

# Antecedent-based approach to binding in Icelandic and Faroese<sup>1</sup>

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## Abstract

This paper examines the standard approach to long-distance reflexives within the Lexical-Functional Grammar framework. This approach defines the binding relation between a reflexive and its non-local antecedent by prescribing the type of syntactic elements which must and must not occur along the path from the reflexive to its antecedent. However, evidence from the Insular Scandinavian languages suggests that the binding relation should be expressed as positive and negative constraints on the path from the antecedent to the reflexive. In other words, I suggest that long-distance reflexives in Icelandic and Faroese are governed by outside-in functional uncertainty, not inside-out functional uncertainty, as is standardly assumed.

## 1. The problem

Following Dalrymple (1993) and Bresnan (2001), anaphoric binding, in particular long-distance reflexivisation (LDR), as illustrated in (1), is viewed in Lexical-Functional Grammar as a kind of **inside-out functional uncertainty**.

- (1) a. **Jón** segir [að María elski **sig**]. ICELANDIC  
b. **Jógvan** sigur, at [Maria elskar **seg**]. FAROESE  
*John says that Maria loves self*

Borrowing the explanation from Kaplan and Maxwell (1988: 297), **Functional Uncertainty** ('FU') is 'the analysis of unbounded dependencies'. For example, the equation identifying the object of *telephoned* with the topicalised *Mary* in (2a) is given in (2b).

- (2) a. Mary John telephoned yesterday  
b.  $\uparrow$  TOPIC =  $\uparrow$  OBJ

In a similar fashion, the path from the canonical, or expected position of the object *Mary* in (3a) to its actual, topicalised, location, must pass through a COMP(lement clause boundary), following the equation in (3b).

- (3) a. Mary John claimed [<sub>COMP</sub> that Bill telephoned yesterday]  
b.  $\uparrow$  TOPIC =  $\uparrow$  COMP (OBJ)

Further, given that the canonical object position may be embedded within a potentially infinite number of complements (4a), the appropriate equation to cover all of these possibilities is given in (5) (where the \* represents 'none or

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more’). The label ‘functional uncertainty’ represents the fact that the actual path from the topicalised object to its canonical position may be not known for certain, but that the path itself is still definable.

- (4) a. Mary John claimed [<sub>COMP</sub> that Bill said that .... [<sub>COMP</sub> that Henry telephoned yesterday]]  
 b.  $\uparrow$  TOPIC =  $\uparrow$  COMP (COMP ...) OBJ
- (5)  $\uparrow$  TOPIC =  $\uparrow$  COMP\* OBJ

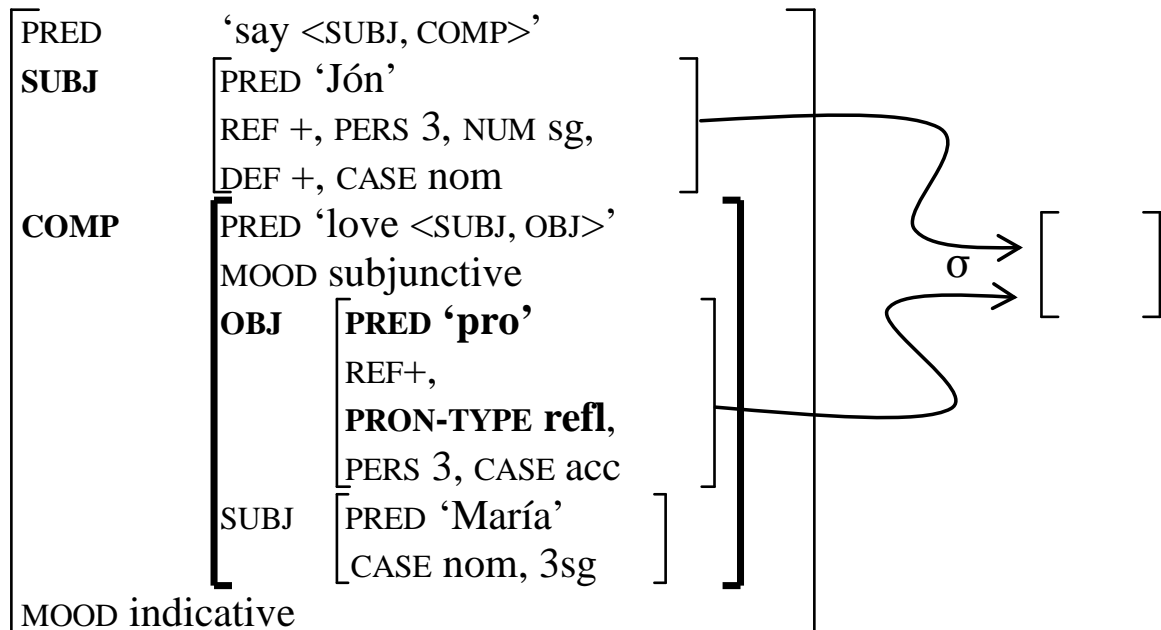
The label ‘inside-out functional uncertainty’ essentially means that the binding rule applies to (or rather ‘from’) the reflexive, which has to go searching (from an embedded ‘inside’ position towards the outer antecedent, hence ‘inside-out’) for its antecedent. It is a kind of ‘functional uncertainty’, because we do not know beforehand exactly where the antecedent is.

The standard functional uncertainty rule for Icelandic LDR look something like (6a), which says that a reflexive has a subject antecedent which is found by looking outwards in the f-structure through a series of COMPLEMENT clauses. Notice that this is similar to the standard Binding Conditions of GB (6b), which also specifies the domain in which the reflexive must find its antecedent, although the definition of the domain is phrased differently.

- (6) a.  $((\text{COMP}^+ \text{GF } \uparrow) \text{SUBJ})_{\sigma} = \uparrow_{\sigma}$   
 b. A [reflexive] must be bound in its minimal governing category [ie within an indicative mood for Icelandic?]

In Lexical-Functional Grammar, the binding rules apply to the functional-structure, not to the constituent-structure (ie phrase structure tree). Thus, the rule in (6a) applies to the Icelandic LDR sentence in (1a) as shown in (7). The reflexive has the object function in the embedded complement clause. The path to its antecedent may pass through COMPLEMENTS, as indicated by the heavy lines, to be linked with a SUBJECT.

(7) Simplified f-structure for (1a) **Jón** segir [að María elski **sig**].



In this paper, I will present evidence that more information about the antecedent is needed in order to establish coreference than just its grammatical function. In particular, data from Insular Scandinavian (ie Icelandic and Faroese) suggests that LDR should be viewed as a kind of antecedent-based, **outside-in** functional uncertainty, rather than a reflexive-based **inside-out** functional uncertainty, as in the standard view. Bresnan (2001: 249) suggest that LDR must be licenced simultaneously by f-structure and the ‘extended indirect discourse’, something which I agree with. However, I still believe that the f-structure reference must be outside-in, rather than inside-out.

## 2. The Icelandic data

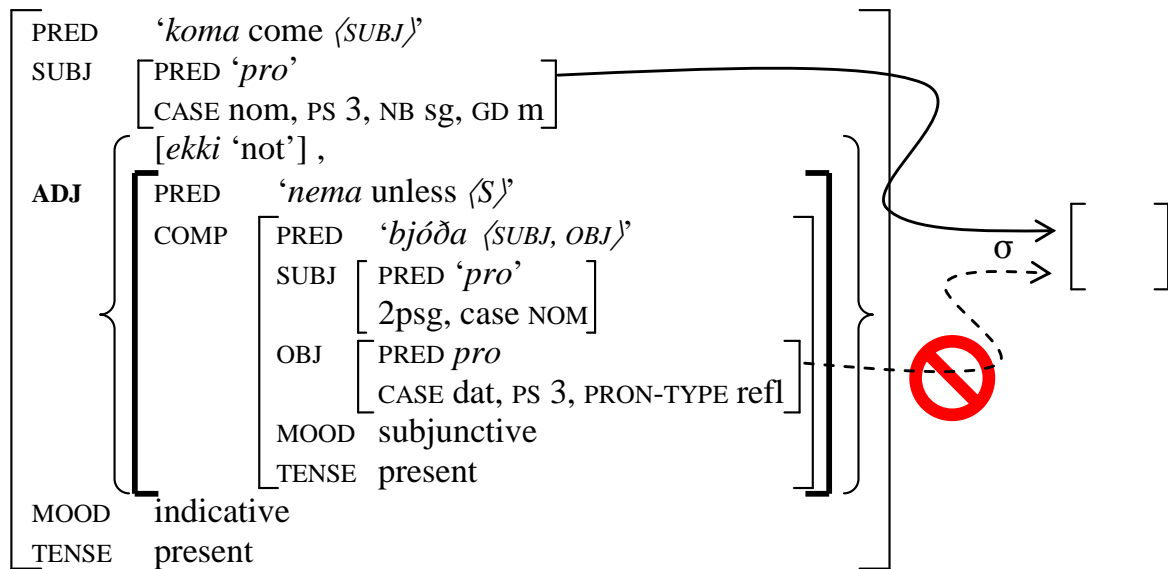
There is a contrast between the minimal pair of Icelandic sentences in (8), in that the reflexive is not permitted (a), only a pronoun is (b).

- (8) a. \* Hann kemur ekki nema þú bjóðir sér.  
 b. Hann kemur ekki nema þú bjóðir honum.  
*he comes not unless you invite self/him*

Given the rule (regular expression) for LDR in Icelandic (9), a simplified f-structure for (8a) is given in (10).

(9)  $((\text{COMP}^* \text{GF} \uparrow) \text{SUBJ})_{\sigma} = \uparrow_{\sigma}$

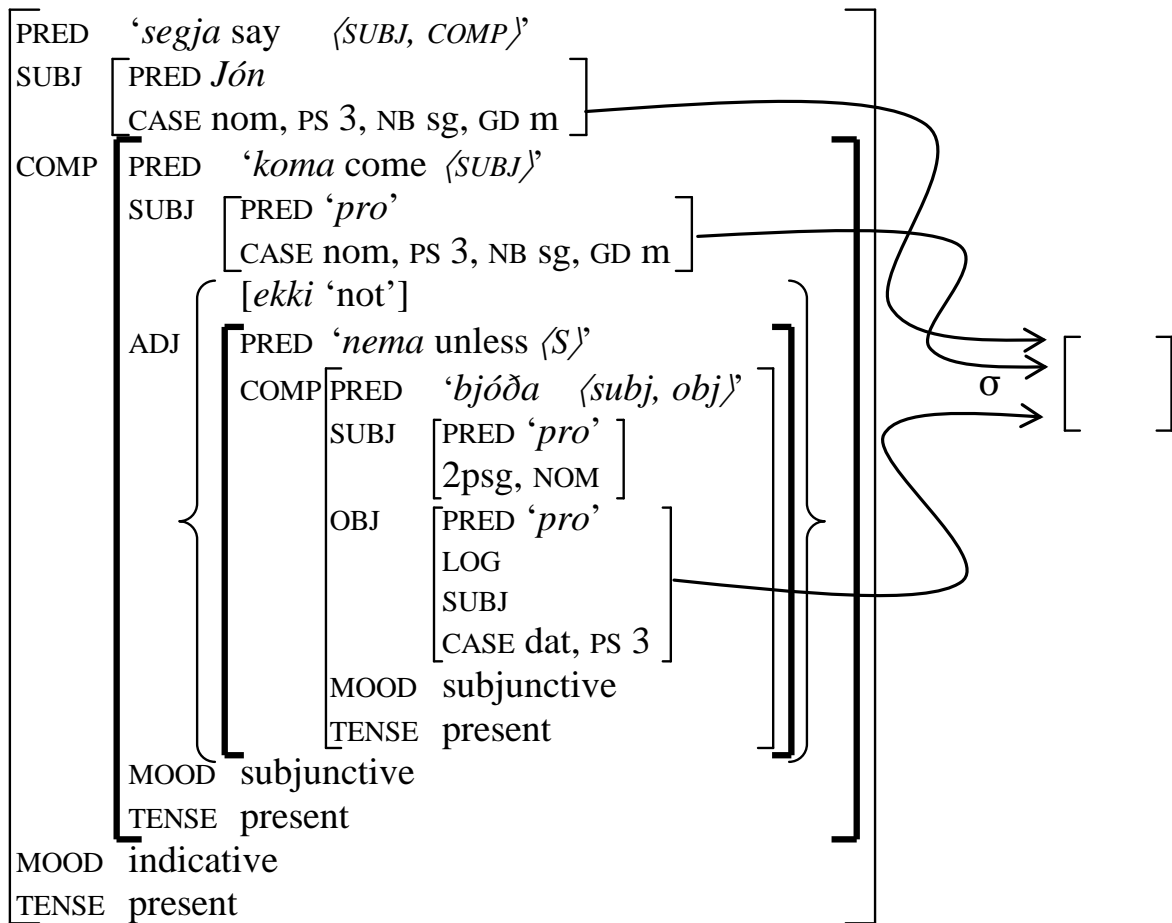
(10) f-structure for (8a) *Hann kemur ekki nema þú bjóðir sér.*



Clearly the f-structure in (8) violates the binding rule in (9), as the anaphor is within an ADJunct, which the functional uncertainty equation does not allow it to bind out of. This sentence is therefore ungrammatical.

The next example illustrates that embedding a sentence like (8) under a ‘perspectivising predicate’ such as *segja* ‘say’ or *halda* ‘believe/think’ renders an LDR reading possible.

- (11) Jón segir að hann komi ekki nema þú bjóðir sér.  
*John says that he comes.S not unless you invite.S self*
- (12) f-structure for (11) *Jón segir að hann kemur ekki nema þú bjóðir sér.*



The outermost predicate in this f-structure is *segja* ‘say’, which takes a nominative subject, and a COMP where the predicate must be in the subjunctive mood. The f-structure of this COMP is identical to that in (8) above, except that its main predicate is in the subjunctive mood (as required by the verb *segja* ‘say’). It is unclear whether the reflexive needs to ‘stop off’ at the each SUBJ on its path, given that the functional uncertainty equation does not rule this out, or whether it needs to link directly to its intended antecedent.

The binding rule in (9) should also disallow binding in (11)/(12). However, following Bresnan (2001), the lexical features of *sig* here allow binding, due to the ‘logophoric’ nature of the construction. Thus, *sig* has the lexical features as given in (13).

- (13) Lexical features of *sig* [+LOG, +SBJ]

The [+LOG] (‘logophoric’) feature allows the LDR binding to occur in (11). This implies that the antecedent must also be labelled [+LOG] (or maybe [+LOG-ANTE]), although I cannot find reference to such a label in any of the literature.

*What is ‘logophoricity’?*

Logophoricity was first identified and defined by Hagège (1974), to describe a context in which a third person’s thoughts, feelings or emotions are expressed, and presented as though from their perspective. Logophoric pronouns are found in several African (Niger-Congo) languages, including Ewe (Clements, 1975) and Gokana (Hyman and Comrie, 1981). (14a) and (14b) contrast the logophoric pronoun in Ewe with a normal pronoun. The logophoric pronoun must be coreferential with the perspective-holder (14a), while the normal pronoun must be disjoint with this referent (14b).

- (14) a. Kofi be yè-dzo EWE  
*K. say LOG-leave*  
 ‘Kofi said that he (Kofi) left.’
- b. Kofi be e-dzo  
*K. say PRO-leave*  
 ‘Kofi said that he/she (not Kofi) left.’

Logophoric pronouns typically occur embedded under a verb meaning ‘say’. Stirling (1993) suggested a hierarchy of ‘logocentric predicates’, and it has been shown that these predicates are typically the ones which also occur with LDRs, with verbs to the left in the hierarchy clearly better/more frequent than those towards the right. (Note that this hierarchy does not appear to apply to Norwegian LDR, Strahan, 2003.)

- (15) Communication > thought > psychological state > perception (p259)

LDRs do occur with non-logocentric predicates, and Reuland and Sigurjónsdóttir (1997) suggested that this is due to a difference between logophoric/discourse LDR, and non-logophoric/syntactic LDR. The discussion here will be restricted to the logophoric/discourse type, aka ‘true LDR’, rather than ‘middle-distance’ LDR over a non-finite clause boundary.

Sigurðsson (1986) specifically links point-of-view with Icelandic LDRs, illustrating that a proposition that is presented from a third person’s POV and refers to that referent, will be reflexive, while the use of a pronoun signals that the referent is not the perspective-holder. Notably, the verbs which are used most often in presenting a third person’s perspective are those which are ranked more highly in Stirling’s logocentric hierarchy.

- (16) a. Jón segir að María elski sig. (= from Jón's POV)  
 b. Jón segir að María elski hann. (= from someone else's, not Jón's, POV)  
*John says that Maria loves self/him*
- (17) a. Jón heldur að María elski sig. (= from Jón's POV)  
 b. Jón heldur að María elski hann. (= from someone else's, not Jón's, POV)  
*John thinks that Maria loves self/him*

### *Subjunctive mood ≠ logocentricity in Icelandic*

While the difference between (18a) and (b) could be due to the presence of the subjunctive mood in (a), and its absence in (b), Sigurðsson (1986) showed that this cannot be the case. Firstly, some speakers accept (18b)/(19a). Secondly, those who accept (19a) do not accept (19b), where the higher subject *Jón* cannot be a perspective-holder.

- (18) a. Jón segir að María elski sig. (= from Jón's POV)  
 b. \* Jón veit að María elskar sig. (= ?not from Jón's POV)  
*John says/knows that Maria love-S/I self*
- (19) a. Jón veit að María elskar sig. (= from Jón's POV)  
 b. \* Jón veit ekki að María elskar sig. (= not from Jón's POV)  
*John knows (not) that Maria loves self*

In addition, Thráinsson (1976) showed that the match between LDR and the subjunctive mood in Icelandic is not perfect. As well as the examples in (19), where LDR is permitted without the subjunctive mood, there are also examples like (8), which have the subjunctive mood in the embedded clause, but do not permit LDR.

- (8) a. \* Hann kemur ekki nema þú bjóðir sér.  
*he comes not unless you invite-S self*

Thus, the conclusion that Thráinsson and Sigurðsson have reached is that the subjunctive mood does not 'license' LDR in Icelandic, although the two often co-occur. This is a clear case of 'correlation ≠ causation'. I will suggest later that the use of the subjunctive mood in Icelandic suggests a subject (and not speaker) perspective, which may combine with other factors to create an LDR context. As Thráinsson and Sigurðsson have shown, alone it is neither sufficient nor necessary to licence Icelandic LDR.

### **3. Intriguing questions about the Icelandic examples**

My main question is, given that the LDR rule is defined as **inside-out** functional uncertainty, what on earth changes, from the point-of-view of the reflexive, between (8) and (11)? Both are within ADJ clauses, both are OBJs of verbs that

are in the subjunctive mood. How does the reflexive in (11) know that it can keep looking further than the next clause, while the reflexive in (8) must stop? How does the reflexive in (11) know in the first place that it can break out of its ADJ f-structure to find an antecedent? We know it can be bound to a perspective-holder, but how does the reflexive know that there is a perspective-holder to be bound to? What allows the reflexive in (11) to get the [+LOG] feature, but not the reflexive in (8), assuming that it is the [LOG] feature that allows the perspective-binding?

(8) a. \* Hann kemur ekki nema þú bjóðir sér.  
*he comes not unless you invite-S self*

(11) Jón segir að hann komi ekki nema þú bjóðir sér.  
*he says that he comes-S not unless you invite-S self*

There are at least two approaches to a solution to this problem.

Firstly, we could say that *segja* licences a subjunctive chain, linking the reflexive's f-structure to the outside f-structure, which allows the reflexive to 'bypass' the ADJ, or makes the ADJ 'more COMP-like', for the purposes of the binding rule. Alone, this rule is possible, but seems a little stipulative. Alternatively, we could assume that *segja* and its subjunctive mood COOCCURS with the subject being labelled as [PERSPECTIVE-HOLDER], ([LOG-ANTE], [LDR-ANTE]). Then, as long as this perspective chain continues, the influence of the [PERSPECTIVE-HOLDER] continues.

The first approach has a further problem, namely that it does not explain why *hann* is still not a possible antecedent for *sér* in (11). The alternative approach does not have this problem, since *hann* is never recognised as a perspective-holder, and therefore is never recognised as a possible antecedent for an LDR.

Therefore, I suggest that the realisation of the anaphor as either the reflexive *sér* or the pronoun *honum* here, relies crucially on the prominence (in some sense) of the antecedent, including semantic, discourse and pragmatic prominence, as well as syntactic prominence. In support of this multi-faceted approach is the algorithm created by Asher and Wada (1988), which could correctly predict whether a discourse referent was going to be referred to with a pronoun or a full NP. This algorithm involved evaluating discourse referents for their prominence, using filters that took into account recency of mention, repetition of a discourse referent, parallel syntactic structures, surface grammatical functions and aspectual shifts. Their success in accounting for the use of a pronouns using an antecedent-based rule bodes well for my antecedent-based account of LDR.



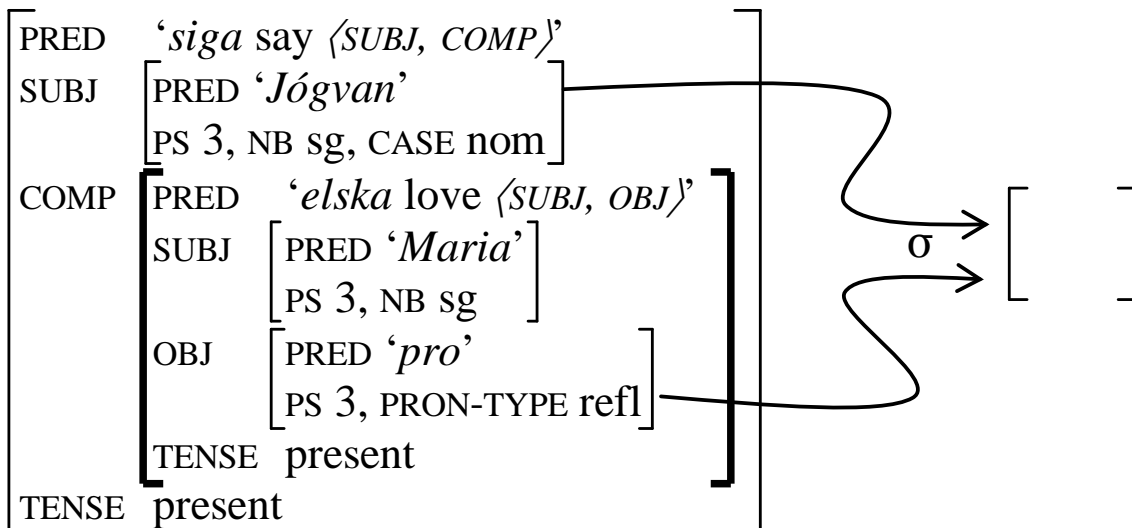
**4. Faroese**

The data I am going to start with for Faroese is given in (20). The Icelandic equivalents are also given, for comparison. (20a, b) have only third persons, while (20c, d) have a second person pronoun as the subject of the embedded clause (ie the clause containing the reflexive).

- (20) a. **Jón** segir [að María elski **sig**]. ICELANDIC  
 b. **Jógvan** sigur, at [Maria elskar **seg**]. FAROESE  
*John says that Maria loves self*  
 c. **Jón** segir [að þú elskir **sig**]. ICELANDIC  
 d. \***Jógvan** sigur, at [tú elskar **seg**]. FAROESE  
*John says that you love self*

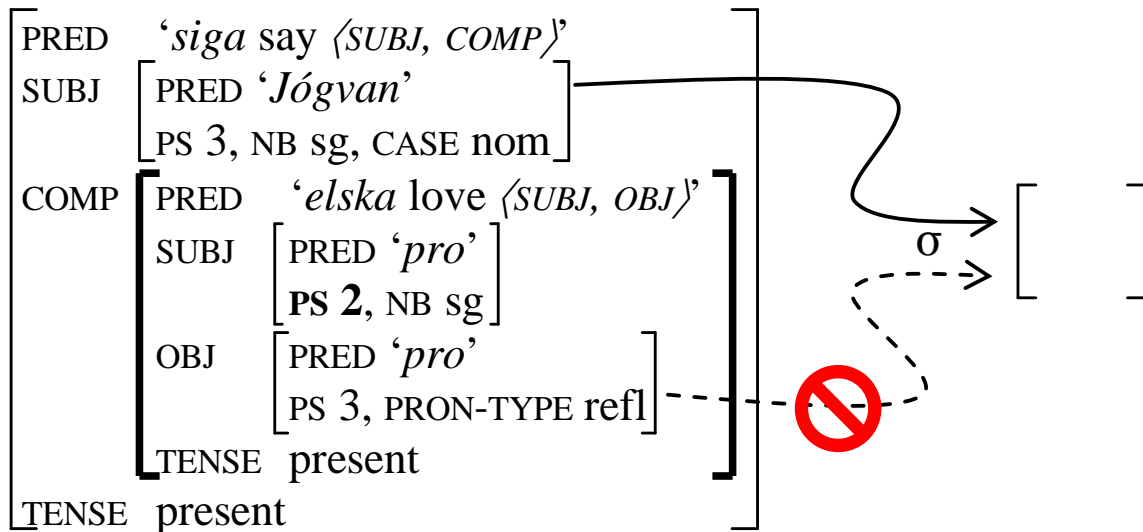
(21) gives the f-structure of (20b). Notice that the reflexive can bind out of the COMP to the SUBJ, like in Icelandic.

- (21) f-structure for **Jógvan** sigur, at [Maria elskar **seg**] ‘John says that Maria loves self’



In (22) is the f-structure for the version of this sentence with a second person pronoun.

- (22) f-structure for *Jógvan sigur, at [tú elskar seg]* ‘John says that you love self’



The f-structure in (22) is identical to that in (21), except that the subject of the embedded COMP clause is second and not third person. This causes the sentence to be unacceptable.

Native speakers, when asked why (22) is bad, invariably say there is a problem with the second person pronoun, it appears to make the sentence direct speech. Most people laugh and shake their heads and apologise for the badness of (22), especially when they are reminded that they said that (21) was fine! Intriguingly very few Faroese speakers change their mind about the ungrammaticality of (22) when its similarity to (21) is pointed out to them – the presence of non-third person has a strong confounding effect on the acceptability of LDR in Faroese, for most (but not all) speakers.

Notice that this restriction against the presence of non-third person pronouns holds even (or especially) out of ADJunct clauses, as well as out of COMPs, as shown by the examples in (23) and (24). Notice also that the equivalent Icelandic sentences are very (23a), (24), or at least rather (23b), ungrammatical.

- (23) a. **Zakaris** lesur ikki bókina, [tí að hon keðir **seg**]. FAROESE  
 b. ?\* **Jón** les ekki bókina, [því að hún ergir **sig**]. ICELANDIC  
*Zakaris reads not the.book, because that she (ie 'the book') bores/irritates self*
- c. **Hann** brúkar tað, [sum passar **sær**]. FAROESE (60%)  
 d. \***Hann** notar það, [sem passar **sér**]. ICELANDIC (25%)  
*He uses that which suits himself*
- (24) a. **Magnus** dámar Beintu, [tí at hon hjálpir **sær** við heima arbeiðinum].  
 b. \***Magnus** dámar meg, [tí at eg hjálpi **sær** við heima arbeiðinum].  
*Magnus likes Beinta/me because that she/I help self with house work*
- c. **Olaf** ivast í, [um Maria vil hjálpa **sær** við heima arbeiðið].  
 d. \***Olaf** ivast í, [um tú vil hjálpa **sær** við heima arbeiðið].  
*Olaf doubts (in) if Maria/you want to help self with house work*

Faroese LDR appears to have a very straight-forward binding restriction, namely that the presence of a non-third person pronoun causes LDR to be ungrammatical. This can be very easily expressed in an OFF-PATH CONSTRAINT (Dalrymple, 1993), restricting the path's journey through any f-structure that itself contains a first or second person. There does not appear to be a difference between COMP or ADJ paths. (This is a simplification of the data, but we will generalise for the moment.)

Furthermore, at least some Faroese speakers allow an LDR to have a non-subject antecedent, even with a first-person pronoun present. The percentages are those who find the sentence 'completely natural', based on 10 speaker judgements. One speaker found the sentence not completely natural, but also 'not completely unacceptable', hence the extra 3% in (25b).

- (25) a. Eg vísti Mariu bókina, sum var skrivað um seg, sum eg hevði í kjallaranum. [30%] FAROESE  
*I showed Maria the.book which was written about self, which I had in the.cellar*
- b. Eg vísti Mariu bókina, sum var skrivað um sín abba, sum eg hevði í stovuni. [43%] FAROESE  
*I showed Maria the.book which was written about self's grandfather, which I had in the.living.room*

For speakers who accepted the reflexives in (25), they also seemed to prefer them to a pronoun.

We could postulate the regular expression governing LDR in Faroese as in (26).

$$(26) \quad \begin{aligned} (\text{GF}^+ \uparrow)_\sigma &= \uparrow_\sigma \\ \neg(\rightarrow\text{PS} = 1 \vee 2) \end{aligned}$$

This rule says that the antecedent is not restricted to any grammatical function (GF), nor to following any path through the f-structure to the antecedent. It does have an off-path constraint, restricting the path's journey through any f-structure that itself contains an first or second person.

However, I am not satisfied with this rule for three reasons.

Firstly, not all speakers have the off-path constraint requirement.

Secondly, many speakers do in fact have a preference for a path through COMPs and not ADJs between the reflexive and its antecedent, and for those speakers who have a person restriction associated with LDR (for whom the off-path constraint applies), it tends to be stronger out of adjunct clauses than out of complement clauses (Strahan, 2009).

Thirdly, this off-path constraint is stipulative, although the motivation is straight-forward. Intuitively, if the antecedent of an LDR is a perspective-holder, we can appeal to the fact that first and second person pronouns outrank third person pronouns in perspective-holding-ability, meaning that a first or second person will always be the perspective-holder, ruling out (third person) LDR. This intuition already directly motivates the identification of the antecedent for the LDR. Why double up? If we assume that speakers and hearers are always aware of which discourse referent is the most prominent, or is the perspective-holder, then the off-path constraint is redundant, since it falls out of the need to identify the highest-ranked perspective-holder anyway.

### 5. Outside-in or Inside-out functional uncertainty?

I have offered some arguments for the standard inside-out view of anaphoric binding, but I have also pointed out a couple of problems, in particular with respect to Icelandic perspectivising LDR. Another problem is more theoretical. As pointed out by an anonymous reviewer, '[outside-in functional uncertainty] would mean that each possible perspective-holder would launch a search for possible LDRs, which does not seem plausible'.

I agree with this sentiment, however, the inside-out functional uncertainty suffers from the same problem, namely, how does the reflexive KNOW that there is an available LOG-ANTE to bind to, if that LOG-ANTE hasn't already identified itself?

It could be argued that all reflexives must launch a search for an antecedent anyway, thus it is more economical to leave it to the reflexive. However, the question remains as to how far the reflexive needs to search, and this can only be answered by knowing if an antecedent actually exists, and then where that antecedent is. An antecedent-based account of binding also deals neatly with 'discourse' binding, where the antecedent is not even in the same sentence:

- (27) *María var alltaf svo andstyggileg. Þegar Ólafur<sub>j</sub> kæmi segði hún sér<sub>i/\*j</sub> áreiðanlega að fara.*  
*Mary was always so nasty. When Olaf would come, she would certainly tell himself/herself [the person whose thoughts are being presented – not Olaf] to leave.*

Rather than the apparent chicken-and-egg problem which we seem to have arrived at, what (27) actually shows, is that the antecedent must in fact carry a larger load than the reflexive, in the binding relationship.

If we acknowledge the role of the subjunctive mood at least sometimes as that of grammaticalised perspective, then it could be said that a reflexive can search up a chain of perspectivising subjunctive mood(s) until it finds a perspective-holder. But this also means that we have to acknowledge that the perspectivising subjunctive chain exists solely because there is a perspective-holder at the top of it.

Notice that this means we need to claim that the subjunctive mood in (11) is different to the subjunctive mood in (8), since in (8) the subjunctive mood is required by the conjunction *nema* ‘unless’, while in (11) it could be argued to be part of the perspective-chain, and thus required by *segja* ‘say’.

In addition, given that some Icelandic speakers allow binding out of an indicative COMP clause<sup>2</sup>, the reflexive cannot necessarily rely on overt grammatical mood to climb up. In such cases, the ONLY overt indication that there is a perspective-chain at all, is the perspective-holder itself. The standard LFG binding rule is given in (28), which uses the functions of COMP and SUBJ to identify the antecedent of an LDR. My suggested rule uses outside-in functional uncertainty, and will look something like (29). While ‘perspective-holder’ and ‘perspective’ are not recognised f-structures objects, I think it is clear that something like these must be referred to in any successful binding rule. Non-syntactic functions are already permitted in f-structures, including TOPIC and FOCUS, perhaps PERSPECTIVE-HOLDER is also required?

$$(28) \quad ((\text{COMP}^* \text{GF} \uparrow) \text{SUBJ})_{\sigma} = \uparrow_{\sigma} \quad \text{iofu anaphoric binding}$$

$$(29) \quad (\uparrow \text{PERSPECTIVE-HOLDER})_{\sigma} = (\uparrow \text{PERSPECTIVE}^* \text{GF})_{\sigma} \text{ oifu anaphoric binding}$$

The availability of only non-nominative reflexive forms excludes the GF of the LDR in (29) from itself being a subject, although it may be within a subject, or be a non-nominative subject. The PERSPECTIVE function is completely non-standard and vague, but is meant to capture the intuition that there must be some kind of perspective-chain created from the LDR antecedent. This perspective chain involves reference to the ‘extended indirect discourse’ (Bresnan, 2001)

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<sup>2</sup> In the overview project, this was about 40% of speakers, the same percentage as allowed the perspectivising binding, so I think it is reasonable to compare the two.

and the semantics of the matrix verb (Stirling, 1993: 267), but could still be a syntactic operation.

## 6. Experimental psycholinguistic evidence

While no studies seem to have directly addressed the issue of the prominence of discourse referents with respect to the use of reflexives, many have addressed this issue with respect to the use of pronouns, which I think can be extrapolated to include reflexives. Here, the psycholinguistic evidence on the whole seems to indicate that hearers keep track of ALL prominent entities, withholding judgement on which is the single most prominent entity, until they receive input which tips the scales in favour of one or the other discourse referent. Then, when something DOES tip the scales, the text must continue in with this in order to remain semantically coherent.

Psycholinguistic evidence for an outside-in approach to binding exists, although as no study that I have been able to find has addressed this question directly, we must sort through indirect evidence.

The findings indicate that the parser incrementally constructs anaphoric relations among NPs in advance of the verb, and more importantly that it does so selectively, only in configurations where anaphora is judged to be more acceptable in off-line tasks. These results imply that, at least in the domain of anaphora, head-final word order does not undermine a speaker's ability to deploy his grammatical knowledge immediately in real-time language use.

(Aoshima et al., 2009: 129)

Shillcock 1982 (cited in Nicol and Swinney, 2003: 89) examined the level of activation of NPs at various points in a sentence. He found that the 'activation level' of an NP changed as new NPs were mentioned, but not necessarily immediately.

Anderson (no reference given, cited in Ariel, 1990: 25) investigated the weight of noun phrases with respect to whether they were chosen as a discourse topic. Subjects read the short narrative in (30).

- (30)       The Bus Journey  
           Mrs Grey was travelling by bus.  
           A (teenage) conductor collected the fares.  
           The bus jolted and rattled as it went.  
           After two hours joints still ached.

Subjects who read the version with the *teenage conductor* continued this story more often with *he*, than subjects who read the version with just *conductor*. In other words, working out what the story is 'about', is a complicated affair.

Siewierska's hierarchy of 'high cognitive accessibility' (Siewierska, 2004: 46), which includes reference to grammatical functions, animacy, repetition, competition and topicality, also includes the person hierarchy in (31).

(31) Speaker > addressee > non-participant (3<sup>rd</sup> person)

I believe that this particular hierarchy is highly relevant to Faroese LDR. When a first or second person pronoun is introduced, the preceding discourse referents are simply no longer the most salient. The person constraint is clearly very highly ranked in Faroese, for most speakers.

## 7. Summary and conclusions

**Is LDR in Insular Scandinavian a kind of ‘functional uncertainty’?** The vague equation suggested in (29) which uses a function of PERSPECTIVE-HOLDER in the f-structure, does not determine a specific path, thus this is a kind of functional uncertainty.

**Is LDR binding in Faroese and Icelandic outside-in?** I hope to have shown that this is the case, both cognitively and theoretically. The key data points are:

In Icelandic, reflexives may be bound out of ADJuncts, and out of sentences, when the antecedent is a perspective-holder. I suggest that the use of an ADJ in Icelandic normally reduces the prominence of the current perspective-holder, but that when embedded within a strong third person perspective-holder, ADJ f-structures are no boundary.

In Faroese, the presence of first and second person pronouns causes most hearers to orient to these as the expected perspective-holders, disallowing a (third person) LDR. In addition, while COMPs are better than ADJs for LDR, this is especially true in combination with non-third persons. I suggest then that ADJ f-structures are more of an obstacle to maintaining a perspective-holder in Faroese than COMP f-structures are. In addition, in Faroese, non-third persons nearly always outrank third persons, in immediately becoming the most prominent discourse referent.

Both of these point to an online, cognitive model of LDR, where discourse referents are evaluated for their prominence, and **the appropriate anaphor is selected** when referring to an referent, based on information from ‘outside’ f-structures.

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