swedish raising verb *verka* 'seem' and the phasal verbs *börja* 'begin' and *sluta* 'end' behave like the Danish auxiliaries in that they don't allow the proform *det* as complement without *göra*. These verbs, in addition, do not allow topicalization of *det* without *göra*-support. Further investigations are clearly needed. We should also point out that not all *equi* verbs allow the complement to be pronominalized by *det*. This applies to e.g. *hota* 'threaten' and *tveka* 'hesitate' which take XCOMP according to Lødrup (2004). They differ from COMP-OAC taking verbs like *försöka* and *sakna* in that they don't allow VP topicalization at all.

(31) a. Nej, jag har inte det. [Sw.]
no, I have not it
'No, I haven't'.

b. Nej, jag har det inte.
no, I have it not
'No, I don't have it'.

The unshifted order in (31a) is a possible answer to a question like *Have you been to Oslo?* whereas the shifted (31b) can only be used in reply to a question like *Har du brevet?* 'Do you have the letter?', in which case *ha* is a lexical verb. In (31b) *det* would refer to the just mentioned letter which has neuter gender in Swedish.[13]

The disambiguating effect can also be found with verbs that subcategorize for a single complement type but have more than one meaning. A case in point is the Swedish verb *tro* which translates into English either as 'think' or as 'believe'. In a corpus study, Andréasson and Engdahl (in prep.) have found that when the verb is used with the unshifted order, the example is best translated using 'think', and the shifted order is naturally translated using 'believe'.[14] The following examples are from a corpus of blog texts in *Korp*.[15]

(32) a. får se om jag hinner blogga mer senare, men jag tror inte det.
let see if I have time blog more later but I think not it
'Let's see if I have time to write more (in this blog) later, but I don't think so'.

b. man tror det inte förrän man ser det
one believes it not before one sees it
'You don't believe it until you see it'.

Andréasson and Engdahl (in prep.) investigate the correlation between the two orders and the factivity induced by the context.[16]

[13] A similar point is made by Ørsnes (2013:256) with respect to the polysemous Danish verb *agte* which translates as 'honour' when used with an NP and as 'intend' when used with a VP. The Swedish verb *bruka* 'use to', which we have shown is an XCOMP-taking verb, can also be construed with an NP denoting a substance, in which case it has the meaning 'use (a drug)'. This usage is much less common than the auxiliary use but the single example with the shifted order found in *Korp* has this meaning.

(i) jag förespråkar att cannabis ska bli lagligt å jag brukar det INTE själv idag :)
I advocate that cannabis shall become legal and I use it not self today
'I advocate legalizing cannabis (despite the fact that) I don't use it myself today.'

[14] As shown in the example in note 5.

[15] The effect of contrast noted in connection with example (8) does not affect the lexical meaning; this example is still best translated with 'think' despite the contrast induced shift.

[16] During the workshop, Helge Dyvik reported that he had found a similar difference in the Norwegian treebank *NorGramBank* and suggested that the unshifted *det* refers to an activated proposition whereas a shifted *det* is more likely to refer to a recent speech act. This distinction seems to be relevant for some of the Swedish data as well.

7 Concluding remarks

We account for syntactic constraints on OS in Swedish by distinguishing types of clausal complements, OBJ, COMP and XCOMP. We assume that *equi* verbs take COMP with obligatory anaphoric control, distinguishing them from *raising* verbs that take XCOMP with functional control. Following Lødrup (2012b), we assume that the proform *det* in Swedish is specified for the function that corresponds to the clausal subcategorization of the verb it occurs with. We thus have the following types of *det*: det_{OBJ}, $det_{\text{OBJ-OAC}}$, det_{COMP}, $det_{\text{COMP-OAC}}$ and det_{XCOMP}.

Our investigation of the distribution of *det* has revealed that det_{XCOMP} cannot appear in shifted position and we account for this by a phrase structure restriction, assuming the clause structure proposed in Sells (2001): PRO_{Wk} [under I] is restricted to closed functions. This means that det_{XCOMP} cannot appear there. This is a syntactic constraint which cannot be mitigated by information structure, e.g. contrastive stress, which has been found to affect when det_{COMP} and $det_{\text{COMP-OAC}}$ appear in shifted position.

Although we have emphasized the importance of this syntactic constraint in this paper, we are convinced that in order to get a full understanding of when object shift can, must or cannot apply, one needs to take into account information structural aspects as well as the prosodic realization of the utterances (see e.g. Josefsson 2010 and Erteschik-Shir et al. 2020). Several factors have been identified in the studies mentioned in the introduction. It has been observed that sentential anaphors shift less easily than entity anaphors and that factivity seems to play a role. It might be that what unifies these different cases is that OS is dispreferred when the anaphor is less easy to interpret, for example when more processing is required to get from the anaphor to its antecedent, either because the antecedent might not be in the center of attention of the listener or because the relation between the anaphor and the antecedent is not one of simple coreference.

It is, however, not clear how this generalization would account for the syntactic constraint we discuss in this paper. One way would be to postulate that processing an open function requires the further operation of calculating a proposition from a property by filling in the missing argument (as in *raising* with functional control). But it is not immediately clear why that should be more difficult than filling in the value of a PRO (as in *equi* with anaphoric control). We have to leave this for further study. What is clear is that many different factors play a role in determining whether OS is felicitous or not. It is thus not surprising that most recent analyses of object shift use Optimality Theory to model the interaction between different types of constraints, see e.g. Sells (2001), Andréasson (2013), Engels and Vikner (2013, 2014) and Ørsnes (2013).

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