DEFECTIVENESS, CLITICIZATION, AND LONG-DISTANCE REFLEXIVES IN ICELANDIC*

Masashi Nomura¹ and Yuka Makita²
Chukyo University¹ and Chubu University²

1. Introduction

It has been observed since Thráinsson (1976) that a simple reflexive sig in Icelandic may take a long-distance (LD) antecedent when it is in infinitival or subjunctive (SBJ) clauses, but not in indicative (IND) clauses, as shown in (1) (adopted from Reuland 2006:544).

(1) a. Jón skipaði Pétri [að PRO raka sigi,j,*k á hverjum degi].
   John ordered Peter to shave.REFL on every day
   ‘John ordered Peter to shave himself every day.’

b. Jón segir [að Pétr raki sigi,j,*k á hverjum degi].
   John says that Peter shaves.REFL on every day
   ‘John says that Peter shaves himself every day.’

c. Jón veit [að Pétr rakar sigi,j,*k á hverjum degi].
   John knows that Peter shaves.REFL on every day
   ‘John knows that Peter shaves himself every day.’

cf. John says that Peter shaves himself everyday.

Various analyses have been put forth to account for the LD use of sig in sentences like (1a) and (1b), where the antecedent may be beyond the nearest c-commanding subject in violation of Condition A of Binding Theory. They are roughly divided into two groups. One group proposes a unified syntactic analysis that the LD use of sig in SBJs and INFS is constrained by syntactic conditions (Anderson 1986, Pica 1991, Richards 1996). The other proposes that although the interpretation of sig in INFS involves a structural relation with its antecedent such as c-command, the LD use of sig in SBJs is constrained by discourse factors such as point of view (Thráinsson 1976, 1990, 1991, Maling 1984, Sells 1987, Sigurðsson 1990, Reuland and Sigurjónsdóttir 1997, Reuland 2006, 2011). The latter analysis has been the mainstream and since Reuland and Sigurjónsdóttir (1997), there has been no significant argument against it.

Interestingly, however, as Thráinsson (1991) discusses, we observe the case where syntactic binding seems to be involved in the LD use of sig in SBJs. The relevant example is given in (2).

---

* We are grateful to Höskuldur Thráinsson, Sigríður Sigurjónsdóttir, Jóhannes Gisli Jónsson and their graduate students at the University of Iceland for help with the Icelandic data and for discussing various issues associated with this paper. We would also like to thank the audience at GLOW in Asia IX for their comments and suggestions. We also benefited from discussions with Anders Holmberg, Hisa Kitahara, Satoshi Oku, Masao Ochi, Isabelle Charnavel, and Shigeru Miyagawa. We gratefully acknowledge the support of the Grant-in-Aid for Young Scientists (B) from the Japan Society for the Promotion of Science (Grant Number 24720224) to Masashi Nomura.
(2) Jóni sigði [að þu hefðir svíkið sigi], og Pétur gerði það líka.

John said that you had betrayed him and Peter did so too.

(=Peter said that you betrayed him, or: Peter said that you had betrayed John)  
(Thráinsson 1991:60)

It is standard to assume that the sloppy identity reading can be obtained if a syntactically bound anaphor is involved in the elliptic part (Reinhart 1983, Heim and Kratzer 1998). According to Thráinsson (1991), in sentences like (2), most speakers seem to find it rather easy to get both the sloppy and strict readings. Thus, we consider this observation as a piece of evidence that syntactic binding is relevant for the LD use of sig in SBJs. In this paper, we will provide some arguments that syntactic binding must play an important role in both SBJs and INFs and argue for a unified syntactic account of LD binding in Icelandic.


As we have briefly mentioned in section 1, Reuland (2006) argues that LD sig behaves differently in SBJs and INFs; sig in SBJs is constrained by discourse factors (e.g. point of view) while sig in INFs is ruled by structural conditions (e.g. c-command). His argument is mainly based on the observations that (i) sig in SBJs can refer to an apparently non-c-commanding antecedent, whereas only c-command determines the antecedent possibilities of sig in INFs as in (3), and (ii) a derived subject of a passive serves as an antecedent for sig in INFs, but not in SBJs as in (4).

(3) a. [DP Álítt Jónsí, r] virðist [tj vera [að ég hætti sigí]].

belief John’s seems to be that I hate SBJ REFL

‘John’s belief seems to be that I hate him.’  
(Reuland 2006:546)

b. * [DP Álítt Jónsí, r] er sagt [tj hæfa sér vel ].

belief John’s is said to suit INF REFL well

‘John’s belief is said to suit him well.’  
(Reuland 2006:549)

(4) a. Pétrí var sagt (af Jónír) [að ég elskaðiði sigí, tj].

Peter was told (by John) that I loved SBJ REFL.

‘Peter was told (by John) that I loved him.’  
(Reuland 2006:547)

b. Maria var sogað (af Jónír) [tj hafa látið [mig þvo sérí, í]].

Mary was said (by John) have INF made me wash INF REFL.

‘Mary was said (by John) that she had made me wash her.’  
(Reuland 2006:549)

According to Reuland (2006), the LD use of sig in SBJs is discourse-dependent and the antecedent of sig in SBJs must carry the perspective or point of view of the sentences. Therefore, whether or not LD sig in SBJs is c-commanded by its antecedent is irrelevant. LD sig in INFs, on the other hand, does not have to have a perspective holder but must be c-commanded by its antecedent. For example, the sentences in (3) contain a constituent that is a possible perspective holder; Jón is the person whose belief is reported from Jón’s point of view, and hence carries the perspective of the sentence. In (3), the perspective holder Jón does not c-command sig, but it can serve as the antecedent for sig in SBJs while it cannot in INFs. The sentences in (4), on the other hand, do not contain a perspective holder because neither a derived subject nor the object of the by phrase carry the perspective or point of view of the sentences. In (4), the derived subject c-commands sig, but it cannot serve as the antecedent for sig in SBJs while it can in INFs. Thus, Reuland (2006) concludes that LD sig in SBJs is
constrained by discourse factors (c-command is not crucial), while sig in INFS is uniquely c-commanded by its antecedent (discourse factors are not reflected).

Notice that Reuland’s (2006) analysis that LD sig in SBJS is not syntactically bound is based on the observation that sig can take a non-c-commanding possessive as an antecedent in SBJS. As informally stated by Maling (1984), however, a non-c-commanding possessive can be a possible binder for sig only when the SBJ clause containing sig is the sentential complement of the nouns which assert propositions (i.e., trú ‘belief’, skoðun ‘opinion’), as in (5) below.1

(5) a. Trú Ólafs, aði allar syndir sinar verði sér fyrirfælnar, er bjargföst. belief Ólafs that all sins REFL’s will.be.SBJ REFL forgiven is rockfirm ‘Ólaf’s belief that all his sins will be forgiven him is rockfirm.

b. Skoðun Siggu er að sig vanti hæfileika. opinion Sigga’s is that REFL lacks.SBJ talent ‘Sigga’s opinion is that she lacks talent.’ (Maling 1984:221-222)

In (5a), Olaf’s belief that ... seems to be parallel to the finite clause Olaf believed that ... in some sense. This contrasts with the ill-formed sentences in (6) where the SBJ clauses are not in the complement position of the nouns trú ‘belief’ and skoðun ‘opinion.’

(6) a. Skoðun Siggu fær mig til að halda að hana/*sig vanti hæfileika. opinion Sigga’s leads.IND me for to think that she/*REFL lacks.SBJ talent ‘Sigga’s opinion leads me to think that she lacks talent.’ (Maling 1984:222)

b. Sigga segir að þér þyki trú Ólafs, sem sé honum/*sér huggun, barnaleg. a-comfort childish ‘Sigga says that you consider Olaf’s belief, which is to him a comfort, childish.’ (Maling 1984:238)

In (6a), sig is in a complement clause of the verb halda but not of the noun skoðun. The noun skoðun does not contain a complement clause so that sig has no chance to be in its complement. Hence, no antecedent-anaphor relation between Sigga and sig. In (6b), sig is in a relative clause, which is not a complement clause of the noun trú, but an adjunct clause, hence no antecedent-anaphor relation between Ólaf and sig.

It is also noteworthy that Maling (1984:222) first hinted from the contrast between (5) and (6) that the conditions on binding should perhaps not be stated in terms of surface syntactic configurations but in terms of some other level of representation. In this paper, we will later assume that in the course of the derivation, sig in the SBJ complement of the nouns which assert propositions must enter into a structural relation with the ‘subject’ of the nouns.

Now let us consider the cases of derived subjects. We saw in (4b) that sig in infinitival clauses can take a derived subject of a passive as an antecedent, since sig in INFS is solely constrained by structural relations. In (7), however, the derived subject Jóni cannot be a possible antecedent for sig in the infinitival clause although they are in a c-command relation.

(7) *Jóni var lofað (af Pétri)[að PRO, raka sig].
John.DAT was promised (by Peter) to shave REFL ‘John was promised (by Peter) to shave him.’

---
1 Maling (1984:222) states that the similar phenomenon is also observed in languages like Norwegian and Malayalam.
A crucial difference between (4b) and (7) is that the matrix subject is raised from the infinitival subject position in the former, but from the matrix object position in the latter. Thus, sig in INFS is constrained by neither discourse factors nor c-command.

All things considered, we need to develop a new syntactic analysis that can rule in sig in (4b) and (5), but rule out sig in (4a), (6) and (7). In the next section, we propose a new unified syntactic account of LD sig within Chomsky’s (2008) Probe-Goal framework and argue that LD use of sig is best analyzed in terms of Binding through Agree.

3. Proposal

It has been proposed in recent studies on binding that the syntactic binding of anaphors can be recast within the current phase-based approach; being underspecified for certain φ-feature values, anaphors must be licensed/valued by sharing φ-features with an antecedent via Agree (Uriagereka and Gallego 2006, Gallego 2010, Reuland 2011, Ishino and Ura 2012 among others). We will basically follow this Agree-based analysis, and demonstrate that Chomsky’s (2008) phase-based approach successfully accounts for the apparently problematic properties of LD reflexive sig.

First, we make the following theoretical assumptions with respect to sig as in (8).

(8) Icelandic reflexive sig is:
   a. φ-defective; it has valued person-feature (3rd person), but number and gender features are unvalued.
   b. a clitic which undergoes Clitic Climbing onto v* after Spell-Out to have its unvalued φ-features valued.

Adopting the general assumption that anaphors are φ-defective (Burzio 1986, 1991, Thráinsson 1992, Uriagereka and Gallego 2006, Reuland 2011, Ishino and Ura 2012), we assume that sig is φ-defective so that its interpretable but unvalued φ-features must be valued by a probe with the complete φ-set (Pesetsky and Torrego 2007). Following Pica (1991) and Safir (2004), we also assume that sig is a clitic just like reflexive clitics in Romance languages, but unlike those in Romance languages, it covertly cliticizes onto the verbal head v* leaving its phonological copy behind.²

Given these assumptions, we can explain how sig can be in the antecedent-anaphor relation with the subject of the sentence in (9a) but not in (9b).

(9) a. Jóni rakaði sig.  
   John shaved REF
   ’John shaved himself.’
   b. *Ég/ðú rakaði sig.  
   I/you shaved REF
   ’I/you shaved myself/yourself.’

Let us consider the derivation of (9a). The relevant structure is given in (10).³

---

² Unlike Pica (1991) who argues that sig cliticizes onto Infl, we assume that sig cliticizes onto v*. See Boeckx and Gallego (2008) for Clitic Climbing to v*.

³ At the CP phase level, DP moves to the Spec of TP. Since this movement is irrelevant to our discussion, we do not schematize the movement of DP into the Spec of TP in the tree diagrams.
At the v*P phase level, since \( \text{sig} \) appears in the object position, it enters into an Agree relation with V (inheriting Agree-features from \( \text{v*} \)) and accusative Case is valued. Notice that \( \text{sig} \) is \( \varphi \)-defective so that it has valued person-feature (3\(^{rd}\) person), but number and gender features are unvalued. Hence, its interpretable but unvalued \( \varphi \)-features must be valued in the course of the derivation to avoid the derivation crashing. By assumption, \( \varphi \)-defective \( \text{sig} \) undergoes covert clitic movement (Safir 2004) before Transfer to the CI interface but after Spell-Out to the SM interface (Nissenbaum 2000). Under the phase-based approach, \( \text{sig} \) must cliticize onto \( \text{v*} \). At the CP phase level as in (10), the DP Jón enters into an Agree relation with T (inheriting Agree-features from C) and uninterpretable \( \varphi \)-features of T are valued. Since \( \text{sig} \) is also at the same phase level, it can Agree with T which contains the complete \( \varphi \)-set. Now \( \text{sig} \) possesses the same features as Jón via Agree with T (Binding through Agree).

The ungrammaticality of (9b) where the 1\(^{st}\) or 2\(^{nd}\) person subject cannot be an antecedent of \( \text{sig} \) is explained due to feature mismatch. Since \( \text{sig} \) contains valued person-feature (3\(^{rd}\) person), it cannot Agree with T once person-feature of T is valued as 1\(^{st}\) or 2\(^{nd}\) person.

Now, we need a mechanism of LD Binding through Agree in order to account for the LD use of \( \text{sig} \) in sentences like (1). As we have seen, \( \text{sig} \) cliticizes onto \( \text{v*} \) to have its interpretable but unvalued \( \varphi \)-features valued. In order for \( \text{sig} \) to cliticize onto the next higher \( \text{v*} \), \( \text{sig} \) needs to move out of the CP phase. Thus, we make the following assumptions to make \( \text{sig} \) accessible to the higher projection.

(11) Icelandic subjunctive C and non-finite C are defective phases in the sense that they lack phase-impenetrability condition effect.\(^4\)^5

Being defective, these CP clause boundaries are transparent for \( \text{sig} \)-cliticization to \( \text{v*} \) and extend the anaphoric domain of \( \text{sig} \).\(^6\) According to Rizzi (1982) and Cinque (2004), Romance languages exhibit Clitic Climbing out of non-finite C. Thus, it can be safely assumed that both SBJ C and non-finite C are defective in Icelandic.

Let us now consider the derivation of the examples in (1), repeated below in (12).

---

\(^4\) Chomsky’s (2000:108) version of a phase-impenetrability condition (PIC) is formulated as in (i).
\( (i) \) In phase \( \alpha \) with head H, the domain of H is not accessible to operations outside \( \alpha \), only H and its edge are accessible to such operations.

\(^5\) Defectiveness of SBJ C and non-finite C in Icelandic is only restricted to the lack of PIC effect. Therefore, Agree-features belong to these C heads and hence feature inheritance from C to T also takes place.

\(^6\) Similar effects have been discussed by Gallego and Uriagereka (2007) for Spanish and by Wurmbrand (To appear) for English.

\(^{\text{INF}}\) According to Krapova (2001), in languages like Modern Greek, finite complements with the special SBJ morphology na may function as an English or Romance-type INF.
The proposed assumption in (11) will make a difference between (12a-b) and (12c) with respect to the antecedent possibilities of sig. By the assumption in (11), the non-finite C in (12a) and the SBJ C in (12b) are considered as defective, while the IND C is not. Thus the IND C is a finite strong phase and hence it shows PIC effect. Unavailability of the LD use of sig in (12c) can be immediately accounted for. If the relevant CP is the strong phase, then sig cannot move out of TP, the Spell-Out/Transfer domain, because sig can only cliticize on v* so that it cannot find the next higher v*, a possible landing site, at the relevant phase level.

The LD use of sig in (12a) and (12b), on the other hand, has another option. If the relevant C is defective, then its complement does not Spell-Out/Transfer until the next strong phase level, v*P. As Chomsky (2000) proposes, the syntactic derivation proceeds phase by phase in order to reduce the computational burden. Given that all operations including probe-goal agreement and cliticization apply at the same phase, we have two syntactic operations to apply with respect to sig at the matrix v*P phase level in (12a-b): Agree and Clitic Climbing. Either operation can precede the other, because at the level of the phase, operations are unordered with respect to each other. Thus, these derivational options are illustrated in (13) and (14).

(13) Agree

\[
\begin{align*}
\text{Agree (T}_{uφ[\text{valued}]}, \text{DP}_{iφ[\text{uCase}[\text{nom}]])} \\
\text{Agree (T}_{uφ[\text{valued}]}, \text{sig}_{iφ[\text{valued}]}) \\
\end{align*}
\]

In (13), v*P₁ is a strong phase so that its complement VP is Spelled-Out/Transferred. Since the embedded C is defective, the next strong phase is v*P₂. There are two syntactic operations involved with sig at the v*P₂ phase level. One option is that Agree precedes Clitic Climbing.
At this phase level, sig enters into an Agree relation with T\textsubscript{1} together with DP\textsubscript{1}, and hence sig ends up being bound by DP\textsubscript{1}. It cannot Agree with the matrix V because T is the closer Probe to sig at the v*P\textsubscript{2} phase level. In other words, locality is relevant with respect to the operation Agree when more than one possible Probe are at the same phase level.\textsuperscript{7} Since all the φ-features of sig are valued, no Clitic Climbing applies after all, hence the local binding can be observed in (12a-b) like (12c).

(14) Clitic Climbing

\[
\begin{array}{c}
\text{DP}_2 \\
\text{sig} + v^* \\
\text{VP} \\
\text{CP} \\
\text{C}_{\text{def}} \\
\text{TP} \\
\text{v}^*\text{P}_1 \\
\text{DP}_1 \\
\text{sig} + v^* \\
\text{VP} \\
\text{V} \\
\text{sig}
\end{array}
\]

In (14), on the other hand, Clitic Climbing takes place prior to Agree. At the v*P\textsubscript{2} phase level, sig can undergo Clitic Climbing onto v* because the embedded C is defective and hence does not block the covert clitic movement of sig. Then the operation Agree by T\textsubscript{1} takes place. Since sig is no longer in the search domain of T\textsubscript{1}, it does not enter into an Agree relation with T\textsubscript{1}. Thus, sig cliticizes onto the matrix v* and hence it will be accessible at the next higher phase level.

Now let us consider the next phase level of (14) in (15).

(15)

\[
\begin{array}{c}
\text{CP} \\
\text{C} \\
\text{TP} \\
\text{v}^*\text{P}_2 \\
\text{DP}_2 \\
\text{sig} + v^* \\
\text{VP} \\
\text{V} \\
\text{sig}
\end{array}
\]

At the matrix CP phase level, sig cliticizing on v* can enter into an Agree relation with T\textsubscript{2} because it escapes from Transfer by the proposed covert clitic movement. Since T\textsubscript{2} Agrees with DP\textsubscript{2}, sig has the same features as DP\textsubscript{2} via Agree with T\textsubscript{2}. Thus, the proposed analysis can

\textsuperscript{7} This is reminiscent of Starke’s (2001) feature-based Relativised Minimality.
properly capture the antecedent possibilities of sig in examples like (12).

4. Analysis

4.1. Derived Subject Revisited

As we have reviewed in section 2, sig in SBJs cannot establish the antecedent-anaphor relation with a derived subject. The relevant example in (4a) is repeated below as (16).

(16) Péttrí var sagt (af Jóni) [að ég elskadí sig*i/*j].
   ‘Peter was told (by John) that I loved.’

Reuland (2006) thus argues that structural conditions like c-command is irrelevant in LD binding of sig in SBJs. Our syntactic analysis, however, successfully captures this apparently problematic property of sig. The example in (16) under the given analysis may have the structure illustrated below in (17).

(17) [CP C [TP DPj T2 [vP tDP2 v [vP V [XP tDP2 X [CP Cdef [TP DP1 T1 [vP tDP1 sig+v* [vP V [sig V]]]]]]]]]]]

In order to receive the same φ-features as the derived subject DP2, sig must enter into an Agree relation with T2. Under the proposed analysis, covert cliticization to v* enables sig to enter into an Agree-relation with T in a higher clause. In (17), sig can enter into an Agree relation with T1 and can be bound by DP1 via Agree if DP1 is 3rd person. Notice that sig cannot enter into an Agree relation with T2 because sig is not close enough to T2. Notice also that the passive v is not a strong phase and hence sig-cliticization is unavailable at the relevant phase level. Hence, sig fails to be link with T2 as well as DP2 at the matrix CP phase level.

The current analysis also predicts the binding relation in (18), where sig can take as an antecedent the matrix subject Jón, but not the derived subject Mariú.

(18) Jóni heldur [að Mariú, hafi verið sagt [að þú taladir um sig*i/*j]]
   ‘John thinks that Mary has.SBJ been told that you talked.SBJ about REFL’
   (Hellan 1991:35)

The relevant structure is illustrated below in (19).

(19) [CP C [TP DP3 T3 [vP tDP3 sig+v* [vP V [CP Cdef [TP DP2 T2 [vP tDP2 v [vP V [XP tDP2 X [vP V [sig]]]]]]]]]]]

In (19), sig cannot enter into an Agree relation with T2, for the same reason as in (17). Notice, however, that the passive sentence is embedded as a SBJ complement of the matrix verb heldur. Therefore, at the matrix v*P phase level, sig is accessible from the matrix v* because the higher embedded SBJ C is defective. Thus, at the matrix v*P phase level, sig can undergo Clitic Climbing across all the way up onto the matrix v* from the most embedded v*. When the operation Agree by T3 takes place, sig receives the complete φ-set from the matrix subject DP3 mediated by T3.

---

8 In Beck and Johnson (2004), the head X is the source of HAVE part to the meanings in the double object frame. In Johnson (1991), XP is posited to be a kind of DP, and in Pesetsky (1995), it is PP. Its syntactic category is not important for our purposes here.
Let us next turn to the case in INFS. As we have pointed out in section 2, sig in INFS may take a derived subject of a passive as an antecedent when the relevant subject is passivized from the embedded subject position in ECM INFS, but not from the matrix object position in control INFS. The relevant examples in (4b) and (7) are repeated below as (20a-b).

(20a) María var sögð (af Jóni) [tj hafa látið [mig þvo sérj, *))
Mary was said (by John) have.INF made me wash.INF REFL
‘Mary was said (by John) that she had made me wash her.’

b. * Jóni var lofað (af Pétri) [að PRO raka sigj]
John.DAT was promised (by Peter) to shave REFL
‘John was promised (by Peter) to shave him.’

The question we have to address here is that why the derived subject Jóni cannot be a possible antecedent for sig although they are in a c-command relation in (20b). A crucial difference between (20a) and (20b) is that only the latter contains the CP phase, as illustrated below in (21).

(21a) [CP C [TP DP T2 [VP tDP v [VP V [TP tDP T1 [v*p tDP sig+v*]]]]]]

(21b) [CP C [TP DP T2 [VP tDP v [VP V [XP tDP X [CP Cdef [TP PRO T1 [v*p tPRO sig+v*]]]]]]]

It is a long-standing observation that ECM (exceptional Case marking)-infinitival T, which lacks C, also lacks φ-features (failing to value Case on DP) and independent tense. This means that non-finite T is not a potential probe for sig in ECM INFS. In (21a), no potential probe intervenes between the matrix T and sig which elicits on the higher embedded v*. Hence sig successfully agrees with T2 and receives the same φ-features as the derived subject DP via T2 at the matrix CP phase level. In (21b), however, T2 cannot enter into an Agree relation with sig. Given the fact that Icelandic PRO is case-marked, we assume that Agree takes place between PRO and non-finite T which inherits Agree-features from non-finite defective C in (21b). Thus, sig cannot enter into an Agree relation with T2 due to the same reason as in (17).

4.2. Non-c-commanding Subject Revisited

We have observed in section 2 that a non-c-commanding possessive serves as a possible antecedent for sig when the SBJ clause containing sig is the sentential complement of the nouns which assert propositions. The relevant example in (5a) is repeated below as (22).

(22) Trú Ólafs, að allar syndir sinar verði sér fyrligefnar, er bjargfóst. belief Ólafs that all sins REFL’s will.be.SBJ REFL forgiven is rockfirm
‘Olaf’s belief that all his sins will be forgiven him is rockfirm.’

As Maling (1984) points out, in (22), the antecedent Ólafs is a possessive DP modifying the noun trú and sig appears inside the SBJ complement to this noun. Given the fact that Olaf can be the antecedent for sig, she hints that the DP Olaf’s belief behaves like a matrix clause Olaf believes that ... for the purposes of antecedent-anaphor relations. As Ogawa (2001), Watanabe (2006), and Sigurðsson (2006) argue, it has been revealed in the literature that various functional projections exist between NP and DP. In order to capture the structural similarity between the DP structure and the CP structure, we propose that Icelandic nominals

---

9 See Sigurðsson (1991) for compelling arguments that PRO is case-marked in Icelandic.
have at least two layers of functional projections above NP and below DP, as shown in (23a).\(^{10,11}\)

\[(23) \text{a. } [\text{DP } D [\text{GP } G [a*P \text{ Ölafs} \text{ sig}+n* [\text{NP } \text{N } \text{CP } \text{def TP ... sig ...} \text{trú]} \text{telur}] \text{CP } \text{TP} \text{ sig} ...] \text{sig} ...] \text{sig} ...]

\[(23) \text{b. } [\text{CP } C [\text{TP } \text{Ölafur T} [v*P t\text{Ölafur} \text{ sig}+v* [\text{VP } \text{V } \text{CP } \text{def TP ... sig ...} \text{TEL}] \text{TEL} \text{sig} ...] \text{sig} ...] \text{sig} ...]

As you can see the similarity between the DP structure in (23a) and the CP structure in (23b), if the head noun trú moves above the possessive DP Ölafs, we can basically explain the examples like (22) in the same way that we give an account of the antecedent possibilities of sig in the previous section. Interestingly, Sigurðsson (2006) argues that the noun-genitive order in sentences like (22) is derived by raising the noun trú to the left of genitive.\(^{12}\) Thus, we assume that the head noun moves in the same way that the verb undergoes head-movement to T (to C) in Icelandic. Assuming that the head noun trú moves at least to the head of G projection and that the possessive DP may stay in situ, we can explain the LD use of sig, together with the word order, in (22). In (23a), sig in the SBJ complement must undergo cliticization to n*, which is a counterpart of v* in (23b).\(^{13}\) As T (inheriting Agree-features from C) Agrees with the subject Ölafur and sig in (23b), G (inheriting Agree-features from D), which is a genitive Case licenser, like T as a nominative Case licenser, Agrees with Ölafur and sig in (23a). Hence, sig receives the same φ-features as the possessive DP via G at the DP phase level and the LD use of sig in (22) is explained.

5. Some Consequences and Implications

5.1. Object Antecedent in Long-distance and Local Binding

Our Binding through Agree approach explains subject-orientation of LD sig. As pointed out by Thráinsson (1979, 2007), sig can take an object antecedent in local binding as in (24), but not in LD binding as in (25).

\[(24) \text{Jón, síndi Haraldí, fót á sigj.} \text{John showed Harold clothes for REF} \text{L} \text{‘John, showed Harold clothes for himself.’} \text{Thráinsson 1979:291)}

\[(25) \text{a. } \text{Jón, sagði Pétrij [að ég elskaði sig, v*].} \text{John told Peter that I loved REF} \text{L} \text{‘John told Peter that I loved him.’} \text{Reuland 2006:547)}

\[(25) \text{b. } \text{Ég, lofaði Ólafur [að PROj hjálpa sérj/hennjí] I promised Anne to help REF} \text{L}/\text{her} \text{‘I promised Anne to help her.’} \text{Thráinsson 2007:474)}

\(^{10}\) As in (22), we can observe multiple occurrences of sig in the SBJ complement. Discussion on how more than one sig can be interpreted under the Agree-based approach is, however, beyond the scope of this short paper. See Richards (1996) for the relevant discussion.

\(^{11}\) We are not claiming that this is the exact structure of Icelandic noun phrase. We claim that there have to be at least two pairs of phase heads and non-phase heads in Icelandic nominal structure like the familiar core sequence C – T – v* – V.

\(^{12}\) See Sigurðsson (2006) for the detailed analysis of the Icelandic noun phrase.

\(^{13}\) We need to modify our proposal in (8b) as follows:

(i) Icelandic reflexive sig is a clitic which undergoes Clitic Climbing onto v*/n* after Spell-Out to have its unvalued φ-features valued.
Let us first consider the example in (24). The relevant structure of (24) is illustrated in (26).  

\[
(26) \left[ \begin{array}{c}
\text{CP} C \left[ \begin{array}{c}
\text{TP} DP_3 T \left[ \begin{array}{c}
*P \text{DP}_3 \text{ sig} + v^* \left[ \begin{array}{c}
\text{VP} DP_2 V \left[ \begin{array}{c}
\text{XP} \text{DP}_2 X \left[ \begin{array}{c}
sig \text{ clothes for sig} \right] \right] \right] \right] \right] \right] \right]
\end{array} \right] \right] \]
\]

In (26), sig enters into an Agree relation with a functional head with the complete $\varphi$-set in either of the following two ways. The first option is Agree with V. Assuming that inherent Case assigner X does not block the operation Agree, sig may Agree with V together with the indirect object DP, since no potential probe intervenes in between, yielding an object antecedent in local binding. The second option is Clitic Climbing onto $v^*$. At the $v^*P$ phase level, sig may undergo cliticization to $v^*$ and at the CP phase level, it receives the same $\varphi$-features as the subject DP, via Agree with T.

In LD binding, however, sig in SBJS and INFS cannot Agree with the direct object via V. The relevant structure of (25a) and (25b) is illustrated in (27).

\[
(27) \left[ \begin{array}{c}
\text{CP} C \left[ \begin{array}{c}
\text{TP} DP_3 T_2 \left[ \begin{array}{c}
*P \text{DP}_3 \text{ sig} + v^* \left[ \begin{array}{c}
\text{VP} DP_2 V \left[ \begin{array}{c}
\text{XP} \text{DP}_2 X \left[ \begin{array}{c}
\text{CP} C_{\text{def}} \left[ \begin{array}{c}
\text{TP} DP_1/PRO \right] T_1
\end{array} \right] \right] \right] \right] \right] \right] \right]
\end{array} \right] \right] \]
\]

At the embedded $v^*P$ phase level, sig enters into an Agree relation with $T_1$ together with DP$_1$/PRO, and hence sig ends up being bound by DP$_1$/PRO. It cannot Agree with the matrix V because T is the closer Probe to sig at this phase level. If Clitic Climbing takes place prior to Agree, sig can undergo cliticization onto $v^*$ at the next $v^*P$ phase level because the embedded C is defective and does not block the covert clitic movement of sig. Since sig is no longer in the search domain of V, it cannot be bound by the direct object via Agree with V. Hence, sig has no chance to enter into an Agree relation with V together with the direct object in (25a) and (25b).

It has been a long-standing question why sig cannot take the matrix object as a LD antecedent although it is structurally closer to sig than the matrix subject. If the current binding through Agree approach is on the right track, this is no longer a special property of LD sig.

5.2. Indicative C Blocks Clitic Climbing

Our analysis predicts that sig may take LD antecedents insofar as the intervening clauses are SBJS because it can always escape out of the SBJ clauses by covert cliticization. As we expect, in the example like (28), which has four SBJ clauses, the subject in each clause can be a possible binder for sig in the most embedded SBJ clause.

\[
(28) \left[ \begin{array}{c}
\text{IND} \left[ \begin{array}{c}
\text{DP}_4 \left[ \begin{array}{c}
\text{SBJ} \text{DP}_3 \left[ \begin{array}{c}
\text{SBJ} \text{DP}_2 \left[ \begin{array}{c}
\text{SBJ} \text{DP}_1 \left[ \begin{array}{c}
sig
\end{array} \right] \right] \right] \right] \right] \right] \right]
\end{array} \right]
\right]
\]

Ólafur Ragnar says that Steingrimur, haldi að Jóhanna vori að Ó. R. says.IND that S. thinks.SBJ that J. hopes.SBJ that Guðni muni svíkja sigj/him/herself. ‘Ólafur Ragnar says that Steingrimur thinks that Jóhanna hopes that Guðni will betray her/him/himself.’

We further predict that sig-cliticization will be blocked when some strong phase intervenes between sig and $v^*$. This prediction is in fact borne out as shown in (29).

---

14 We assume X assigns inherent Case to the direct object DP.
As Sigurðsson (1990:334) suggests, it has been traditionally considered that LD sig normally takes the subject in the highest clause as an antecedent. The example in (29) shows, however, that the topmost subject cannot be a possible antecedent for LD sig when IND C intervenes in between. This fact can be immediately accounted for under our syntactic approach. Given that IND C is a strong phase. Since Clitic Climbing cannot move across the lower IND C, sig cannot Agree with T in the highest clause, hence the topmost subject DP₄ cannot be the antecedent for sig.

5.3. Another Riddle Resolved: Long-distance sig in Adjunct Clause

The Agree-based analysis resolves another riddle. Let us consider the following sentences.

(30) a. María er hér enn þó að þegar skammi *sig/hana;
   Mary is here still although I scold.SBJ REFL/her
   ‘Mary is still here, although I scold her.’  (Sigurðsson 1990:311)

b. Ólafur segir að María sé her enn þó að þegar skammi sig
   Olaf says.IND that Mary is.SBJ here still although I scold.SBJ REFL
   ‘Olaf says that Mary is still here, although I scold him/*her.’  (Sigurðsson 1990:311)

c. *She, is still here, although I scold María;

The matrix subject cannot serve as an antecedent for sig in the SBJ adverbial clause in (30a), while it can in (30b). As Maling (1984) suggests, LD sig in adverbial clauses can find an antecedent only in a domain within which the clause containing the reflexive is adjoined. The crucial difference between (30a) and (30b) is that the adverbial clause is adjoined to the matrix clause in the former, but the embedded clause in the latter. In (30a), sig cannot establish the antecedent-anaphor relation with the matrix subject María because T in the adverbial clause, which is adjoined to the matrix vP, intervenes between the matrix T and sig. In (30b), by contrast, the matrix T agreeing with the subject Ólafur can enter into an Agree relation with sig since the SBJ clause containing sig is transparent for Clitic Climbing. This defective property of the SBJ C enables sig to undergo cliticization to the matrix v* where sig Agrees with the matrix T together with Ólafur.

As Chomsky (2008:141-142) suggests that Condition (C) could be formulated as a probe-goal relation... Condition (A) does not involve c-command, but rather Agree, these facts imply that Condition A of Binding Theory must not be the antecedent-anaphor relation in terms of c-command between them. In (30c), the R-expression inside an adverbial clause induces a Condition C violation. This means that a coreferent DP she c-commands Mary. Thus, the LD use of sig in SBJS is a piece of strong evidence for the Binding through Agree approach.

6. Conclusion

We have argued that LD binding in Icelandic is best analyzed as a syntactic binding, and demonstrated that the Agree-based approach successfully accounts for the problematic facts under the earlier analysis in terms of c-command. Specifically, we have shown that (i) the
simple reflexive sig must enter into an Agree relation with a functional head agreeing with its antecedent to have its interpretable but unvalued φ-features valued, (ii) sig may Agree with a functional head in the higher projection by Clitic Climbing, and (iii) the SBJ C and the non-finite C are defective in the sense that they lack PIC effect. Given this, sig may take a LD antecedent insofar as it can undergo cliticization out of the SBJ and/or infinitival clauses. We can thus derive the LD binding behavior of sig in Icelandic without any additional non-structural constraint for sig in SBJs like discourse factors.

References


