

**OUTSIDE-IN BINDING OF REFLEXIVES
IN INSULAR SCANDINAVIAN**

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Proceedings of the LFG09 Conference

Miriam Butt and Tracy Holloway King
(Editors)

2009

CSLI Publications

<http://csli-publications.stanford.edu/>

Abstract

This paper looks at the standard approach to long-distance reflexives within the Lexical-Functional Grammar framework, which defines the binding relation between a reflexive and its non-local antecedent by prescribing the types of syntactic elements which must and must not occur along the path from the reflexive to its antecedent. Evidence from the Insular Scandinavian languages suggests that the binding relation should be expressed at least partially as a constraint 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 purely inside-out functional uncertainty, as is standardly assumed.

1. Long-distance reflexives – from the inside out¹

Following Dalrymple (1993) and Bresnan (2001), anaphoric binding, in particular long-distance reflexivisation (LDR), is viewed in Lexical-Functional Grammar as a kind of **inside-out functional uncertainty**. LDRs are those where the reflexive and its antecedent are not in the same clause, as illustrated in (1). The antecedent in both Icelandic and Faroese here must be *John* – it cannot be *Maria*.

- | | | |
|--------|---------------------------------------|-----------|
| (1) a. | Jón segir [að María elski sig]. | ICELANDIC |
| b. | Jógvan sigur, [at Maria elskar seg]. | FAROESE |
| | J says that M love R ² | |
| | 'John says that Maria loves self' | |

The standard functional uncertainty rule for Icelandic LDR uses inside-out functional uncertainty. It looks something like (2), which says that a reflexive

¹ I would like to thank Rachel Nordlinger, Ash Asudeh and Peter K. Austin for ideas and helpful comments on drafts of this paper. I would particularly like to thank Mary Dalrymple for the lengthy discussion of how to properly implement these ideas within LFG. Given the time constraints to write up this paper, I have not implemented all of these ideas here, but I will attempt to do so later! Finally, I would like to thank the editors for their very constructive comments, particularly on the formalisms used here.

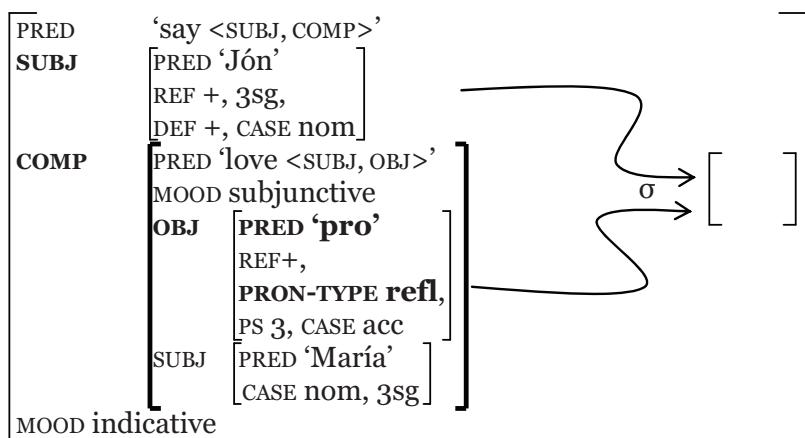
² The following abbreviations are used in this paper: SBJN ‘subjunctive mood’, IND ‘indicative mood’, PS ‘person’, 3 ‘third person’, 2 ‘second person’, 3sg ‘third person singular’, NB ‘number’, sg ‘singular’, GD ‘gender’, f ‘feminine’, nom ‘nominative’, acc ‘accusative’, dat ‘dative’, PRON ‘pronoun’, refl ‘reflexive’, R ‘reflexive’, GF ‘grammatical function’, SUBJ ‘subject’, subj ‘subject’, SBJ ‘subject antecedent required’, OBJ ‘object’, obj ‘object’, ADJ ‘adjunct’, COMP ‘complement’, LOG ‘logophoric(ity)’, LOG ‘logophoric’, PRO ‘non-logophoric pronoun’, ANTE ‘antecedent’, DEF ‘definite’, (single capital letter) name used in example.

has a SUBJect antecedent which is found by looking outwards in the f-structure through a series of COMplement clauses.

$$(2) ((COMP^+ GF \uparrow) SUBJ)_\sigma = \uparrow_\sigma$$

The f-structure in (3) illustrates this. The reflexive has the object function in the embedded complement clause. The path to its antecedent may pass through COMplement f-structures, as indicated by the heavy lines, to be linked to the same semantic structure as the subject of the higher f-structure.

$$(3) \text{ Simplified f-structure for (1a) } Jón \text{ segir } [að \underline{María} \text{ elski sig}].$$



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 addition, data from Insular Scandinavian (i.e. 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) suggested that LDR must be licenced simultaneously by f-structure and the ‘extended indirect discourse’, but is not explicit about how to do this. Here, I will make a suggestion as to how this might be accomplished, specifically by arguing that the role of *perspective-holder* is crucial to establishing the link between an LDR and its antecedent, and that this role is calculated from the outside-in. I will argue for my analysis by assuming the standard inside-out approach, pointing out where this breaks down, and showing how an outside-in approach is better.

2. The Icelandic data

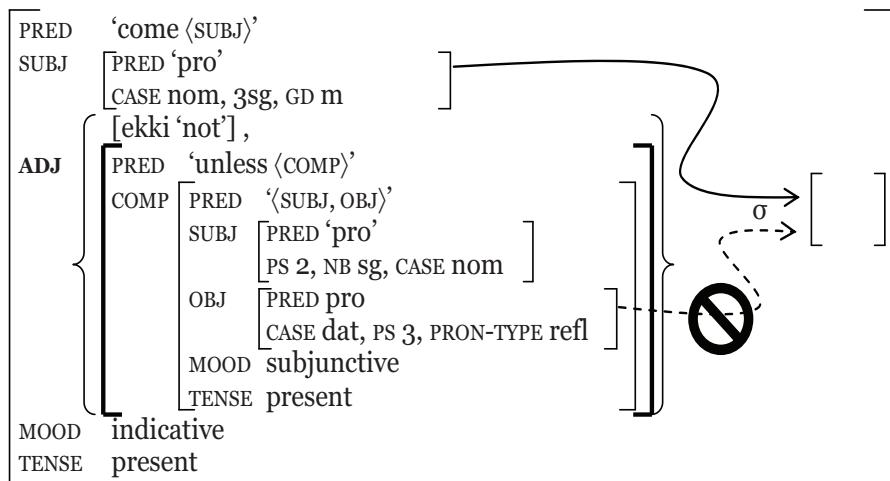
There is a contrast between the minimal pair of Icelandic sentences in (4), in that the reflexive is not permitted (a), only a pronoun is (b). That is, the reflexive and the pronoun are in complementary distribution here.

- (4) a. * **Hann** kemur ekki nema þú bjóðir **sér**.
 b. **Hann** kemur ekki nema þú bjóðir **honum**.
 he comes not unless you invite R/him
 ‘He won’t come unless you invite self/him’

Given the inside-out constraint for LDRs in Icelandic in (5) (repeated from (2)), a simplified f-structure for (4a) is given in (6). The dotted line indicates that this object cannot be linked to the same semantic structure object as the higher subject.

$$(5) ((\text{COMP}^+ \text{GF} \uparrow) \text{SUBJ}_\sigma = \uparrow_\sigma)$$

- (6) f-structure for (4a) *Hann kemur ekki nema þú bjóðir sér*.

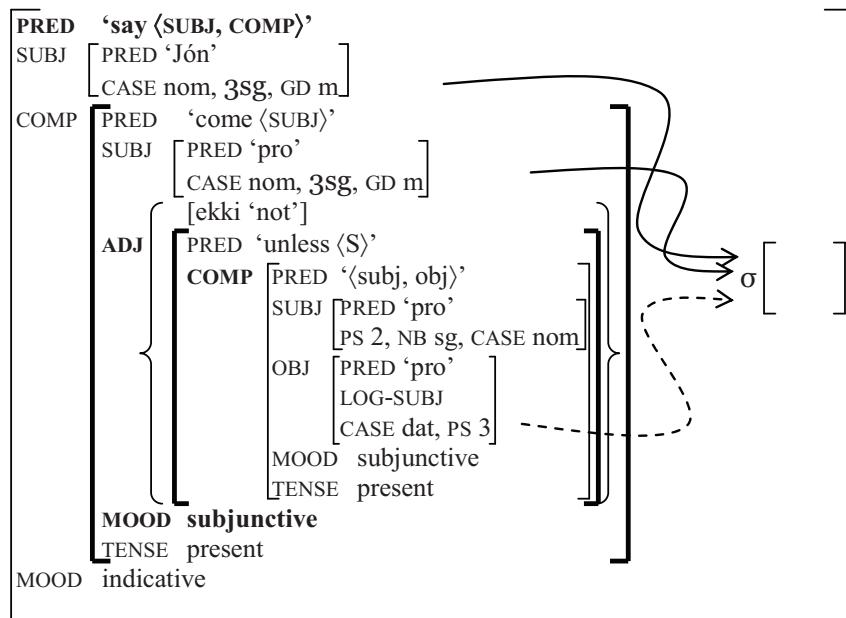


Clearly the f-structure in (6) violates the inside-out binding constraint in (5), as the anaphor is within an ADJunct, which the functional uncertainty equation does not allow it to bind out of. This sentence is therefore correctly predicted by the standard binding theory to be ungrammatical.

The next example illustrates that embedding a sentence like (4) under a ‘perspectivising predicate’ such as *segja* ‘say’ or *halda* ‘believe/think’ renders an LDR reading possible (Thráinsson, 1976).

- (7) **Jón** segir að **hann** kæmi ekki
 J says that he comes.SBJN not
 nema þú bjóðir sér.
 unless you invite. SBJN R
- 'John says that he won't come unless you invite him'

- (8) f-structure for (7) **Jón** segir að **hann** kæmi 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 (4) above, except that its main predicate is in the subjunctive mood (as required by the verb *segja* ‘say’). The intended coreference is illustrated by the identical semantic-structure referred to by the antecedent, reflexive, and intervening pronoun. As above, the dotted line indicates that this object cannot be linked to the same semantic structure object as the higher subjects according to the binding constraint in (5), which disallows the intended binding in (7)/(8).

However, following Bresnan (2001), we can stipulate that 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 (9).

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

On Bresnan's (2001) account, while *sig* must be bound to a subject [+SBJ], it is the [+LOG] ('logophoric') feature which allows the LDR binding to occur in (7). I presume that this implies that the antecedent must also be labelled in the f-structure, with something like [+LOG] or [+LOG-ANTE]. In fact, I will argue that the relevant feature of the antecedent is that of PERSPECTIVE-HOLDER, and that this feature resides, not in the f-structure, but in some other structure. Possible candidate locations for this feature are discourse-structure, or the apparently abandoned anaphoric-structure, both of which may be mapped from (or to?) the f-structure (Kaplan, 1995). In the next section, I briefly discuss the well-known links between LDR and logophoricity/perspective.

2.1. 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). (10a) and (10b) contrast the logophoric pronoun in Ewe with a normal pronoun. The logophoric pronoun must be coreferential with the perspective-holder (10a), while the normal pronoun must be disjoint with this referent (10b).

- (10) 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: 259) 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 occurring more frequently with LDRs than those towards the right.³

- (11) Communication > Thought > Psychological State > Perception

LDRs do occur with non-logocentric predicates, and Reuland and Sigurjónsdóttir (1997) suggested that this is due to a difference between logophoric/discourse LDR on the one hand, and non-logophoric/syntactic

³ Note that this hierarchy does not appear to apply to Norwegian finite LDR (Strahan, 2003).

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 (POV) with Icelandic LDRs, illustrating that a proposition that is presented from a third person’s POV and refers to that referent will be referred to with a reflexive, while the use of a pronoun signals that the referent is not the perspective-holder, cf (12) and (13). 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.

- (12) a. **Jón** segir að María elski **sig.** (= from Jón’s POV)
- b. **Jón** segir að María elski **hann.** (= from someone else’s,
 J says that M loves.SBJN R/him not Jón’s, POV)
 ‘John says that Maria loves self/him’

- (13) a. **Jón** heldur að María elski **sig.** (= from Jón’s POV)
- b. **Jón** heldur að María elski **hann.** (= from someone else’s,
 J thinks that M loves.SBJNR/him not Jón’s, POV)
 ‘John thinks that Maria loves self/him’

The link between LDR and logophoricity thus has to do with perspective, or point-of-view. Kuno’s (1987) empathy is clearly also a related topic. Oshima (2007) argues that these three aspects of linguistic ‘point-of-view’ should be kept distinct, however for the purposes of this paper I am assuming these concepts are closely enough related that I may refer to them all under the rubric of ‘perspective’. Also related to perspective is grammatical mood, where the subjunctive mood typically implies that the speaker does not vouch for the reliability of the proposition, instead assigning it to some other, mentioned party. This is discussed next.

2.2. Subjunctive mood, perspective and logocentricity in Icelandic

The correlation between the use of the subjunctive mood in Icelandic and the acceptability of LDR is often used as the basis for defining Icelandic LDR in terms of grammatical mood (eg, Anderson, 1986, Holmberg and Platzack, 1995). However, this is wrong. While the difference between (14a) 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 Icelandic speakers accept (14b)/(15a). Secondly, those who accept (15a) do not accept (15b), where the higher subject *Jón* cannot be a perspective-holder/logophoric antecedent.

- (14) a. **Jón** segir að María elski **sig.** (= from Jón's POV)
 J says that M love.SBJN R
 ‘John says that Maria loves self’

b. ***Jón** veit að María elskar **sig.** (= ?not from Jón's POV)
 J knows that M love.IND R
 ‘John knows that Maria loves self’

(15) a. **Jón** veit að María elskar **sig.** (= from Jón's POV)
 J knows that M love.IND R
 ‘John knows that Maria loves self’

b. ***Jón** veit ekki að María elskar **sig.** (= not from Jón's POV)
 J knows not that M love.IND R
 ‘John doesn't know 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 (15), where LDR is permitted without the subjunctive mood, there are also examples like (4), which have the subjunctive mood in the embedded clause, but which do not permit LDR.

- (4) a. *Hann kemur ekki nema þú bjóðir sér.
 he comes not unless you invite R
 ‘He won’t come unless you invite self’

However, Icelandic does not allow LDR out of adjunct clauses generally, so this example does not prove the lack of LDR/subjunctive correlation. I do not know of any subjunctive complement clause that does not allow LDR.

Still, 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’. LDR, logophoricity and the subjunctive mood all seem to have in common an involvement with perspective. Rather than LDR being a purely syntactic phenomenon, it seems more reasonable to assume that there are several linguistic features in Icelandic that co-occur with LDRs, and that it is the build-up of all of these that licence binding. As Thráinsson and Sigurðsson have shown, alone the subjunctive mood 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 standardly as **inside-out** functional uncertainty, what is it that changes, from the point-of-

view of the reflexive and the constraint upon it, between (4) and (7)? Both are within ADJ clauses, both are OJBs of verbs that are in the subjunctive mood. Why does the constraint rule (7) in, but (4) out, given that the path from the reflexive is the same, at least initially, in both cases? Why does the constraint not break in (7), since it does break in (4)?

We know the reflexive can be bound to a perspective-holder, but how does the perspective-holder get this label? What allows the reflexive in (7) to get the [+LOG] feature, but not the reflexive in (4), assuming that it is the [LOG] feature that allows the perspective-binding?

- (4) a. *Hann kemur ekki nema þú bjóðir sér.
 he comes not unless you invite R
 ‘He won’t come unless you invite self’

(7) Jón segir að hann kæmi ekki
 J says that he comes.SBNJ not
 nema þú bjóðir sér.
 unless you invite.SBNJ R
 ‘John says that he won’t come unless you invite him’

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

Firstly, we could say that *segja* (and other logocentric verbs) 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.

This constraint could be written such that there is a disjunction between either requiring a COMP or a subjunctive mood with *say* at the top on the path from the R to its antecedent, as shown in (16). Notice that we cannot just say ‘require the subjunctive mood’ alone, since this would incorrectly rule in (4). Requiring a chain of subjunctive moods, and the specification of the predicate *segja* ‘say’ are both off-path constraints.

This constraint actually restricts the antecedent of the reflexive to the subject of the predicate *say*, but does not use the logophoric label. We could use the constraint in (17) which does. Again, indicating that the SUBJ must be logophoric is an off-path constraint.

- (17) $((\text{COMP}^+ \text{GF} \uparrow) \text{SUBJ})_\sigma |$
 $((\text{GF})^+ \text{GF} \uparrow) \text{SUBJ}_\sigma = \uparrow_\sigma$
 $\rightarrow \text{MOOD}=\text{subjnctv}$
 $\rightarrow [+LOG]$
 Go through at least one comp TO a subject OR
 go through at least one f-structure
 each f-structure containing the subjunctive mood
 FROM some GF (R can be anything),
 TO a subject
 that is logophoric.

Independent rules will assign the feature [LOG] to the correct NP, which will then be able to be chosen as an antecedent for the reflexive. Yet this still does not explain which NP this will be – this task still remains.

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. Based on findings by Thráinsson, Maling, Strahan, and others, Asudeh (2009 slide 51) suggested a rule (18) that would have this effect. This rule assigns the role of perspective-holder, or ‘logocentre’, to the subject of *segja* ‘say’, and also passes this logophoricity down through subsequent embedded clauses.

- (18) $segja (\uparrow \text{PRED}) = \text{'say } \langle \text{SUBJ}, \text{COMP} \rangle'$
 $((\uparrow \text{SUBJ})_\pi \text{ logocentre}) = +$ assigns role of logocentre
 to subject of ‘say’
 $(\uparrow \text{logophoric}) = +$
 $(\uparrow \text{GF}^+)$
 $(\rightarrow \text{mood}) =_c \text{subjunctive}$
 $(\uparrow \text{logophoric}) = (\rightarrow \text{logophoric})$ passes this
 logophoricity down

A similar rule would presumably apply to *vita* ‘know’ for those speakers who allow LDR out of its (indicative mood) complement.

Notice that both of these possibilities correctly constrain the choice of antecedent to the subject of *segja* in (7), and never the subject of *koma*. *Hann* is never recognised as a perspective-holder/logocentre, 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 creation of a logocentric context, which is created by the predicate (as indicated in the two suggestions here), and also by features of the antecedent such as animacy (eg Thráinsson, 2007).

Conclusion: Both of these approaches will work to constrain LDR in Icelandic, using inside-out functional uncertainty. However, the use of inside-out functional uncertainty still leaves open the problem of how to assign the role of perspective-holder or logocentre.

After considering the Faroese data, I will suggest that the perspective-holder in both Faroese and Icelandic is assigned to a particular NP for reasons independent of anaphora, and that there is a constraint on LDR requiring its antecedent to be a perspective-holder.

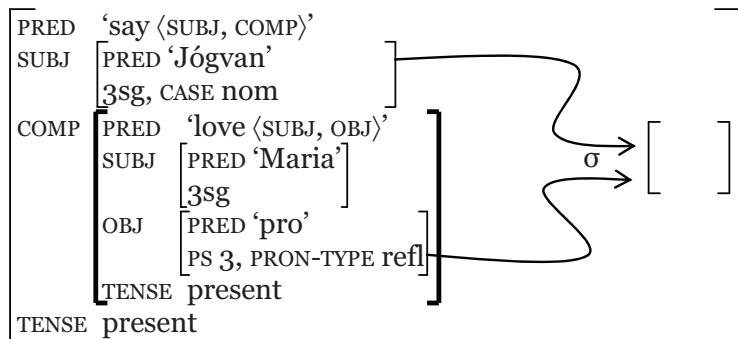
4. Faroese

Examples of Faroese LDR are given in (19). The Icelandic equivalents are also given, for comparison. (19a, b) have only third person nominals, while (19c, d) have a second person pronoun as the subject of the embedded clause (i.e. the clause containing the reflexive).

- (19) a. **Jógvan** sigur, [at Maria elskar **seg**]. FAROESE
- b. **Jón** segir [að María elski **sig**]. ICELANDIC
 J says that M loves R
 ‘John says that Maria loves self’
- c. * **Jógvan** sigur, [at tú elskar **seg**]. FAROESE
- d. **Jón** segir [að bú elskir **sig**]. ICELANDIC
 J says that you love R
 ‘John says that you love self’

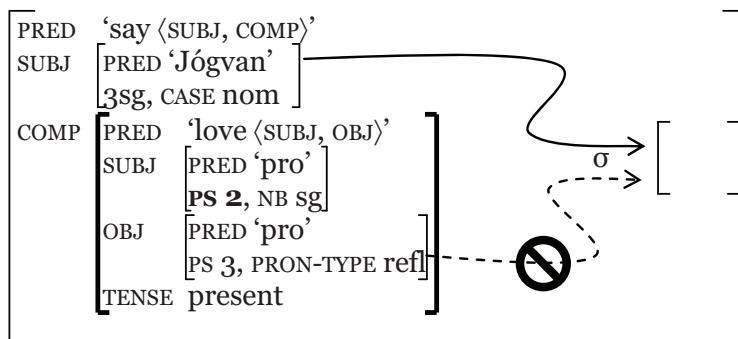
(20) gives the f-structure of (19a). Notice that the reflexive can bind out of the COMP to the SUBJ, like in Icelandic. (Faroese does not have grammatical mood.)

(20) f-structure for *Jógvan sigur, at [Maria elskar seg]*



In (21) is the f-structure for the version of this sentence with a second person pronoun.

(21) f-structure for *Jógvan sigur, at [tú elskar seg]*



The f-structure in (21) is identical to that in (20), 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 (21) 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 (21), especially when they are reminded that they said that (20) was fine! Intriguingly, very few Faroese speakers change their mind about the ungrammaticality of (21) when its similarity to (20) 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 (22) and (23). Notice also that the equivalent Icelandic sentences are very (22a, 23), or at least rather (22b),

ungrammatical. (22c,d) give the percentage of speakers who reported that this sentence sounded ‘completely natural’ in the large syntactic overview projects ongoing in Iceland and the Faroe Islands. These percentages are based on results from around 1,000 Icelandic speakers and around 250 speakers of Faroese. The other judgements are from my own fieldwork.

- (22) a. **Zakaris** lesur ikki bókina, FAROESE
 Z reads not book.DEF.3sg.F
 [tí að hon keðir seg].
 because 3sg.NOM.F bore R
 ‘Zakaris doesn’t read the book, because it bores self’
- b. ?* **Jón** les ekki bókina, ICELANDIC
 J reads not book.DEF.3sg.F
 [því að hún ergir sig].
 because 3sg.NOM.F annoy R
 ‘John doesn’t read the book, because it irritates self’
- c. **Hann** brúkar tað, [sum] passar **sær**. FAR. (60%)
 d. * **Hann** notar það, [sem] passar **sér**. ICEL. (25%)
 he uses that which suits R
 ‘He uses that which suits self’
- (23) a. **Magnus** dámar Beintu, [tí at FAROESE
 M likes B because
 hon hjálpir sær við heima arbeiðinum].
 she help R with house work
 ‘Magnus likes Beinta because she helps him with the housework’
- b. * **Magnus** dámar meg, [tí at FAROESE
 M likes me because
 eg hjálpi sær við heima arbeiðinum].
 I help R with house work
 ‘Magnus likes me because I help him with the housework’
- c. **Olaf** ivast í, [um Maria vil FAROESE
 O doubts in if M want
 hjálpa sær við heima arbeiðið].
 help R with house work
 ‘Olaf doubts whether Maria want to help R with the house work’

- d. *Olaf ivast í, [um tú vil FAROESE
 O doubts in if you want
 hjálpa **sær** við heima arbeidið].
 help R with house work
 ‘Olaf doubts whether you want to help R with the 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 pronoun. There does not appear to be a difference between COMP or ADJ paths.⁴

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. The figure of 43% comes from two of these speakers selecting ‘almost completely natural’ as their judgement instead of ‘completely natural’.

- (24) a. Eg vísti **Mariu** bókina,
 I showed M book.DEF
 sum var skrivað um **seg** [30%]
 which was written about R
 ‘I showed Maria the book which was written about self’
- b. Eg vísti **Mariu** bókina,
 I showed M book.DEF
 sum var skrivað um **sín abba** [43%]
 which was written about R’s grandfather
 ‘I showed Maria the book which was written about self’s grandfather’

Faroese speakers who accept LDRs also prefer them to a pronoun.

We could postulate the regular expression governing LDR in Faroese as in (25).

$$(25) \quad (\text{GF}^+ \text{GF} \uparrow)_\sigma = \uparrow_\sigma \\ \neg(\rightarrow \text{PS} = 1 \vee 2)^5$$

⁴ This is a simplification of the data, since not all Faroese speakers allow LDR out of an adjunct clause (Strahan, in press).

⁵ This off-path constraint is intended to include any instance of a first or second person feature anywhere, be it in the subject, object, other GF, verb, or in a non-GF.

This rule says that the antecedent is not restricted to any grammatical function (GF), nor to following any particular 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 a person feature of 1 or 2.

However, I am not satisfied with the rule in (25) 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, *in press*). That is, there is an interaction effect between person and clause type, which is not captured by the suggested constraint.

Thirdly, this off-path constraint is stipulative, although the motivation is straight-forward. Intuitively, if the antecedent of an LDR is a perspective-holder, which is passed down through subsequent f-structures, we can appeal to the fact that first and second person pronouns outrank third person pronouns in perspective-holding-ability. This would mean that a first or second person pronoun will always (for many speakers) become the perspective-holder, ruling out (third person) LDR. This observation itself provides direct motivation for the identification of the antecedent for the LDR, namely that, in a general text containing and about third persons, the perspective-holder, and thus LDR antecedent, is a third person nominal, unless a non-third person pronoun appears.

If we assume that speakers and hearers are always aware of which discourse referent 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. I will describe the general principles behind how to calculate this in the following section. Notice that this means that the calculation of the perspective-holder must take place before any binding constraints apply. Furthermore, this calculation of perspective-holder necessarily applies from the outside in.

5. Outside-in or inside-out functional uncertainty?

I have pointed out some problems for the standard inside-out view of anaphoric binding, in particular with respect to Icelandic perspectivising LDR and Faroese LDR in conjunction with non-third person pronouns. However, suggesting an outside-in view of anaphoric binding clearly poses a rather large problem. As pointed out by an anonymous reviewer, a strict view of the LDR constraint as simply '[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 can the binding constraint rule in a sentence with a perspective-holder antecedent, if it does not know what this perspective-holder looks like? That is, the perspective-holder needs to be labelled as such, somehow.

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 the antecedent is to be identified, and that can only be satisfied if the antecedent actually exists, and is already identified as somehow being ‘available’ to be the antecedent for an LDR. That is to say, the inside-out LDR binding constraints suggested for Icelandic, which relies on the AntecedentFunction being labelled as [+LOG], or the Faroese constraint which essentially says ‘bind to anything you like, so long as there is no non-third person around’, still do not answer the question of which NP will be the antecedent. Both the [+LOG] label and the function of perspective-holder must be calculated or assigned using some other tool, which must be top-down/outside-in.

An antecedent-based, outside-in, account of binding also deals neatly with ‘discourse’ binding, where the antecedent is not even in the same sentence, as in (26). The antecedent of *sér* here is not even mentioned in this excerpt.

(26)	<u>M</u> aría _i	var	alltaf	svo	andstyggileg.
	M	was.IND	always	so	nasty.
	Pegar	Ólafur _j	kæmi	segði	hún sér _{*i/*j/k}
	when	O	come.SBJN	say.SBJN	she R
	areiðanlega	að	fara.		
	certainly	to	go		

‘Maria was always so nasty. When Olaf arrived, she would certainly tell himself/herself [the person whose thoughts are being presented – not Olaf] to leave.’

What (26) clearly shows, is that the perspective-holder of each given domain is already calculated, for reasons independent of LDR. The first sentence of (26) should be interpreted as, not that María is an objectively nasty person, but that she is subjectively nasty, in particular, she is nasty to the owner of the narrative, to the perspective-holder. Even with no reflexive, a perspective-holder is calculated. This perspective-holder is carried through, not only subsequent clauses, but also subsequent sentences. An overt indication of this is the use of the subjunctive mood in the second sentence. The conjunction *pegar* ‘when’ does not itself require the subjunctive mood, only continuing domain of the perspective-holder does.

As McCready (2007: 41) shows and says, ‘subordinating discourse relations enable point of views established in one discourse segment to be retained into later segments’.

To implement the passing down of perspective, I suggest that the perspective-holder, here labelled ‘P’, is initially assumed to be the speaker. At a complement clause boundary in both Icelandic and Faroese, the P either changes to the animate, subject NP of the preceding clause, or remains/changes to the speaker, as in (27) and (28). For an LDR to be used, the P at the point in the utterance of the anaphor must be the appropriate referent in the sentence or discourse.

- (27) Jón segir að hann kæmi ekki nema þú bjóðir sér. ICEL.
 John says that he comes.SBJN not unless you invite.SBJN R
P: speaker COMP:speaker or *Jón* ADJ:speaker or same (i.e. *Jón*)
 choose:*Jón* choose:same (i.e. *Jón*)

- (28) Jógvan sigur, at Maria elskar seg. FAROESE
 John says that Maria loves self
P: speaker COMP:speaker or *Jógvan*
 choose:*Jógvan*

In Icelandic, and for some speakers of Faroese, at an adjunct clause boundary, the P either changes to the speaker or remains the same – there is no option to change to the preceding subject/animate NP, as in (29). This means that ordinarily only a pronoun may have an antecedent on the other side of an adjunct clause boundary, as in (30), while a reflexive may not. For other speakers of Faroese, the P change follows the rule for a complement clause, compare (31) in Faroese with (32) in Icelandic.

- (29) * Hann kemur ekki nema þú bjóðir sér. ICELANDIC
 he comes.IND not unless you invite.SBJN R
P: speaker ADJ:speaker, or same
 (i.e., must be speaker, thus *sér)

- (30) Hann kemur ekki nema þú bjóðir honum. ICELANDIC
 he comes.IND not unless you invite.SBJN him
P: speaker ADJ:speaker, or same
 (i.e., must be speaker)

- (31) Zakaris lesur ikki bókina, tí at hon keðir seg. FAROESE
 Zakaris reads not the.book because it bores R
P: speaker ADJ:speaker, or *Zakaris*

- (32) ?* Jón les ekki bókina, því að hún ergir sig. ICELANDIC
 John reads not the.book because it bores R
P: speaker ADJ:speaker, or same
 (i.e., must be speaker)

For most speakers of Faroese, at the use of a first or second person pronoun, the P changes to the referent of that pronoun, as indicated in the last line of (33). This means then that third person reflexives are ruled out since the P at the instant of the anaphor is a second person referent, thus there is no ‘available’ third person P for the anaphor to bind to.

(33)	*Jógvan	sigur,	at	<u>tú</u>	elskar	seg.	FAROESE
	John	says	that		you	love self	
P:	speaker		COMP:speaker, or <i>Jógvan</i>			2:change to ‘you’ (thus *seg)	

Calculation of the P, given that it is calculated for reasons independent of binding, probably occurs in the discourse-structure although a dedicated anaphoric-structure is also plausible (Kaplan, 1995). Full details of how to implement this are beyond the scope of this paper, as the relevant structures in LFG are not yet stable enough to implement this analysis without a substantial amount of architectural explanation. I leave this issue for future work. The important point here is that the calculation of the antecedent of an LDR is now reduced to the calculation of the perspective-holder, and it occurs from the outside-in. For at least Faroese and Icelandic, f-structure factors are important in this calculation (COMPs versus ADJs, person). Non-f-structure factors are also relevant, given the evidence of discourse reflexives as in (26), where the use of the subjunctive mood in Icelandic continues throughout a paragraph across sentences boundaries, which is probably some kind of i- or d-structure phenomenon.

The idea that there is a single, simple negative constraint on LDR that applies to the syntax, namely that these reflexives cannot be bound to a coargument, coupled with the single positive constraint that the reflexive must be bound to the perspective-holder, is highly appealing. Unfortunately, this position ignores the clause-bound uses of reflexives, such as with inherently reflexive predicates, reflexives in locative PPs, and the fact that the possessive reflexive can definitely have a local antecedent. I leave it for another paper to explore whether these kinds of reflexives are also bound to the perspective-holder, and make the claim for outside-in binding here only for LDRs.⁶

⁶ Rachel Nordlinger (p.c.) made the intriguing suggestion that, for the Icelandic data at least, the inside-out binding constraint could work if the path was stated as ‘make the last thing you go out through a COMP’, as shown in (i).

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

In fact, I can see no direct problems with this rule, as it neatly sidesteps the problematic Icelandic data in (4) and (7). My only objections are that it does not

6. Summary and final remarks

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 as is the case for a proposition embedded under the verb *segja*, then ADJ f-structures are no boundary. I also suggest that the use of the subjunctive mood with complement clauses increases the likelihood that the subject is a perspective-holder, and thus a potential LDR antecedent. In Faroese, reflexives and their antecedents may be bound across an ADJ clause boundary if the speaker can construe the sentence as being ‘about’ the intended antecedent.

Given the fact that the perspective-holder is calculated for reasons independent of anaphora resolution, it seems sensible to have the outside-in constraint apply in the appropriate structure. This structure would be something like information-structure, discourse-structure, anaphoric-structure or pragmatic-structure.

Asher and Wada (1988) have already had some success in implementing a multi-faceted, top-down/outside-in algorithm which could correctly predict whether a discourse referent was going to be referred to with a pronoun or a full NP. Their success in accounting for the distribution of pronouns versus full NPs using an antecedent-based rule is a good indication that a similar approach could work for reflexives.

In conclusion, evidence from Icelandic and Faroese points to an online, cognitive model of LDR, where discourse referents are evaluated for their perspective-holding ability, in each relevant domain. This is probably calculated in the d-structure or anaphoric-structure. The single simple rule given in (35) applies, where P represents the perspective-holder, and ↑ represents the reflexive.

$$(34) \quad P_\sigma = \uparrow_\sigma$$

When a reflexive needs an antecedent, it therefore binds to the DP/NP which is already indicating its availability, passing this information down, from the outside in.

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work for Faroese, nor for discourse reflexives as in (26), which are otherwise unified under the account suggested here.

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