NOT ALL OBJECTS ARE BORN ALIKE
– accessibility as a key to pronominal object shift in Swedish and Danish

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Abstract

This paper presents results from a corpus investigation of written Swedish and Danish. The results show that pronominal objects with clausal or VP antecedents appear relatively more seldom before sentence adverbials, i.e. are more seldom shifted, than referents with NP antecedents. I argue that this is due to a difference in cognitive status (cf. Gundel, Hedberg & Zacharski 1993), where pronouns with clausal or VP antecedents that appear in +FAC-TIVE environments and pronouns with NP antecedents are easier to process, which licenses object shift as well as an unstressed pronunciation. Pronominal objects with clausal or VP antecedents in −FACTIVE environments are harder to process and appear after sentence adverbials. For the LFG architecture the relation between cognitive status and information packaging gives rise to the need for a more fine grained value of the i-structure ACTVN feature introduced by O'Connor (2006).

The paper also raises the question on whether research about the underlying mechanisms of object shift should be limited to two syntactic positions, i.e. object placement in relation to the sentence adverbial. Preliminary results show that the initial position in V2 clauses also need be investigated.

1 What is pronominal object shift?

The Scandinavian languages are similar in many respects. Their mutual history has resulted in the lexicon and the syntactic structures being very similar. These similarities provide an environment where the study of the differences come to resemble a laboratory situation, and the variation can be studied in the backdrop of the major part of the grammatical system being constant. This paper deals with one of these small syntactic differences, namely pronominal object shift. Object shift is a phenomenon that has attracted the interest of many linguists over the years and it is consequently well described in the literature, just a few examples are: Holmberg (1986, 1999), Hellan & Platzack (1995), Josefsson (1992; 2003), Sells (2001), Svenonius (2002) and Vikner (1994, 1997).

Holmberg's generalization (Holmberg 1986; 1999) says that pronominal objects in the Scandinavian languages normally appear before sentence adverbials, see example (1a) where *honom*/*ham* appear before the sentential negation *inte*/*ikke*. This position will be called *shifted* throughout this paper. It is only possible for a pronominal object to appear in the shifted position when the lexical verb is in the V2 position, see the ungrammatical (1b) where the lexical verb *sett*/*sedt* is in VP.

(1) a. Agnes såg   *honom* inte. [SW]
         Agnes så   *ham*   ikke. [DA]
         Agnes see-PST him   not
         'Agnes didn't see him.'

   b.   *Agnes har   *honom* inte sett.   [SW]
         *Agnes har   *ham*   ikke sedt.   [DA]
         Agnes have-PRS him   not see-PSTP
         'Agnes hasn't seen him.'

Full NP objects appear after sentence adverbials in all Scandinavian languages except Icelandic, also when the lexical verb is in the V2 position, see example (2a) and the ungrammatical (2b). The object position after the sentence adverbial will be called *in situ* throughout this paper.

(2)   a.   Agnes såg   inte *nallen.*   [SW]
           Agnes så   ikke *bamsen.*   [DA]
           Agnes see-PST NEG teddy-bear-DEF
           'Agnes didn't see the teddy bear.'
    b.   *Agnes såg   *nallen*   inte. [SW]
           *Agnes så   *bamsen*   ikke. [DA]
           Agnes   see-PST teddy-bear-DEF NEG
           'Agnes didn't see the teddy bear.'

In Icelandic full NP objects may also appear before a sentence adverbial when the lexical verb is in V2, see (3) (from Vikner 2005). Shift of full NPs is not discussed in this paper.

(3)   a.   Af hverju las   Pétur aldrei *þessa bók*? [ICE]
           what   read-PST Peter never this   book
           'Why did Peter never read this book'
    b.   Af hverju las   Pétur *þessa bók*   aldrei. [ICE]
           what   read-PST Peter this   book never
           'Why did Peter never read this book?'

One feature of pronominal objects that has been seen as the key to why the objects appear before sentence adverbials is the fact that only pronouns without stress – so called "weak" objects – may appear in the shifted position. In example (4) these unstressed pronouns are marked with a superscripted zero.

(4)   Agnes letade   efter David, men hon såg ^{0}*honom* inte. [SW]
       Agnes søgte   efter David, men hun, så ^{0}*ham*   ikke. [DA]
       Agnes look-PST after David but she see-PST him   not
       'Agnes was looking for David, but she didn't see him.'

If a pronoun has a contrastive interpretation it is pronounced with contrast intonation, here marked with superscripted double apostrophes and it cannot shift, see (5), where *honom*/*ham* is contrasted with *Agnes* in the preceding sentence.

(5)   David såg   Agnes, men hon såg   inte "*honom*. [SW]
      David så   Agnes, men hun så   ikke "*ham*.   [DA]
      David see-PST Agnes, but she see-PST not him
      'David saw Agnes, but she didn't see him.'

In Swedish, the non-stressed pronominal objects may also marginally appear in situ, see example (6). This word order may also be found in Norwegian and Danish dialects (cf. Pedersen 1993). However, all further reference to Danish in this paper is about standard Danish.

(6)   Agnes letade   efter David, men hon såg   inte ^{0}*honom*. [SW]
       *Agnes søgte   efter David, men hun så   ikke ^{0}*ham*.   [DA]
       Agnes look-PST after David but she see-PST NEG him
       'Agnes was looking for David, but she didn't see him'

A factor that is often left out in investigations of object shift is the fact that the shifted and in situ positions are not the only possible positions for pronominal objects in the Scandinavian languages. Pronominal objects are also very frequent in the first position, immediately before the finite verb in V2 sentences, see (7), where the object *den* appears as the first element of the clause. This is a position where both contrasted and non-contrasted objects appear.

(7)   Det   var   en nalle   i väskan, men *den* såg hon inte. [SW]
       Der   var   en bamse   i tasken, men *den* så hun ikke. [DA]
       it/there be-PST a teddy-bear in bag-DEF but it   saw she not
       'There was a teddy bear in the bag, but she didn't see it.'

We will not deal with this position in this paper, but, as we will see later, some preliminary results indicate that the initial position is indeed of relevance for the analysis of the factors that trigger object placement, and hence object shift, in the Scandinavian languages.

Most analyses of pronominal object shift deal only with pronouns with NP antecedents, as those discussed in the examples so far, even if this does not seem to be a deliberate delimitation. In this paper these kinds of objects are called pron$_{<e>}$, where *<e>* = 'entity'. The possible positions for pron$_{<e>}$ in Swedish and Danish in relation to contrast are summarised in figure 1, below.[1]

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[1] The phenomenon of so called long object shift (cf. Josefsson 1992, 2003), where an object appears after the finite verb, but before the subject (as in *I år gav mig$_{obj}$ Anders$_{subj}$ inte någon julklapp*, 'This year Anders did not give me any christmas gift') is not included here and will not be discussed in this paper.

SWEDISH	1st position	shifted	in situ
non-contrasted	✓	✓	✓
contrasted	✓	*	✓

DANISH	1st position	shifted	in situ
non-contrasted	✓	✓	*
contrasted	✓	*	✓

FIGURE 1: *Positions for pronominal objects with NP antecedents, pron$_{<e>}$, in Swedish and Danish*

Nevertheless, not all pronouns "are born alike" and this paper deals mostly with the distribution of pronominal objects with non-NP antecedents. This category of objects has not received much attention in the object shift literature (however see Lødrup 1994). Example (8a) shows a pronominal object with a clausal antecedent, while the object in example (8b) has a VP antecedent.

(8) a. [Agnes är   söt.]$_i$ Tycker   du inte *det$_i$*? [SW]
         [Agnes er   smuk.] Synes   du ikke *det$_i$*? [DA]
         Agnes be-PRS cute   think-PST you NEG that
         'Agnes is cute. Don't you think so?'
     b. David har   [sett   brevet   i din väska]$_i$. *Det$_i$* har
         David har   [sedt   brevet   i din taske]$_i$. *Det$_i$* har
         David have-PRS see-PPRT letter-DEF in your bag   that have-PRS
         jag också. [SW]
         jeg også. [DA]
         I   also
         'David has seen the letter in your bag. So have I.'

In example (8a) the antecedent of the object pronoun *det* is the entire preceding clause and in (8b) it is the VP of the preceding clause that is the antecedent of *det*. Throughout this paper, these objects are labelled pron$_{<t>}$ for pronominal objects with clausal antecedents, and pron$_{<e,t>}$ for pronominal objects with VP antecedents.

2 The investigation and the project

This paper reports results from an investigation of the relative order of the negation *inte*/*ikke* and *det$_{<t>}$*/*det$_{<e,t>}$* in corpora of written Swedish and Danish. The Swedish corpus *GP04* consists of about 19 million words, one year's edition of the newspaper *Göteborgs-Posten*. The Danish corpus *Korpus 2000* (here: *K2000*) con-

sists of about 28 million words of different genres.[2] The overall aim of the study is to investigate the underlying factors that trigger the shifted or in situ placement of $\text{pron}_{<t>}$ and $\text{pron}_{<e,t>}$ although comparative studies of $\text{pron}_{<e>}$ (the pronouns *honom*/*ham* 'him', *henne*/*hende* 'her' and det_e 'it') have also been performed. The study has been both quantitative and qualitative. For a more thorough description of the investigation and the corpora, see Andréasson (in preparation).

In the corpora, searches were made for the strings *det inte*/*inte det* for Swedish, and the strings *det ikke*/*ikke det* for Danish. There are 9111 hits for the word order *det inte* in GP04. A systematic sample of 2076 were investigated and in 157 of these *det* turned out to be an object in a sentence with object shift. In K2000 there are 12.000 hits for the string *det ikke*, and, since there was no possibility of getting a systematic sample of all hits, all the 4999 hits that were possible to excerpt from the web interface were investigated. The disambiguation shows that in 191 cases *det* is an object in a sentence with object shift.

Since the sample sizes of differ, estimates of the numbers for the entire corpus for the word orders where *det* precede the negations have been made by multiplying the numbers for *det inte* by 4,4 and for *det ikke* with 2,5. All estimated numbers and percentages building on estimated numbers are marked with a star (*) in the tables throughout the paper.[3]

All the 1457 strings with the word order NEG < OBJ and all the 1913 strings with *ikke det* in GP04 and K2000 were investigated. For *inte det* 290 and for *ikke det* 177 of these are sentences where *det* is an object in the in situ position in a sentence where object shift would have been syntactically possible.

3   Distributional differences: $\text{pron}_{<e>}$ vs. $\text{pron}_{<t>}$/ $\text{pron}_{<e,t>}$

In table 1 numbers for third person singular pronouns for 'him' and 'her' combined with the negations *inte*/*ikke* in GP04 (Swedish) and K2000 (Danish) are presented.

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[2]GP04 available in Språkbanken at http://spraakbanken.gu.se/konk/ and K2000 is available at http://korpus.dsl.dk/korpus2000/faq.php?lang=dk

[3]The estimated numbers are intended as approximations. Nevertheless, they are made from a reasonably large sample and the numbers they indicate must be considered as fairly robust. Also, it is rather the fact that the there are so many examples of *det* following the negation that is the most interesting result of the investigation.

SWEDISH	shifted		in situ	
honom ('him')	77		10	
henne ('her')	38		2	
Total	115	91%	12	9%

DANISH	shifted		in situ	
ham ('him')	218		20	
hende ('her')	107		4	
Total	325	93%	24	7%

TABLE 1: *Distribution of* $pron_{<e>}$ *(*honom/henne *and* ham/hende *'him'/'her') + negation (*inte/ikke*) in Swedish and Danish*

Table 1 shows that over 90% of the $pron_{<e>}$ for 'him' and 'her' are shifted, both in Swedish and in Danish. The 24 in situ hits in Danish all seem to be contrasted, with an overt alternate set as in (9a) or an implicated alternate set as in (9b).

(9) a. Men uanset   Jörg Haider, så er   det ikke *ham*, men den
         but irrespective Jörg Haider so be-PRS it NEG him but the
         østrigske regerings   politik vi må   forholde os til, når
         Austrian government-POSS politic we must relate   us to when
         landet   skal bedømmes. [DA]
         country-DEF shall judge
         'But, irrespective of Jörg Haider, it is not him, but the Austrian gov-
         ernment's politic we must relate to when we judge the country.'
     b. Jalabert, nej han er   for gammel. Det bliver   ikke *ham*. [DA]
         Jalabert no he bePRS for old   it becomePRS NEG him
         'Jalabert, no, he's too old. It not going to be him.'

Among the 12 hits where the Swedish pronouns *honom/henne* are in situ, only 5–6 are contrasted, see (10a), and the rest are non-contrasted, see (10b). Since also non-contrasted pronominal objects may appear in situ in Swedish, see example (6) above, this is not surprising.

(10) a. Mister Whitworth verkar   inte tycka om fotografer,   och
          Mister Whitworth seem-PRS NEG like PART photographer-PL and
          fotograferna   gillar   inte *honom*.[SW]
          photographer-PL like-PRS NEG him
          'Mister Whitworth seems not to like photographers, and the photog-
          raphers seem not to like him.'

b. Jag pressade   inte *honom* och det är alltid   kul att få   komma
   I   pressure-PST NEG him   and it   is always fun to get come
   i mål som vinnare utan   att ha   en jättetrött häst, sade
   in goal as   winner without to have a   very-tired horse say-PST
   Kihlström. [SW]
   Kihlström
   'I didn't put any pressure on him and it is always nice to finish with
   a horse that is not completely exhausted.'

Nevertheless, the numbers in the table indicate that it is very rare for pron$_{<e>}$ to appear in the in situ position. This corresponds very well with the common opinion that weak objects shift obligatorily in standard Danish and optionally in Swedish (cf. Holmberg 1986, Josefsson 1992, Togeby 2003).

When it comes to pronominal objects with clausal or VP antecedents, pron$_{<t>}$ and pron$_{<e,t>}$, the investigation shows that these remain in situ to a greater extent than those with NP antecedents, pron$_{<e>}$. In table 2 the percentages of sentences with pron$_{<t>}$ and pron$_{<e,t>}$ in shifted or in situ position are compared with the percentages for sentences with the 3rd person singular masculine and feminine objects that were presented in table 1.

SWEDISH	*shifted*		*in situ*		total
	total (estim*)	*%*	total	*%*	
honom/henne<e> ('him/her')	115	91%	12	9%	127
<t> & <e,t>	129 (568*)	69% *	260	31%	828

DANISH	*shifted*		*in situ*		total
	(estim*)	*%*	total	*%*	
ham/hende<e> ('him/her')	325	93%	24	7%	349
<t> & <e,t>	156 (390*)	71% *	158	29%	548

*All numbers and percentages marked with a star are estimated.

TABLE 2: IN SITU *vs.* SHIFTED *placement of* det *with sentential/VP antecedents vs. entity antecedents in Swedish and Danish: Total.*

Both in Swedish and in Danish about 30% of the pron$_{<t>}$ and pron$_{<e,t>}$ appear in situ, and – as opposed to pron$_{<e>}$ – almost none of these turn out to be contrasted. So for this type of pronouns it does not seem to be contrast that makes them appear in situ.

Nevertheless these pronouns do not seem to be unstressed when they appear in situ. In this investigation I deal with written sources, but Danish informants note that a pron$_{<t>}$ or pron$_{<e,t>}$ in an in situ position is necessarily stressed.[4] But they

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[4]The Danish informants are colleagues at the university of Aarhus. I also noted this when presenting sentences of this kind to non-linguist informants in Western Jutland in January 2008 (Andreasson, in preparation).

also agree that this stress does not give rise to the implication that there exists an alternate set, i.e. it is not contrastive (cf. Rooth 1992). For Danish, it seems to be obligatory with some kind of stress for *det* in this position, and for Swedish it seems optional.

So it seems that for Danish, it is more or less ungrammatical for an unstressed, weak, object to appear in situ in sentences where object shift is possible and that all objects that appear in situ have some type of stress. For $\text{pron}_{<e>}$ this stress is due to the referents being contrasted, but for $\text{pron}_{<t>}$ and $\text{pron}_{<e,t>}$ the stress needs not be related to a contrastive interpretation. In Swedish also weak objects marginally appear in situ.

4   Accessibility and pronominal reference

The analysis I suggest for pronominal object shift builds on the so called givenness hierarchy of Gundel, Hedberg & Zacharski (1993) presented in Figure 2.

in focus	activated	familiar	identifiable	referential	type identifiable
it	this/that/ this N	that N	the N	indefinite this N	a N

FIGURE 2: *Givenness hierarchy of Gundel, Hedberg & Zacharski (1993).*

In the givenness hierarchy, Gundel et al. (1993) relate the choice of referring expressions in English to different cognitive statuses, so that referents that have not been previously mentioned or implicated in the context are called TYPE IDENTIFIABLE. Reference to these is made with an indefinite NP, *a N*. When the speaker refers to a particular referent its cognitive status is REFERENTIAL and it is possible to use the indefinite *this N*. A referent that is possible to uniquely identify for the listener when hearing the nominal expression has the cognitive status IDENTIFIABLE and reference with a definite NP *the N* may be used. FAMILIAR referents are assumed to be already represented in the listener's memory and reference may be made with for example definite demonstratives. The cognitively most accessible referents, are ACTIVATED or IN FOCUS. Both these statuses include referents that are active in the context and assumed to be represented in the listener's short time memory. Of these, those that are assumed to be on the top of both speaker's and hearer's attention are at the leftmost end of the scale and are said to be IN FOCUS and reference can be made with a pronoun, for example *it* (Gundel et al. 1993:275–280).[5]

Gundel, Borthen & Freiheim (1999; see also Borthen, Fretheim & Gundel 1997) show that for Norwegian the choice between the two highest cognitive levels

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[5]Please note that this use of IN FOCUS has nothing to do with information structural FOCUS (as in the GROUND/FOCUS partition), prosodic focus or contrastive focus (in the sense of Rooth 1992).

in the givenness hierarchy does not always correspond to different lexical entities, but to a difference in stress. Pronouns that are IN FOCUS are unstressed, while those that are only on the second highest level – ACTIVATED – are stressed.

This difference in stress corresponds very well with the prosodic difference that was reported for $\text{pron}_{<t>}$ and $\text{pron}_{<e,t>}$ in section 3. There is one unstressed and shifted *det* and one slightly more stressed *det* in situ. If this difference in prosody and position for pronominal objects corresponds to a difference in cognitive status, the common observation that "in mainland Scandinavian, only weak objects shift" may be reformulated as a statement about the cognitive status of shifted pronominal objects: "in mainland Scandinavian, only objects that have the cognitive status IN FOCUS shift".

4.1 Accessibility and $\text{pron}_{<e>}$

Gundel et al. (1999) show that a referent introduced into the context by an NP is generally easy to process and that immediate reference with the expression matching the highest cognitive level is possible. To illustrate this, they present the example in (11), below, where the pronoun *it* necessarily refers to the snake introduced by the NP in the previous sentence, and not to the situation of a snake being on the desk introduced by the entire preceding clause.

(11)   There was a snake on my desk. *It* scared me. [Gundel et al. 1999]
         a.   There was [a snake]$_{<e>}$ on my desk. It$_{<e>}$ scared me.
         b.   #[There was a snake on my desk.]$_{<t>}$ It$_{<t>}$ scared me.

The observation that an NP antecedent licenses an immediate reference with a pronoun at the highest level on the givenness hierarchy matches very well the numbers for shifted or in situ placement of $\text{pron}_{<e>}$ in Swedish and Danish, see table 1 above. Pronouns with NP antecedents, $\text{pron}_{<e>}$, appear in the shifted position in over 90% of the occasions both for Swedish and for Danish.

4.2 Accessibility and $\text{pron}_{<t>}$/$\text{pron}_{<e,t>}$

Gundel et al. (1999) also found that pronouns with clausal or VP antecedents, $\text{pron}_{<t>}$/$\text{pron}_{<e,t>}$, fall into one of two groups, eventualities (i.e. activities, events, states; cf. Asher 1993) and "purely abstract objects" (facts, propositions and situations). Eventualities resemble $\text{pron}_{<e>}$ in that they are easy to process and they are directly promoted to the highest cognitive level, *in focus*.

Pronouns that refer to "purely abstract object", on the other hand, are harder to process and immediate reference with a pronoun matching the highest cogntitive level is not possible. Instead the first pronominal reference is made with *that*, a pronoun matching the second highest level, ACTIVATED. Only after that, is it possible to refer to a "purely abstract object" with *it*. Figure 3 shows how pronominal reference to $\text{pron}_{<t>}$ and $\text{pron}_{<e,t>}$ with "purely abstract objects" antecedents is

made. The antecedent is called *mention 1* or *m1*, the first pronominal reference with *mention 2*, *m2* and so on.

mention 1^{m1}	mention 2^{m2}	mention 3^{m3}
clause/VP	*that*/*this*	*it*
	activated	in focus

FIGURE 3: *Reference to $< t >$/$< e, t >$ "purely abstract objects"*

Gundel et al. (1999) illustrate this with the example in (12) where *that* (*m2*) in the second sentence refers to the situation in the previous sentence (*m1*). Once reference has been made with a pronoun, reference to the situation may be made with *it* (*m3*), as in the third sentence .

(12)   [^{m1}There was a snake on my desk.]$_{<t>}$ ^{m2}*That*/**It*$_{<t>}$ scared me; ^{m3}*it*$_{<e>/<t>}$ scared my office mate too. [Gundel et al. 1999]

According to Hegarty (2003; see also Gundel, Hegarty & Borthen 2003), there is also another factor that makes clauses and VPs less or more abstract and hence easier or harder to process, namely factivity. Hegarty shows that if a fact is introduced in the complement position to a factive predicate it gets promoted immediately to the highest level of accessibility *in focus* and immediate reference with *it* is possible. If it is introduced in the complement position of a non-factive predicate, it is harder to process and immediate reference with *it* is not possible.

Also when it comes to object pronouns with clausal or VP antecedents, pron$_{<t>}$ and pron$_{<e,t>}$, the numbers for shifted or in situ placement indicate that accessibility is indeed involved. Table 3 shows that in situ placement of pron$_{<t>}$ and pron$_{<e,t>}$ is dominant in non-declarative – and hence –FACTIVE – sentence types.[6]

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[6]The non-declarative sentence types where pronominal object shift may appear are questions (both V2 and V1 questions), imperatives and V1 conditionals.

SWEDISH	*shifted*		*in situ*		total
sentence type	total (estim*)	%	total	%	
declarative	123 (541*)	75% *	177	25%	718*
non-declarative	6 (26*)	24% *	83	76%	109*
total:	129 (568*)	69% *	260	31%	828/827**

DANISH	*shifted*		*in situ*		total
sentence type	total (estim*)	%	total	%	
declarative	149 (373*)	94% *	23	6%	396*
non-declarative	7 (31*)	19% *	135	81%	153*
total:	156 (390*)	71% *	158	29%	548

*All numbers and percentages for *det inte/ikke* marked with a star are estimated.

**The difference is due to the estimated numbers being presented without decimals.

TABLE 3: IN SITU *vs.* SHIFTED *placement of* det *with sentential and VP antecedents (pron$_{<t>}$ and pron$_{<e,t>}$) in Swedish and Danish: Comparison of declarative and non declarative sentence types.*

In non-declarative sentences as much as 76–80% of the pron$_{<t>}$ and pron$_{<e>}$ appear in situ in both languages. This is an especially interesting result for Danish, where object shift of non-contrasted objects with NP antecedents, pron$_{<e>}$, is more or less obligatory, but also for Swedish, where almost all non-contrasted pron$_{<e>}$ shift, see table 1.

Please note that in the non-declarative sentences, the initial position – the third option for object placement mentioned earlier – is not available, since this position is blocked, either by a question element, as *hvorfor* 'why' in (13a) or by the sentence type having V1 word order as in the V1 question in (13b), the imperative in (13c) and the V1 conditional in (13d).

(13)   a.   Hvorfor ved   du   ikke det? [DA]
            why   know-PRS you NEG it
            'Why don't you know that?'

        b.   Vidste   du   ikke det? [DA]
            know-PRT you NEG it
            'Didn't you know that?'

        c.   Glem   ikke det! [DA]
            forget-IMP NEG it
            'Don't forget that!'

        d.   Og forstår   man ikke det, forstår   man
            and understand-PRS one   NEG it   understand-PRS one
            ingenting.[DA]
            nothing
            'And if you don't understand that, you don't understand anything.'

For declarative sentences there is no dominance for $\text{pron}_{<t>}$ or $\text{pron}_{<e,t>}$ in situ. Table 3 shows that in sentences of this type as much as 69% of the hits in Swedish and 94% in Danish have a shifted $\text{pron}_{<t>}$ or $\text{pron}_{<e,t>}$. Interestingly, the investigation reveals that factivity also plays a role in this sentence type; there is a significant difference in distribution between $\text{pron}_{<t>}$ sentences with +FACTIVE and −FACTIVE matrix verbs, see table 4.

SWEDISH matrix verb	*shifted* total (estim*)	%	*in situ* total	%	total
factive	61 (268*)	91%*	28	9%	296*
non-factive	7 (31*)	28%*	78	72%	109*
	68(299*)		106		405

DANISH matrix verb	*shifted* total (estim*)	%	*in situ* total	%	total
factive	91 (228*)	100%*	0	0%	228*
non-factive	20 (50*)	94%*	3	6%	53*
	111 (278*)		3		281*

*All numbers and percentages for *det inte/ikke* marked with a star are estimated.

TABLE 4: *Distribution of $\text{pron}_{<t>}$ in Swedish and Danish matrix verbs taking* ±FACTIVE *complements, declarative clauses*

In Swedish 91% and in Danish 100% of all $\text{pron}_{<t>}$ that are complements to a +FACTIVE matrix verb appear in the shifted position. The factivity of the matrix verb seems to make these pronouns easy to process and reference with a shifted and hence weak pronoun is possible. It is not surprising that some complements of +FACTIVE matrix verbs appear in situ, since also unstressed $\text{pron}_{<e>}$ appears in this position, see example (6).

The examples in (14) and (15) show that immediate reference with a shifted $\text{pron}_{<t>}$ is possible in sentences with a factive matrix verb:

(14) Han [^{m1}fälldes   för en kriminell handling] men avslöjade
      he   condemn-PST-PASSIVE for a criminal action   but reveal-PST
      [^{m2}det] inte. [SW]
      it   NEG
      'He was condemned for a violation, but he never revealed it.'

In (14) the fact that a person was condemned for a violation is mentioned for the first time in the *m*1 sentence. The factive verb *avslöja*, 'reveal', licenses immediate reference with *det* in a shifted position.

(15) Men [^{m1}i Danmark er   Carlsberg altså nu   på vej til at   overtage
      but in   Denmark be-PRS Carlsberg thus now on way to that overtake
      ca.   90 procent af markedet].   Jeg forstår   [^{m2}det] ikke[...] [DA]
      apx. 90 percent of market-DEF I   understand-PRS it   NEG
      'But in Denmark, Carlsberg is therefore now about to take over about 90
      percent of the market. I don't understand it.'

In (15) the situation of Carlsberg being about to take over the market for beer sales
is mentioned for the first time in the *m*1 sentence and the +FACTIVE matrix verb
forstå, 'understand', licences immediate reference with *det* in a shifted position.

When it comes to the pron$_{<t>}$ that are complements to –FACTIVE matrix verbs,
as much as 75% of these are in situ for Swedish, while it seems that Danish prefer
to place also these in the shifted position. We will return to this difference in
distribution in section 4.3 below.

Even though it is possible for unstressed pronouns to appear in the in situ posi-
tion in Swedish, it is not possible for pronouns with any kind of stress to appear in
the shifted position in any of the languages. If complements to –FACTIVE matrix
verbs are indeed harder to process, how come some of them appear in the shifted
position?

One of the answers is that they have already been promoted to a higher level of
accessibility by previous pronominal mention. When a shifted pron$_{<t>}$ appears in
a sentence with a non-factive matrix verb, there is often an intermediate pronoun
between the sentential antecedent and the shifted pron$_{<t>}$ as in (16) and (17), (cf.
example (12) above).

(16)   a.   Context:
            På frågan om [^{m1} de lugnande medel och andra mediciner som fanns
            på hotellrummet i Rimini där Pantani upptäcktes död i lördags, kan
            ha något med 34-åringens död att göra], svarar Fortini: – Det finns
            inga tecken på [^{m2}det],
            'When asked if [^{m1}the sedatives that were found at the hotel room
            in Rimini, where Pantani was found dead last Saturday, may have
            something to do with the death of the 34 year old] Fortini replies: –
            There is no sign of [^{m2}that],'
       b.   men vi utesluter [^{m3}det] inte heller.
            but we exclude   it   NEG either
            'But we don't consider [^{m3}it] impossible either.'

Example (17) shows a Danish sentence with a non-factive matrix verb, shifted
pron$_{<t>}$ and another pronominal reference in an intermediate clause.

(17)　　[...] såfremt Salvesen er　　klar　over, *[^{m1}hvad det er　　for*
　　　　[...] if　　　Salvesen be-PRS clear over what　　it　be-PRS for
　　　　noget],　　bør　han fortælle alle os andre　　*[^{m2}det]*, for vi　aner
　　　　something must he　tell-PRS all　us other-PL that　　for we know-PRS
　　　　[^{m3}det] ikke.
　　　　it　　　not
　　　　'If Salvesen knows what it is, he needs to tell all of us, because we haven't
　　　　got a clue.'

For Swedish all the 6 hits of pron$_{<t>}$ with a non-factive matrix verb that appear in shifted position have an intermediate pronominal mention. In Danish, not all hits where a complement of a –FACTIVE matrix verb appears in the shifted position have an intermediate pronominal reference that brings the referent IN FOCUS. However, the fact that the pronouns are considered to be "weak" leads to the assumptions that there are other factors that contribute to the accessibility of the referents. These examples will be investigated further.

4.3　Objects in initial position

In table 4 above the proportions of complements of -FACTIVE matrix verbs in a shifted position seems to be higher in Danish than in Swedish. On the other hand, the proportion of complements of +FACTIVE vs. –FACTIVE verbs in this position is very similar in Swedish and in Danish. The seven hits for –FACTIVE in Swedish constitutes 10% of the total shifted hits, and the 20 hits for –FACTIVE in Danish constitutes 18% of the total shifted hits. The question is then where the complements of -FACTIVE matrix verbs – which are harder to process – appear in Danish.

A small pilot study shows that Danish seems to choose this third option for object placement for these kinds of complements, placing *det* complements of –FACTIVE matrix verbs in the initial position, see table 5.

verb	*1st*		*shifted*		*in situ*		total
tycka (SW)	20	67%	0	0	10	33%	30
synes (DA)	22	85%	4	15%	0	0	26

TABLE 5: *Distribution of* det*, including 1st position, verbs* tycka/synes *with case marked pronominal subjects*

In this pilot study, searches were performed for strings where the verbs *tycka*, [SW], and *synes*, [DA], 'think, consider' were combined with a case marked pronominal subject, the complement *det* and the negations *inte/ikke* in declarative clauses. In Swedish, the object pronouns appear in the initial or in the in situ position, while in Danish, the object pronouns appear in the initial or in the shifted position. This may indicate that in declarative sentence types, where the initial position of the clause is available for these elements, Danish seems to prefer this position for *det* when

it has the cognitive status ACTIVATED, but not IN FOCUS. The numbers in table 5 might indicate that Swedish prefers this position for *det* when it is IN FOCUS. In non-declarative sentence types (–FACTIVE), where the initial position is blocked, see table 3 above, also Danish prefers pron$_{<t>}$ and pron$_{<e,t>}$ in situ.

As far as we have seen there are clear indications that pronominal object shift is related to cognitive status. The prosodic features of pronominal objects, but also the syntactic position of the shifted object, must be considered as information packaging (cf. Vallduví & Engdahl 1996) for referents that have the cognitive status IN FOCUS in Swedish and in Danish. There is therefore reason to believe that pronominal objects that are IN FOCUS shift obligatory in Danish and optionally in Swedish.

5   Consequences for the LFG architechture

Cognitive status affects information packaging, and this notion therefore belongs in the i-structure. O'Connor (2006) shows that an ACTVN (*activation*) feature with a $\pm$ value within the i-structure (O'Connor's *d-structure*) is sufficient to cover the facts about prosody in Serbo-Croatian in his investigation. O'Connors notion of *activation accent* (2006:33) also fits very well with the intuitions that pron$_{<t>}$ and pron$_{<e,t>}$ in situ are normally not unstressed, and if the ACTVN feature would only relate to the mapping between i-structure and prosodic structure, a $\pm$ value might be sufficient also for the analysis of object shift.

But, as O'Connor mentions in his overview of possible further research (2006: 192), this feature is also of relevance for the mapping between i-structure and other structures in the LFG architecture, as for instance c-structure. The shifted position seems to be reserved for object referents that are IN FOCUS and placing a pronominal object in this position signals the referent's cognitive status. This indicates that the ACTVN feature must map also to c-structure. Furthermore, the choice of referring expressions (different kinds of pronouns, definite NPs, indefinite NPs) depends on the accessibility of a referent in the context, so there seems to be need for a further fine grained scale of ACTVN values building on the givenness hierarchy. How this scale should be designed must be subject to further investigation, but for the purposes of this paper, the scale in Figure 4 is sufficient.

in focus	activated	familiar/identifiable/referential/type identifiable
0	+1	+2...

FIGURE 4: *ACTVN values related to the Givenness hierarchy of Gundel, Hedberg & Zacharski (1993).*

In example (18) repeated from (8a), *det* refers to the statement that Agnes is cute. The pronoun is a complement of a non factive matrix verb and does hence not reach the highest cognitive status at the first pronominal mention. The option to

place the object in the 1st position is not available in the following V1 question and *det* appears in situ both in Swedish and in Danish.

(18)   [Agnes är   söt.]$_i$ Tycker   du inte *det$_i$*? [SW]
        [Agnes er   smuk.] Synes   du ikke *det$_i$*? [DA]
        Agnes be-PRS cute   think-PST you NEG that
        'Agnes is cute. Don't you think so?'

An i-structure of this sentence looks like Figure 5, where the value of the ACTVN feature is +1 for ACTIVATED, the second highest level on Gundel's et al. (1993) scale.[7] The negation and the verb *tycker/synes* receive a higher value, since they represent new information and the pronoun referring to the addressee, *du*, receive the value +1 (cf. the suggestion in Gundel et al. 1993:278 that the speech-participants, being present in the extralinguistic context, are ACTIVATED; cf. also Erteschik-Shir 2007:16f, *stage topics*).
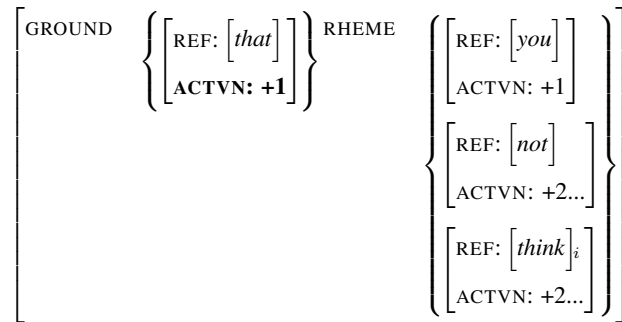
$$
\begin{bmatrix}
\text{GROUND} & \left\{ \begin{bmatrix} \text{REF:} & [that] \\ \textbf{ACTVN: +1} \end{bmatrix} \right\} & \text{RHEME} & \left\{ \begin{array}{l} \begin{bmatrix} \text{REF:} & [you] \\ \text{ACTVN: +1} \end{bmatrix} \\ \begin{bmatrix} \text{REF:} & [not] \\ \text{ACTVN: +2...} \end{bmatrix} \\ \begin{bmatrix} \text{REF:} & [think]_i \\ \text{ACTVN: +2...} \end{bmatrix} \end{array} \right\}
\end{bmatrix}
$$

FIGURE 5: *I-structure, example (18):* Tycker/Synes du inte/ikke det?

In example (19), the object pronoun *det* – here a complement to a factive verb *förstå/forstå* 'understand' – is more accessible than the object pronun in example (18) and is licensed in a shifted position.

(19)   Jag kan   se [hur viktigt   det är]$_i$.   Andra förstår   *det$_i$*
        Jeg kan   se, [hvor vigtigt   det er]$_i$.   Andre forstår   *det$_i$*
        I   can-PRS see how important it   be-PRS others understand-PRS it
        inte. [SW]
        ikke. [DA]
        NEG
        'I can see how important this is. Others don't understand it.'

Figure 6 shows an i-structure of the sentence in (19). The value of the ACTVN feature is here 0 for IN FOCUS, the highest level on Gundels et al. (1993) scale in Figure 2 above.

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[7]The i-structures are simplified and contain only the relevant features.

$$\begin{bmatrix} \text{GROUND} & \left\{ \begin{bmatrix} \text{REF:} & [\textit{it}] \\ \textbf{ACTVN: 0} \end{bmatrix} \right\} & ^{\text{RHEME}} & \left\{ \begin{bmatrix} \text{REF:} & [\textit{others}] \\ \text{ACTVN: +2...} \end{bmatrix} \\ \begin{bmatrix} \text{REF:} & [\textit{not}] \\ \text{ACTVN: +2...} \end{bmatrix} \\ \begin{bmatrix} \text{REF:} & [\textit{understand}]_i \\ \text{ACTVN: +2...} \end{bmatrix} \right\} \end{bmatrix}$$
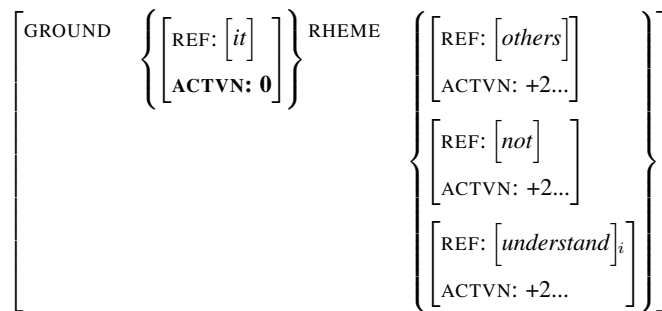
FIGURE 6: *I-structure, example (19):* Andra/Andre förstår/forstår det inte/ikke.

The values of the activation feature may be related to different types of information packaging in different languages. In English, they may be related to the choice of referential expressions (i.e. *it* vs. *that*) and in Swedish and Danish mapped to c-structure and/or p-structure.

6 Summary and further research

In this paper I have discussed the fact that pronominal objects with clausal or VP antecedents, $\text{pron}_{<t>}$ and $\text{pron}_{<e,t>}$, shift more seldom than referents with NP antecedents, $\text{pron}_{<e>}$, in Swedish and Danish. This seems to be due to a difference in cognitive status, where $\text{pron}_{<t>}/\text{pron}_{<e,t>}$ in +FACTIVE environments and $\text{pron}_{<e>}$ are easier to process, which licenses pronominal reference in a shifted position as well as an unstressed pronounciation. Pronominal objects in −FACTIVE environments are harder to process and immediate reference in a shifted position seems not to be possible. For the LFG architecture the relation between cognitive status and information packaging gives rise to the need for a more fine grained value of the ACTVN feature introduced by O'Connor (2006).

It is also important not to see object shift as an isolated phenomenon, a binary choice between two positions, shifted or in situ, but as a dynamic part of the greater notion of object placement – or even of the overall notion of word order and to which extent there is "free word order" in Scandinavian languages.

This investigation has been performed within a one year post doc project funded by NORMS (Nordic Center of Excellence in Microcomparative Syntax). Further research includes a similar study of Norwegian, an investigation of $\text{pron}_{<e,t>}$ in relation to cognitive status and other factors (cf. Lødrup (1994)), object shift in copular clauses (cf. Mikkelsen under revision) and object shift in relation to type anaphora (cf. Borthen 2004). Also the possibility of placing pronominal objects in the initial position will be part of the further investigations.

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