

On the Syntax of Cross-Categorial Reflexive Marking in Khalkha Mongolian

Zhiyu Mia Gong¹ and Miloje Despić²

¹University of California, Santa Cruz

²Cornell University

Abstract

This paper investigates *cross-categorial reflexive marking* (CCRM) in modern Khalkha Mongolian, where the reflexive possessive (REFL.POSS) morphology appears in nominal and certain clausal domains to license subject-oriented interpretation. We argue that CCRM reduces to binding: REFL.POSS realizes agreement with a null minimal pronoun bound from ν , the head which introduces the subject. This minimal-pronoun analysis unifies reflexive and control-like patterns associated with CCRM. Furthermore, the null minimal pronoun must occupy a position targeted by overt agreement. In Khalkha, overt agreement is confined to nominal(ized) domains, and there is no verbal agreement. Consequently, the minimal pronoun—and thus REFL.POSS—is licensed only inside nominals and nominalized clauses. These results link CCRM to both binding and independently attested agreement mechanisms, suggesting that minimal pronouns in Khalkha require both binding from ν (e.g., Kratzer 2009) and licensing via overt agreement with D.

1 Introduction

Modern Khalkha Mongolian has a locally subject-oriented reflexive possessive (REFL.POSS) morpheme which is licensed across nominal (1-2) and clausal (3-4) domains. This morphology is ϕ -invariant and has the form of a long vowel -AA (subjected to vowel harmony). Its presence is obligatory in all four examples in order to achieve the intended interpretation indicated with the translations and coindexing.

(1) Reflexive

Emč-Ø₁ (ni) Dorj-id₂ (tolin-d) [e öör-iig *(-öö)]_{1/*2}
doctor-NOM₁ (3.POSS) Dorj-DAT₂ (mirror-DAT) [e SELF-ACC *(-REFL.POSS)]_{1/*2}
kharuul-san. ¹
show-PST

‘The doctor₁ showed to Dorj₂ [self’s self]_{1/*2} (in the mirror).’

(2) Possessive reflexive

¹The following glosses and abbreviations are used throughout the paper: 1/2/3=first/second/third person; ABL=ablative; ACC=accusative; C=complementizer; COMIT=comitative; COP=copula; CVB=converb; DAT=dative; GEN=genitive; HABIT=habitual; EP=euphonic material without semantic content; FOC=focus marker; NOM=nominative; NPST=nonpast; POSS=possessive; PST=past tense; PTCP=participle; Q=question particle; REFL.POSS=reflexive possessive; SG=singular.

Jon- \emptyset_1 Meri-d₂ [$e_{1/*2}$ nom *(-oo)] ög-sön.
 John-NOM₁ Mary-DAT₂ [$e_{1/*2}$ book *(-REFL.POSS)] give-PST
 ‘John₁ gave Mary₂ [self’s_{1/*2} book].’

(3) Adjunct clause

Bat- \emptyset_1 Dorj-oos₂ [$e_{1/*2}$ Mongol-d bai-kh -d *(-aa)] ene
 Bat-NOM₁ Dorj-ABL₂ [$e_{1/*2}$ Mongol-DAT be-NPST.PTCP -DAT *(-REFL.POSS)] this
 nom-ig aw-san.
 book-ACC buy-PST

‘Bat₁ bought this book from Dorj₂ [when $e_{1/*2}$ was in Mongolia].’

(4) complement clause

Bat- \emptyset_1 Dorj-oos₂ [$e_{1/*2}$ šalgalta-d tents-sen *(-ee)] ol.j
 Bat-NOM₁ Dorj-ABL₂ [$e_{1/*2}$ exam-DAT pass-PST.PTCP *(-REFL.POSS)] find.CVB
 med-sen
 know-PST

‘Bat₁ found out from Dorj₂ that he_{1/*2} passed the exam’

Across the four environments (1-4), the REFL.POSS morphology signals the presence of a phonologically null argument, tentatively marked as e , whose interpretation depends on its antecedent which is another nominal expression in the sentence. In (1), the direct object containing e is a polymorphemic reflexive pronoun [e *öör-üg-öö*], which literally translates to “self’s self-ACC”. This complex anaphor is strictly subject-oriented: It must be co-construed with the subject *emč* (‘doctor’). In (2), the direct object is a possessive DP with *nom* (‘book’) as the possessee and e as a possessive anaphor. The REFL.POSS morphology indicates that the null possessive anaphor must be subject-oriented. In (3-4), the e elements are not possessive anaphors but instead are null subjects whose anaphoric interpretation is signaled by the REFL.POSS morphology: In (3), the morphology appears on a temporal adjunct clause with a null subject e . The embedded adjunct clause subject is obligatorily co-construed with the matrix subject *Bat*, and cannot be co-construed with the non-subject *Dorj*. In (4), the REFL.POSS morphology appears on an embedded complement clause with a null subject e . Like (3), the embedded subject in (4) must be co-construed with the matrix subject but not the non-subject antecedent.

We use the terminology *cross-categorical reflexive marking* (CCRM) to describe the phenomenon in (1-4). The term remains neutral with respect to the underlying syntactic explanation, while highlighting, descriptively, the distribution of the reflexive morphology itself.

(5) Cross-Categorical Reflexive Marking (CCRM)

The phenomenon where the reflexive possessive morphology is licensed in both:

- a. nominals in canonical binding configurations (reflexive binding, binding of possessors); and
- b. embedded clauses (adjunct clauses, complement clauses) as a reference-tracking device (cf. switch reference, Jacobsen 1967).

CCRM is an areal phenomenon widely attested in other languages of the Mongolic family including Dagur (Üjiyediin Chuluu 1994: 16, 27), Santa (Field 1997: 379), Buryat (Skrjbnik 2003: 116-7); as well as Tungusic languages including Udihe (Nikolaeva & Tolskaya 2011: 790), Even (Matić 2016: 345), Evenki (Nedjalkov 2014: 49), and Orochen (Whaley 2024: 203). Although cross-linguistically observed in the Northeast Asia sprachbund,² the grammatical mechanism which conditions CCRM remains obscure and, to the best of our knowledge, has not yet been systematically investigated.

This article contributes a unified analysis for the syntax and interpretation of CCRM, based on a detailed case study of Khalkha Mongolian. We argue that CCRM constructions are uniformly realized by a phonologically null argument (labeled *e* in (1-4)), which we identify as a minimal pronoun (Kratzer 2009). The distribution of this element is constrained by two conditions: a syntactic binding requirement and a morphological licensing requirement. First, the syntactic source of CCRM is binding. In all configurations exemplified in (1-4), the minimal pronoun (i.e., *e*) is bound from *v*, the functional head which introduces the local subject. This analysis provides a unified explanation for CCRM's subject orientation and the fact that it is present in both canonical binding (1-2) and subject-control-like (3-4) environments. Second, because the minimal pronoun in Khalkha lacks an overt phonological exponent, it must be licensed by overt agreement morphology. Licensing occurs when the minimal pronoun enters into an Agree relationship with a ϕ -probe on a functional head. This relation is uniformly realized by the special agreement morphology -AA, whose invariant shape reflects the featureally impoverished status of the goal (Kratzer 2009, Sigurðsson 2008, cf. anaphor agreement effect, Rizzi 1990, Woolford 1999). This part of the analysis explains why CCRM is restricted to nominal domains in Khalkha: this language has overt nominal agreement but lacks verbal agreement. As a result, the minimal pronoun is licensed only inside nominals and nominalized clauses (DPs) but not in verbal domains. For a bound anaphor to appear in a verbal domain, the minimal pronoun must be nested within a DP, yielding a polymorphic reflexive.

Our analysis, based on previously under-investigated data, provides a single account for several superficially distinct constructions. It refines the typology of bound pronouns, showing that Khalkha minimal pronouns can surface as a part of a reflexive or as an element sharing properties with a controlled PRO. Further, our proposal that Khalkha minimal pronouns are obligatorily null and require overt ϕ -agreement for licensing links their distribution directly to the lexical inventory and morphosyntactic profile of the language.

The rest of this article is structured as follows. In Section 2, we develop an analysis that explains the morphosyntactic source of CCRM. We argue that the REFL.POSS morphology realizes a minimal pronoun located in a thematic position within the nominal domain (e.g., possessors, subjects). In Section 3, we examine the syntactic domain(s) relevant for binding and subject orientation. In Section 4, we examine the clausal aspect of CCRM, focusing on two subcases: adjunct clauses and complement clauses. We note that the distribution of CCRM in the Khalkha clausal domain is selective: only certain same-subject clauses allow CCRM, others disallow CCRM even under same-subject interpretation. We propose that this is the consequence of the two licensing conditions of minimal pronouns articulated above. We show that this analysis also makes a series of predictions, borne out by independent data. Section 5 concludes the paper.

²The switch-reference system reported in Middle Korean (King 2023) might also originate from similar syntactic mechanism. Thanks to Ross King and John Whitman for discussion.

2 The Morphosyntactic Source of CCRM

We suggest that all instances of REFL.POSS morphology in Khalkha derive from a single source: the syntactic presence of a phonologically null minimal pronoun. This pronoun occupies a thematic position within the nominal domain (e.g., as a possessor or a subject). It is licensed when it enters into an Agree relationship with a ϕ -probe hosted on the functional head D, which results in the REFL.POSS morphology. The key evidence for this analysis comes from the internal structure of the polymorphemic reflexive pronoun *öör-öö*, which we focus on in this section. Deconstructing this element reveals the syntactic presence of the minimal pronoun and establish it as the fundamental building block for all CCRM constructions.

2.1 Background on the Subparts of Polymorphemic Reflexive

Before proceeding to the analysis, we provide some additional background on the polymorphic reflexive to serve as the basis of the subsequent discussion. The polymorphic reflexive pronoun *öör-öö* assumes a composite form, consisting of the SELF-NP *öör* (Proto-Mongolic **öxen* <**öpen* Janhunen 2003b:20; **öxer* Lefort 2020: 589) and the REFL.POSS morpheme *-AA*, subjected to vowel harmony. As shown in (6), its form remains the same regardless of the ϕ -features of its antecedent.

- (6) $Bi_1/$ $\check{C}i_1/$ Bat_1 *öör-iig* **(-öö)*₁ *šüümjil-sen.*
 1SG.NOM₁/ 2SG.NOM₁/ Bat.NOM₁ self-ACC **(-REFL.POSS)*₁ criticize-PST
 ‘I₁/you₁/Bat₁ criticized (self’s) self₁.’

Furthermore, as shown in (1), repeated below as (7), *öör-öö* is subject-oriented.

- (7) $Em\check{c}-\emptyset_1$ (ni) $Dorj-id_2$ (tolin-d) [*e öör-iig* **(-öö)*]_{1/*2}
 doctor-NOM₁ (3.POSS) Dorj-DAT₂ (mirror-DAT) [*e SELF-ACC* **(-REFL.POSS)*]_{1/*2}
kharuul-san.
 show-PST
 ‘The doctor₁ showed to Dorj₂ [self’s self]_{1/*2} (in the mirror).’

The subject binder of *öör-öö* must also be local. In (8), there are two potential subject antecedents for the reflexive pronoun *öör-öö*. Here, the reflexive pronoun can only be bound by the local subject, and cannot be bound by the non-local subject.

- (8) $Bat-\emptyset_1$ [_{CP} $Dorj-iig_2$ [*e öör-iig* **(-öö)*]_{1/*2} *khural deer* *šüümjil-sen*
 Bat.NOM₁ [_{CP} Dorj-ACC₂ [*e SELF-ACC* **(-REFL.POSS)*]_{1/*2} *meeting on* *criticize-PST*
gej] *khel-sen.*
 C] *say-PST*
 ‘Bat₁ said that Dorj₂ criticized self’s self_{1/*2} at the meeting.’

The binding property of the polymorphemic reflexive *öör-öö* is stated in (9):

- (9) *öör-öö* (SELF-REFL.POSS) is locally subject-oriented.

Importantly, note that in all the examples above, the REFL.POSS morpheme is required. The SELF-NP *öör* generally may not stand alone (e.g., Tserenpil & Kullmann 2015; Poppe 1974). The monomorphemic *öör* ‘self’ is ungrammatical being in an argument position as a bound anaphor. Example (10)-(11) illustrate this point using local and long-distance antecedents.

- (10) * Bat- \emptyset_1 **öör-iig₁** šüümjil-sen.
 Bat-NOM SELF-ACC criticize-PST
 Int. ‘Bat₁ criticized self₁.’
- (11) * Bat- \emptyset_1 [_{CP} Dorj-iig₂ **öör-iig_{1/2}** khural deer šüümjil-sen gej] khel-sen.
 Bat-NOM [_{CP} Dorj-ACC SELF-ACC meeting on criticize-PST C] say-PST
 Int. ‘Bat₁ said that Dorj₂ criticized self’s self*_{1/2} at the meeting.’

In other words, Khalkha Mongolian has a polymorphemic reflexive pronoun *öör-öö* roughly meaning ‘self’s self’, but lacks a simplex, monomorphemic reflexive pronoun *öör* ‘self’. In this respect, Khalkha Mongolian contrasts with many languages in which the ‘self’s self’-type reflexives are attested. In (12), we compare several languages with similar reflexive pronoun inventory as Khalkha. All languages in (12) except for Khalkha Mongolian have a simplex reflexive ‘self’ in addition to the polymorphemic reflexive.

- (12) ‘self’s self’-type reflexives across languages ³

| | Complex Reflexive (‘self’s self’-type) | | Simplex Reflexive | |
|--------------------------|--|---------------|-------------------|-------------|
| Japanese | <i>zibun zisin</i> | ‘self self’ | <i>zibun</i> | ‘self’ |
| Korean | <i>caki-casin</i> | ‘self-self’ | <i>caki/casin</i> | ‘self’ |
| Icelandic | <i>sjálfan sig</i> | ‘self self’ | <i>sig</i> | ‘self’ |
| Norwegian | <i>seg selv</i> | ‘self self’ | <i>seg</i> | ‘self’ |
| Dutch | <i>zichzelf</i> | ‘self self’ | <i>zich</i> | ‘self’ |
| Khalkha Mongolian | <i>öör-öö</i> | ‘self’s self’ | \emptyset | \emptyset |

Why do reflexive pronouns in Khalkha Mongolian uniformly take a complex, polymorphemic form and lack monomorphemic counterparts? In the subsequent sections, we argue that this follows from independent morphosyntactic properties of the language. Our proposal is that Khalkha reflexives have the structural blueprint of a possessive DP, and their obligatorily polymorphemic shapes result from three factors: i) *öör* is a bare NP (§ 2.2), ii) Khalkha is a DP language (§ 3), and iii) the bound minimal pronoun must be licensed by overt agreement (§ 4.3.2).

2.2 An NP analysis of *öör*

As presented in § 2.1, the SELF-NP *öör* generally may not stand alone. It is ungrammatical to use the SELF-NP independently as a bound anaphor without the possessive morphology:

- (13) =(10)

* Bat- \emptyset_1 **öör-iig₁** šüümjil-sen.
 Bat-NOM SELF-ACC criticize-PST
 Int. ‘Bat₁ criticized self₁.’

There is a crucial exception to this generalization. Across Mongolic languages, including Khalkha, the SELF-NP *öör* may appear without any postnominal possessive morphology if and

³Data from this table are based on Koster & Reuland (1991), Charnavel et al. (2017). The following additional sources are used for individual languages: Icelandic - Sigurjonsdottir (1992), Maling (1984) Korean - Yang (1989) Japanese - Katada 1991 Dutch - Koster (1984)

only if it is in genitive case. A typical example is given in (14). Notice here that although REFL.POSS is not required on the possessor itself, it is obligatory on the possessee.

- (14) Bi öör-iin nom *(-oo) unš-san.
 1S.NOM SELF-GEN book *(-REFL.POSS) read-PST
 ‘I₁ read self’s₁ book.’

Note that it is not the case that genitive case is incompatible with the REFL.POSS morpheme. The following example shows that the polymorphemic reflexive *öör-öö* can appear in the prenominal possessor position in genitive case. Note in addition that in this case the possessee *nom* (‘book’) is no longer obligatorily marked with the REFL.POSS morphology as in (2) and (14), and can simply appear in structural accusative case.

- (15) Bi₁ öör-iin-kh-öö₁ nom -ig unš-san.
 1S.NOM SELF-GEN-EP-REFL.POSS book -ACC read-PST
 ‘I₁ read self’s₁ book.’

On the basis of the distribution of the SELF-NP and the REFL.POSS morphology in (2), (14), and (15), we make the following generalization:

- (16) The SELF element *öör* cannot stand alone and must be accompanied by postnominal possessive morphology in all environments *except* in genitive case (GEN).

This generalization raises the question of what exactly is the morphosyntactic status of *öör-iin*, and how it differs from *öör-iin-kh-öö* in (15). We will suggest that *öör-iin* without REFL.POSS morphology is not an argumental possessor, but is instead a modifier. In other words, it does not receive any θ -role. In contrast, *öör-iin-kh-öö* is a proper polymorphemic reflexive which occupies the argumental possessor position and receives a possessor θ -role. The crucial evidence comes from a fine grained analysis of genitive “case” morphology. First, the arguments that receive structural genitive case in Khalkha Mongolian are not limited to possessors (17). Genitive case may be used to license a variety of arguments including embedded subjects (18) and complements of postpositions (19).

- (17) **Bat-in** nom
Bat-GEN book
 ‘Bat’s book’

- (18) [**Činii** ir-sen-iig] bi saya med-lee.
 [**2S.GEN** come-PST.PTCP-ACC] 1S.NOM just.now know-PST
 ‘I just learned [that you came]. ’ (Tserenpil & Kullmann 2015:394)

- (19) **zam-in** daguu
road-GEN along(side) of
 ‘along the road’

The genitive morphology is also widely used with nominal modifiers and apparently licenses them.⁴ The following set of three examples illustrate this point.

⁴These modifiers with genitive morphology may be regarded as adjuncts or parts that form compounds. We focus

(20) Genitive case morphology licenses modifiers

- a. **namr*(-in)** boroo
autumn*(-GEN) rain
'autumn rain'
- b. **talkh*(-ni)** guril
bread*(-GEN) flour
'bread flour'
- c. **Altai*(-n)** uul
Altai*(-GEN) mountain
'Altai mountain'

We argue that the modifier-licensing genitive, exemplified in (20), is the source for the genitive morphology on *öör-iin* in (14). In (14), the prenominal phrase *öör-iin* is not a possessor, but instead is a non-argumental modifier, which serves as an intensifying element (cf. Middle English *self*; Mitchell 1985, Rooryck & Vanden Wyngaerd 2011). As a result, *öör-iin* is always optional and may not function independently as a possessor without the REFL.POSS morphology.

Evidence from nominalized clauses demonstrates that the genitive morphology *-iin* on the phrase *öör-iin* in (14) is not a true structural case assigned to (possessor) arguments. In Khalkha Mongolian, a variety of subordinate clauses allow for genitive subjects. This was exemplified via the nominalized complement clause in (18). Relative clause (RC) subjects may also be in genitive case. This is exemplified in (21).⁵

- (21) [Dorj **-iin** —₁ unš-san] nom₁ (ni)
[Dorj **-GEN** read-PST.PTCP] book 3.POSS
'the book [that Dorj read]'

Crucially, genitive subjects are licensed only in clauses that are either themselves nominalized or have a structurally close-by D head, as in RCs. Fully finite CPs headed by the complementizer *gej*, such as (22), disallow genitive subjects.

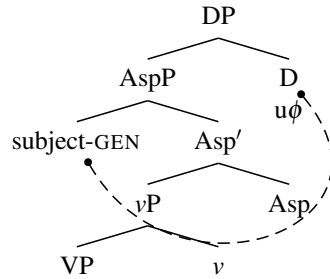
- (22) *Bat-∅ [CP Dorj **-iin** öčigdör ene nom-ig unš-san gej] khel-sen
Bat-NOM [CP Dorj **-GEN** yesterday this book-ACC read-PST C] say-PST
Int. 'Bat said that Dorj read this book yesterday.'

The distribution of genitive subjects in Khalkha is expected under Kornfilt & Whitman's (2012) and Miyagawa's (2011) analysis, in which a nominal functional head (e.g., D) is responsible for the assignment of genitive case on embedded subjects. In the context of embedded complement clauses, the D head is additionally responsible for nominalization. The licensing of genitive subjects in nominalized complement clauses and RCs would proceed as depicted in (23) and (24), respectively.

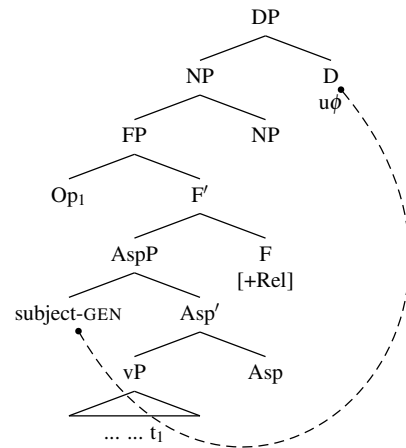
on their non-argumental status here and leave a detailed investigation into these structures to future work. We thank an anonymous reviewer for helpful discussions on this point.

⁵In both nominalized complement clauses and in RCs, the embedded subject can appear in cases other than genitive. For example, in nominalized complement clauses the subjects can be in nominative or accusative, and in relative clauses the embedded subjects can be in nominative. We focus on the distribution of genitive subjects here and set the subject case alternation aside.

(23) Complement clauses



(24) Relative clauses



The D-licensing analysis of genitive subjects implies that in Khalkha, genitive case can be a structural case assigned to subject arguments of embedded clauses. If *öör-iin* were truly argumental and *-iin* were the exponent of a structural genitive case, then we would expect this element to be licensed in similar embedded subject positions.

This prediction is not borne out. Consider the embedded nominalized clause construction. When the embedded subject is co-referent with the matrix subject – call this a *same-subject* construction – REFL.POSS is used on the entire embedded clause. This usage was discussed in Section 1, example (4), with another similar example presented below.

- (25) Bat- \emptyset_1 [e_1 šalgaltan-d tents-sn -ee] med-lee.
 Bat-NOM₁ [e_1 exam-DAT pass-PST.PTCP -REFL.POSS] know-PST
 ‘Bat₁ knew that he₁ passed the exam.’

Khalkha allows other strategies to express the same-subject interpretation in (25): Instead of an empty subject, an overt polymorphemic reflexive pronoun *öör-öö* may also appear in the embedded subject position, with regular accusative case marking rather than the REFL.POSS morphology appearing on the entire embedded clause.

- (26) ? Bat- \emptyset_1 [**öör-iin-kh-öö**₁ šalgaltan-d tents-sn -iig] med-lee.
 Bat-NOM₁ [**self-GEN-EP-REFL.POSS**₁ exam-DAT pass-PST.PTCP -ACC] know-PST
 ‘Bat₁ knew that self₁ passed the exam.’

Crucially, it is ungrammatical for *öör-iin* to occupy the embedded subject position in such an environment. In (27a), the entire complement clause is marked with accusative case morphology. The embedded subject is *öör-iin*. This sentence is ungrammatical. Similarly, in (27b), the entire complement clause is marked with REFL.POSS morphology, which, in the canonical case (25), would have successfully generated the same-subject interpretation. However, this sentence is ungrammatical.

- (27) a. cf. (26)

- * Bat- \emptyset_1 [**öör-iin**₁ šalgaltan-d tents-sn -iig] med-lee.
 Bat-NOM₁ [**self-GEN**₁ exam-DAT pass-PST.PTCP -ACC] know-PST
 Int. ‘Bat₁ knew that self₁ passed the exam.’

b. cf. (25)

* Bat- \emptyset ₁ [**öör-iin**₁ šalgaltan-d tents-sn -ee] med-lee.
 Bat-NOM₁ [**self-GEN**₁ exam-DAT pass-PST.PTCP -REFL.POSS] know-PST
 Int. ‘Bat₁ knew that self₁ passed the exam.’

The ungrammaticality of both examples in (27) is expected under our analysis that *öör-iin* is non-argumental. Since *öör* is a bare NP and unable to function independently as an argument, it is incapable of bearing structural genitive case typically assigned by D to embedded subject arguments. Since it is a nominal modifier, it is also unable to serve as a modifier in the verbal/clausal domain. This analysis predicts that *öör-iin* is always optional and may not appear in argument positions, which is borne out in Khalkha Mongolian.

The syntactic status of the complex prenominal reflexive phrase *öör-iin-kh-öö* in (15) is also immediately explained: Unlike *öör-iin*, *öör-iin-kh-öö* is argumental. Thus, it can be licensed in typical argument positions like possessor or subject positions. The genitive case morphology on the complex element *öör-iin-kh-öö* is a structural genitive case used to license arguments.

The analysis suggests that *öör* by itself is not argumental, but *öör-öö* is. This allows us to further conclude that the SELF-NP *öör* is indeed structurally deficient – it may never function independently as an argument without the help of the postnominal possessive morphology. The apparent exception to this generalization, *öör-iin*, where a bare SELF-NP *öör* appears in “genitive case” without the help of the postnominal possessive morphology, turns out to not be an exception after all – here, the genitive morphology is a nominal modifier licenser and does not signal structural case assignment.

2.3 A Minimal Pronoun Analysis

In this section, we present our analysis of the REFL.POSS morphology. The REFL.POSS morpheme, **-xA/n* (<*-*pA/n*), is developed diachronically from the common Mongolic SELF-noun and likely emerged early in the history of the language family. According to Janhunen (2003b), in Proto-Mongolic, the SELF-noun was already frequently followed by the REFL.POSS morphology, resulting in the polymorphemic form. This form is also attested in Middle Mongol (Rybatzki 2003) and Written Mongol (Poppe 1974), two early predecessors of modern Khalkha Mongolian.

The REFL.POSS morphology and the standard possessive enclitics are in complementary distribution. The standard possessive enclitics agree with the possessor in person and number, as shown in (28).

(28) Khalkha Mongolian nominal (possessive) pronoun paradigm

| | genitive pronouns | possessive enclitics |
|-----|-------------------|----------------------|
| 1SG | <i>minii</i> | <i>mini</i> |
| 2SG | <i>činii</i> | <i>čini</i> |
| 3SG | <i>tüünii</i> | <i>ni</i> |
| 1PL | <i>manai</i> | <i>mani</i> |
| 2PL | <i>tanai</i> | <i>tani</i> |
| 3PL | <i>tednii</i> | <i>ni</i> |

These enclitics attach to the possessee noun. ⁶For example:

(29) nom mini
book 1S.POSS
'my book'

(30) nom ni
book 3.POSS
'his/her book'

The REFL.POSS morpheme cannot co-occur with these ϕ -agreement enclitics, regardless of the order of morphemes:

(31) * nom-oo ni
book-REFL.POSS 3S.POSS

(32) * nom ni-oo
book 3.POSS-REFL.POSS

We propose that this complementary distribution arises because both morpheme types are exponents of the same functional head, D. Following previous analyses of nominal structure (Szabolcsi 1981, 1983, 1994, Kayne 1994, Despić 2011, 2013), we assume that possessive DPs are headed by a D which takes a PossP complement. The possessor is introduced in Spec PossP. In standard possessive constructions with a null possessor, the uninterpretable, unvalued ϕ -features ($u\phi[]$) on D establish an Agree relation with a null pronoun, *pro*, in Spec PossP. The valued features on D are then spelled out as the corresponding enclitic, such as *ni* for the 3rd person.

⁶The morphosyntactic status of Khalkha possessive enclitics is a subject of ongoing investigation. Gong (2022) reports that first- and second-person enclitics function pronominally and exist in complementary distribution with overt genitive possessors. The first-person enclitic does not appear when there is an overt first person genitive pronoun *minii* in the same possessive DP:

(1) cf. (29)

Bat- \emptyset minii nom-uud-ig (*mini) unš-san.
Bat-NOM 1S.GEN book-ACC (*1S.POSS) read-PST

Intended 'Bat read my books.'

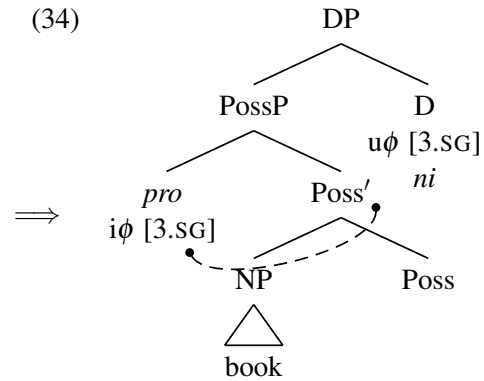
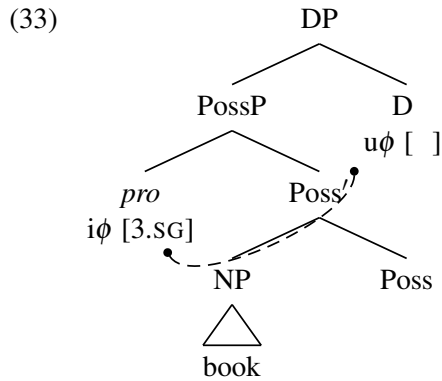
(based on Gong 2022: 31)

Third person enclitic *ni*, in contrast, does co-occur with the possessor and is frequently optional if the possessor is overt (44). However, subsequent research (Lim 2025) suggests that for at least some speakers, first- and second-person enclitics do behave as agreement markers and can co-occur with the first and second person genitive pronouns:

(2) Či minii nom-ijg mini unš-san.
2S.NOM 1S.GEN book-ACC 1S.POSS read-PST
'You read my book.'

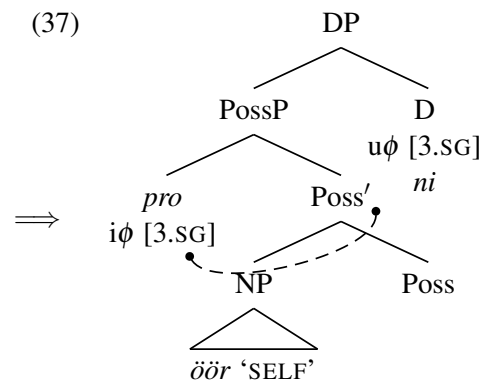
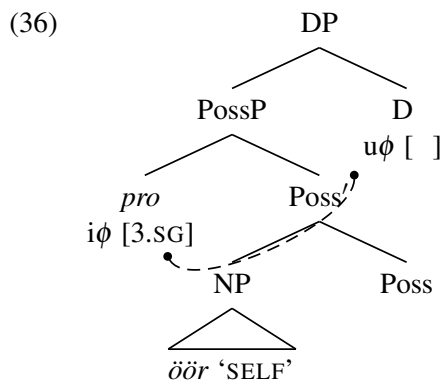
(based on Lim 2025: 391)

Taken together, these works suggest that the paradigm is non-uniform across speakers and variants. The nature of this variation is left for future work. In the current paper, we assume that it is the ϕ -probe on D that is responsible for the exponent of the ϕ -features on the postnominal enclitic: D Agrees with the possessor and spells out its features on D. Whether this morphology itself is suffix-like or clitic-like does not affect the central analysis presented here.



This analysis extends to constructions where the “possessee” is the SELF-noun *öör*, as in *öör ni* ‘his/her self’, which appears to be able to function as a bound pronoun that requires a non-subject antecedent (35).⁷

- (35) Emč-Ø₁ (ni) Dorj-id₂ (tolin-d) [*e öör-iig ni*]*_{1/2} kharuul-san.
 doctor.NOM (3.POSS) Dorj-DAT (mirror-DAT) [*e SELF-ACC 3.POSS*]*_{1/2} show-PST
 ‘The doctor₁ showed to Dorj₂ his self*_{1/2} (in the mirror).’



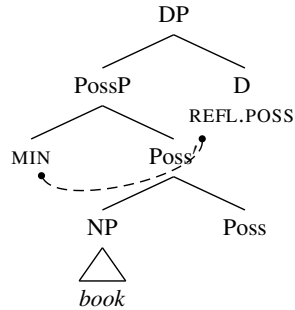
We posit that the REFL.POSS morphology is the exponent of the same D head. In this case, however, D Agrees with a different null possessor in Spec,PossP: a minimal pronoun MIN born without ϕ -features rather than a *pro* with a full set of ϕ -feature values. Agreeing with the minimal pronoun results in the REFL.POSS morphology spelled out on D.

⁷An anonymous reviewer asked why the antecedent of *öör ni* does not show subject orientation and is limited to direct objects, in contrast to *öör-öö* in (1). It seems to us that a potential avenue towards explaining why *öör-öö* and *öör ni* are in a complementary distribution is to assume some type of competition mechanism. For instance, Safir’s (2004) “Form to Interpretation Principle” (FTIP) regulates the distribution of reflexives, pronouns and R-expressions according to some dependency scale (e.g., SIG-SELF » pronoun-SELF » SIG » pronoun » R-expression). It compares competing derivations based on alternative numerations containing more dependent forms. The effect of the FTIP, in a nutshell, is that a more dependent form always outcompetes a less dependent form to represent the dependent identity reading. Thus, the reason why *öör ni* is unavailable exactly in contexts in which *öör-öö* is required, is that *öör-öö* is a more dependent form than *öör ni*.

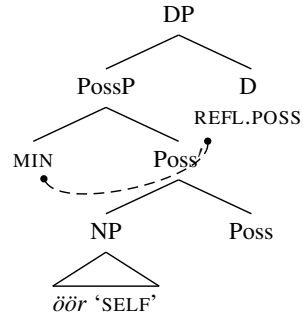
(38) *nom-oo*
 book-REFL.POSS
 ‘self’s book’

(39) *öör-öö*
 self-REFL.POSS
 ‘self’s self’

(40) *nom-oo* ‘self’s book’ (preliminary)



(41) *öör-öö* ‘self’s self’ (preliminary)



Under this hypothesis, the complementary distribution is expected: since both regular and reflexive possessive agreement are realized on D, only one form can be spelled out per DP.

Independent evidence suggests that the minimal pronoun MIN is indeed syntactically distinct from the ordinary *pro*. A key difference is that *pro* has an overt pronominal counterpart in Khalkha, but MIN does not. For instance, a 3rd person *pro* possessor alternates with the overt genitive pronoun *tüünii* (the 3.POSS enclitic is optional if there is a pronominal genitive possessor (44)).

(42) *tüünii nom*
 3SG.GEN book
 ‘his/her book’

(43) *pro nom ni*
 book 3.POSS
 ‘his/her book’

(44) *tüünii nom (ni)*
 3SG.GEN book (3.POSS)
 ‘his/her book’

In contrast, MIN has no such overt counterpart. The polymorphemic reflexive *öör-iin-kh-öö* ‘self’s’ might seem like a candidate (45), but it cannot be the overt version of MIN for two reasons. First, it does not co-occur with the REFL.POSS morphology on the possessee (46). If *öör-iin-kh-öö* were the overt counterpart of MIN, this co-occurrence would be expected, parallel to *tüünii nom (ni)*.

(45) *öör-iin-kh -öö nom*
 SELF-GEN-EP -REFL.POSS book
 ‘self’s book’

(46) *?* öör-iin-kh -öö nom -oo*
 SELF-GEN-EP -REFL.POSS book -REFL.POSS
 Int. ‘self’s book’

Second, assuming MIN is the null version of *öör-iin-kh-öö* creates an issue of infinite regress. The structure of *öör-iin-kh-öö* itself contains the REFL.POSS morpheme *-öö*. Under our structural assumption (41), this morphology implies the presence of MIN at Spec PossP. If MIN were simply a null *öör-iin-kh-öö*, every polymorphemic reflexive would contain another polymorphemic reflexive within itself. These considerations lead to our proposal that the minimal

pronoun MIN in Khalkha is an obligatorily null element distinct from *pro*. Its presence is licensed only by the REFL.POSS agreement morphology on D:

- (47) MIN nom -oo
 book -REFL.POSS
 ‘self’s book’

Two anonymous reviewers raised questions about the surface morphotactics, specifically the fact that REFL.POSS follows the case suffix—apparently reversing the assumed syntactic hierarchy in this section. This ordering is not idiosyncratic but part of a broader pattern in the language family. In Mongolian and many other Mongolic languages (e.g., Dagur, Engkebatu 1988, Tsumagari 2003; Khamnigan Mongol, Janhunen 2003a; Buryat, Skribnik 2003; Written Mongolian, Poppe 1974; Middle Mongol, Rybatzki 2003), as well as some Tungusic languages like Evenki (Nedjalkov 2014), possessive agreement consistently appear after case markers. This contrasts with Turkic languages, where case follows possessive agreement.

- (48) Dagur (Mongolic)
- a. gutʃ -d -ə:
 friend -DAT -REFL.POSS
 ‘self’s book’ (based on Engkebatu 1988: 226; transcription follows Engkebatu)
 - b. bitəɣ -sul -d -finʲ
 book -PL -DAT -2SG.POSS
 ‘in/among your books’ (based on Engkebatu 1988: 221; transcription modified based on Engkebatu)

- (49) Evenki (Tungusic)
- a. girki -du -vi
 friend -DAT -REFL.POSS
 ‘to self’s friend’ (based on Nedjalkov 2014: 29)
 - b. ije -l -duk -in
 horn -PL -ABL -3SG.POSS
 ‘by/from its horns’ (based on Nedjalkov 2014: 50)

- (50) Turkish (Turkic)
- kitab -ın -ı
 book -3SG -ACC
 ‘his/her book’ (based on Kornfilt 1997: 26)

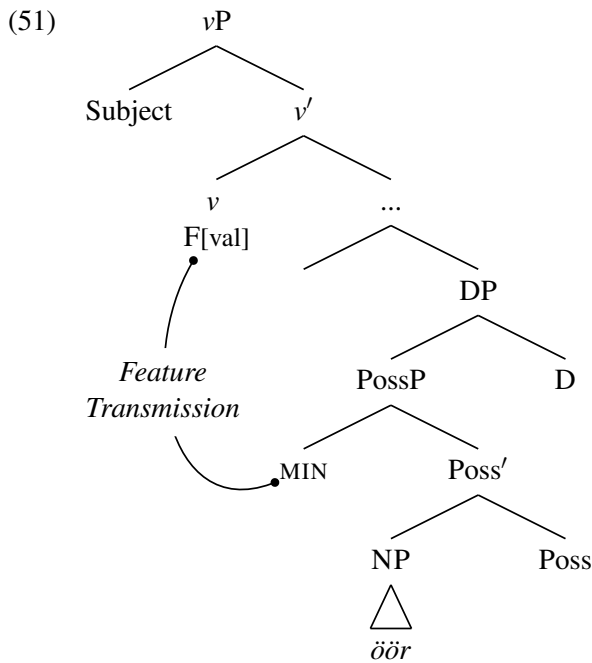
We attribute such cross-linguistic differences in morpheme order—including apparent Mirror Principle violations (Baker 1985)—to postsyntactic operations that reverse the order of morphemes (e.g., Embick & Noyer 2001, Embick 2007), rather than to differences in the underlying syntactic structures. An alternative raised by a reviewer, where the narrow syntactic hierarchy itself could be parameterized, is certainly a plausible way to account for the surface word order. However, this would require positing significant variation in the fundamental architecture of the nominal phrase in narrow syntax. As our central goal here is to establish the

syntactic licensing conditions for the minimal pronoun, a full exploration of these morpheme ordering patterns and their implications for the theory must be left to future work (although see Gong 2021 for a proposal regarding Dagur).

3 The Domain for Binding and Subject Orientation

Khalkha Mongolian reflexives exhibit two core properties: they are morphologically invariant and locally subject-oriented. This section further develops an account in which both properties follow from a single syntactic mechanism: the reflexive contains a minimal pronoun (MIN) that is locally bound by the subject-introducing verbal head, v . Our analysis adopts the approach developed in Kratzer (2009), wherein bound variable pronouns are generated without a complete set of features. These missing features are acquired via a feature transmission mechanism under local binding. In addition, the semantic binders (λ -operators) which bind the variable pronouns are introduced by functional heads, such as v , Voice, and potentially C (see also Adger & Ramchand 2005, Kratzer 1998), rather than directly by antecedent DP themselves.

We model the binding of the polymorphemic reflexive *öör-öö* ('self's self') as an interaction between the minimal pronoun MIN at its Spec PossP and the local v head. The head v , which introduces the subject, also hosts the binder for MIN.⁸



As illustrated in (51), the minimal pronoun MIN is base-generated at Spec PossP, initially born without ϕ -features. After the local v merges, it binds the minimal pronoun. The mechanism of Feature Transmission under Binding then applies, whereby MIN acquires its features derivationally from v .

(52) Feature Transmission under Binding (Kratzer 2009: 216)⁹

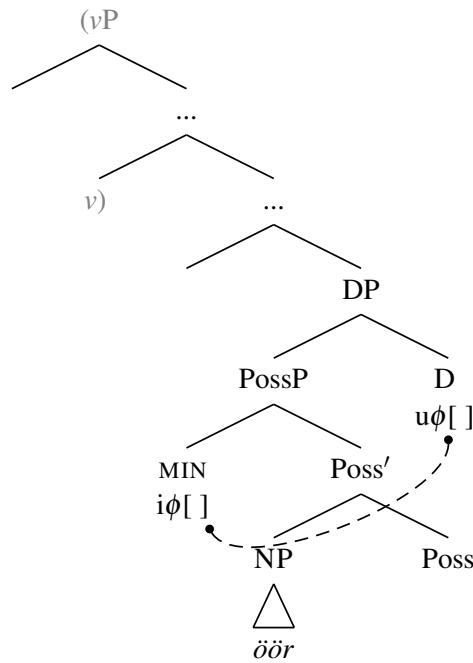
The ϕ -feature set of a locally bound pronoun unifies with the ϕ -feature set of the head

⁸For illustrative purposes, the v head is uniformly depicted on the left in all tree diagrams. This representation is adopted for readability and is not intended to reflect the syntactic structure of Khalkha Mongolian, which is consistently head-final.

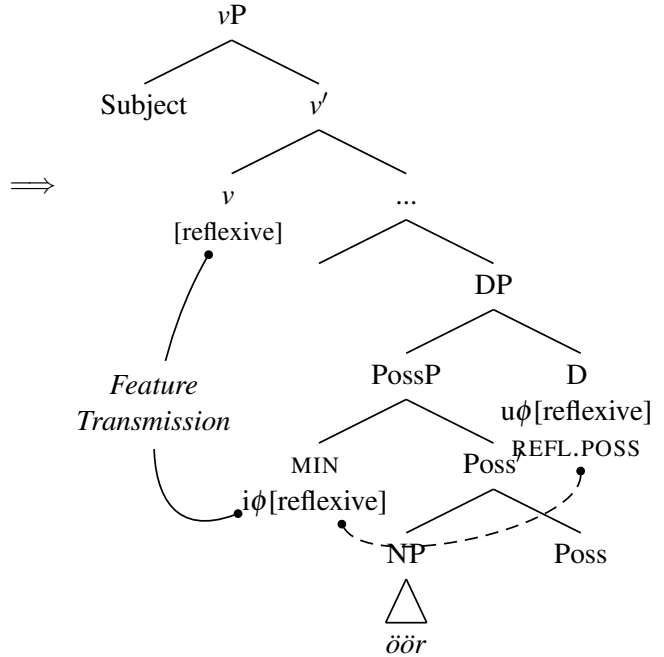
that hosts its binder.

Kratzer (2009) suggests that when reflexives do not encode person, number, or gender distinctions—as in Khalkha—they can be spelled out without requiring ϕ -features on v . In such cases, v needs only to supply the reflexive-specific feature [reflexive], which results in an invariant morphological form. We assume this is what happens in Khalkha Mongolian. The step-by-step derivation proceeds as follows. As before, we assume D possesses uninterpretable, unvalued ϕ features $u\phi[]$. We model the minimal pronoun’s initial lack of ϕ -features as it being externally merged with unvalued, interpretable $i\phi[]$ in Khalkha. Because D is merged before the local v is introduced, Agree between MIN and D takes place before binding and feature transmission from v to MIN, depicted in (53). For concreteness, we assume that this step of Agree establishes a feature sharing relation between MIN and D (e.g., Frampton & Gutmann 2006; Pesetsky & Torrego 2007). When the local v is introduced, it binds MIN, and the latter acquires the feature [reflexive] via feature transmission under binding. Due to the pre-existing dependency, this feature is also valued on D, where [reflexive] is spelled out as the REFL.POSS morphology -AA.

(53) D first Agrees with MIN (no valuation)



(54) Valuation occurs upon Feature Transmission



Because the binder is introduced by v —the same functional head which hosts the subject—the minimal pronoun can only be bound by the subject. This aligns with a number of linguists’ recent proposals that subject-oriented binding is tied to a verbal functional head v /Voice (e.g., Bhatia & Poole 2016, Ahn 2014, cf. Antonenko 2012, 2018). In particular, Bhatia and Poole

⁹Kratzer’s minimal pronoun approach with a feature-transmission mechanism could potentially be further compared with Agree-based approach to binding (e.g., Rooryck & Vanden Wyngaerd 2011, Reuland 2001, Hicks 2009, Antonenko 2012, among many others). While the Khalkha data do not conclusively adjudicate between these technical implementations, we adopt the minimal pronoun approach here as it provides a straightforward framework for modeling both nominal binding and bound null arguments in different types of clausal domains.

(2016) build on Kratzer’s (2009) work, propose that in Hindi-Urdu, the subject-oriented binding of *apnaa* is mediated by Voice. Because Voice is always associated with the subject, *apnaa*, being bound by Voice, is necessarily subject-oriented. Similarly, in Khalkha, we posit that the functional head *v*, the functional head which introduces the subject, not only provides a binder for MIN under Kratzer’s original account, but also additionally plays the role of facilitating subject-oriented binding.

The rest of this section will focus on providing support for this account in Khalkha. In particular, we will spell out how this approach interacts with the analysis developed in Section 2. Then, we will provide independent evidence that subject-orientation in Khalkha is indeed tied to the *vP* domain.

3.1 Explaining Binding Domains: A Delayed Spell Out Analysis

Following Kratzer (2009), we assume the locality window for feature transmission under binding is defined by phases. This assumption, however, creates an apparent locality paradox when applied to Khalkha, as illustrated by a comparison between *öör ni* and *öör-öö*. Setting aside subject-orientation for now, it is clear that the structures of *öör-öö* and *öör ni* must enable them to be bound by a local binder.

(55) = (1)

Emč-∅₁ (ni) Dorj-id₂ (tolin-d) [*e* öör-iig -öö]_{1/*2}
 doctor-NOM₁ 3.POSS Dorj-DAT₂ mirror-DAT [*e* SELF-ACC -REFL.POSS]_{1/*2}
 kharuul-san.
 show-PST

‘The doctor₁ showed to Dorj₂ [self’s self]_{1/*2} (in the mirror).’

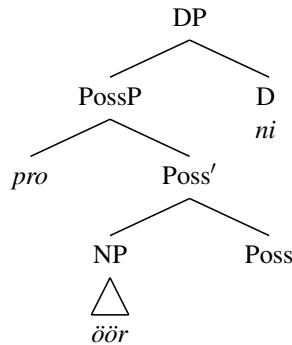
(56) = (35)

Emč-∅₁ (ni) Dorj-id₂ (tolin-d) [*e* öör-iig ni]_{*1/2} kharuul-san.
 doctor-NOM (3.POSS) Dorj-DAT mirror-DAT [*e* SELF-ACC 3.POSS]_{*1/2} show-PST

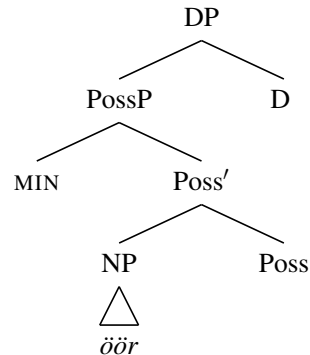
‘The doctor₁ showed to Dorj₂ his self_{*1/2} (in the mirror).’

Assume as before that *öör* is featurally impoverished and that it does not directly function as the bound variable and instead, the pronoun at Spec PossP functions as the bound variable. We have the following parallel structures for *öör ni* and *öör-öö*.

(57) *öör ni* ‘his/her self’



(58) *öör-öö* ‘self’s self’



The *pro* in (57) is not bound within its own DP phase. Therefore, it may take a DP in the next phase up as its antecedent, such as the indirect object *Dorj-id* in (56), without violating Condition B. Likewise, MIN in (58) is not bound within its own DP phase. However, MIN is, by assumption, featurally deficient and needs to acquire the feature from *v* through feature transmission. Since D is assumed to be a phase, its domain would be spelled out before the matrix *v* is introduced and thus before feature transmission could apply. Therefore, the structure which enables the binding of *pro* in (57) would also disallow binding of MIN in (58). Suppose, alternatively, that D has some sort of EPP feature in Khalkha which drives obligatory movement to Spec DP. This would enable MIN to move to the edge of DP phase and become local with the matrix *v*, but the same EPP-driven movement would also put *pro* in (57) and its antecedent DP in the same phase, violating Condition B. We propose that this paradox is resolved via a delayed spell out analysis of the DP phase (Despić 2011), a mechanism independently motivated by the morphosyntactic properties of Khalkha.

3.1.1 Khalkha as a DP Language

We propose that the key to resolving the paradox lies in Khalkha Mongolian's status as a DP language which encodes definiteness postnominally. Khalkha lacks prenominal definite articles; instead, the third person singular possessive enclitic *ni* is frequently used in definite environments as an indication of definiteness, with no possessive interpretation (cf. Hashimoto 2006; also see Fraurud 2001 for possible diachronic source of using possessive as definite markers in typologically similar languages). The subject *qagan* ('king') followed by 3SG.POSS in (59a) does not have a possessive interpretation, but instead presupposes a group of people or a nation of which the subject *qagan* is the king. Without 3SG.POSS and without any further specification of the context, the bare noun *qagan* in (59b) has an indefinite interpretation and can refer to any king.

(59) a. Written Mongol (Poppe 1974)

Qagan inu tere ekener-i qatun-iyān bolga-bai.

king 3SG.POSS that woman-ACC wife-REFL.POSS make-PST

'The king made that woman his wife.'

[Interpretation: A king of some people or nation that are familiar from the context]

b. **Qagan** tere ekener-i qatun-iyān bolga-bai.

king that woman-ACC wife-REFL.POSS make-PST

[Interpretation: (without further specification) any king]

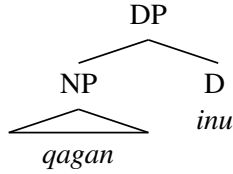
This typological profile places Khalkha in a class of languages defined by Despić (2011, 2015) based on a generalization from Reuland (2011):

(60) If a language has reflexive possessives it either does not mark definiteness at all, or it marks definiteness postnominally.

(Despić 2011: 123)

When *ni* functions purely as a definite marker, as in *qagan inu* ('the king'), we assume it is base-generated on D and does not involve agreement with a null possessor.

(61) *qagan inu*
king 3SG.POSS 'the king'



3.1.2 The Delayed Spell Out Analysis

Despić (2011) proposes that the licensing of reflexive possessives in languages with postnominal definiteness marking require additional mechanisms (see also Talić 2017). For Khalkha, we suggest that the correct analysis involves treating D as a phase head with delayed Spell-Out. Although the DP in Khalkha is structurally identical to the DP proposed for languages with prenominal definite article (e.g., English), the DP that characterizes Khalkha operates on a different cycle.

According to the phase theory (e.g., Chomsky 2000, 2001), materials in syntactic domains are transferred to the interfaces incrementally. This is constrained by the Phase Impenetrability Condition:

(62) Phase Impenetrability Condition (PIC):

In phase α with head H, the domain of H (its complement) is not accessible to operations outside of α ; only H and its edge are.

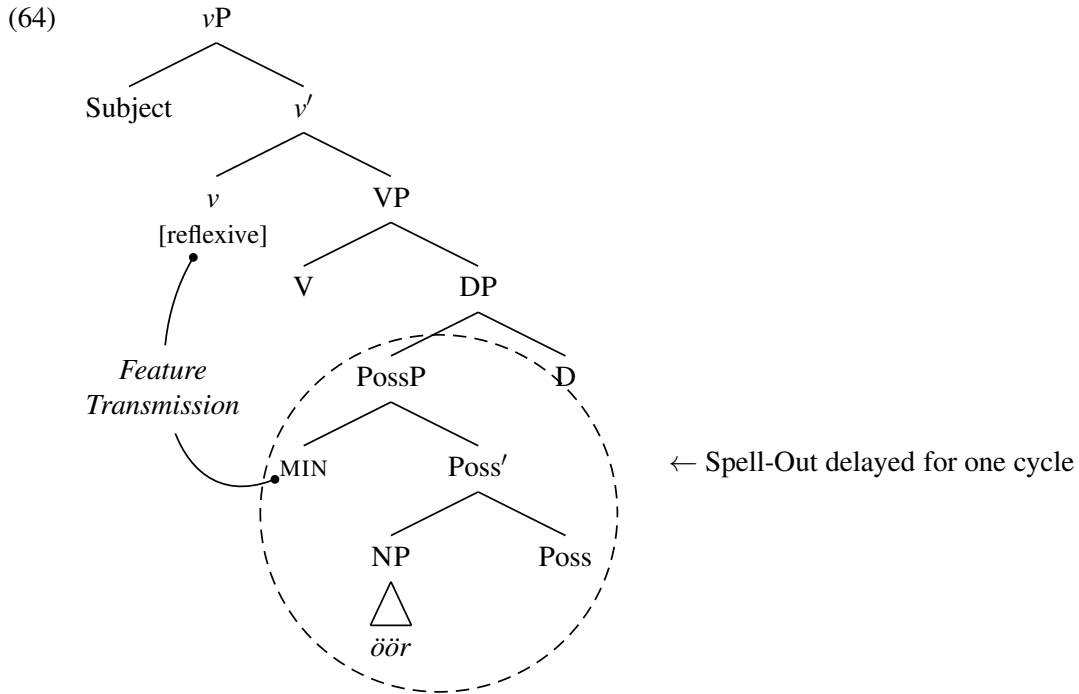
(Chomsky 2001)

In addition, Chomsky suggests that phases are cycles which correspond to units of some semantic and phonetic integrity and proposes that Spell-Out itself is cyclic. Cyclic Spell-Out ensures that the derivation is incrementally transferred to the interfaces, and cyclicity in syntax also constrains LF and PF operations to derive phonetic and semantic integrity. For example, the spell out domains of the phase heads C and D in English can be modeled as follows:

- (63) a. $[_{CP} C [_{TP} \text{He drinks wine}]] \rightarrow \text{SPELL-OUT}$
 b. $[_{DP} D [_{POSSP} \text{His picture of Colorado}]] \rightarrow \text{SPELL-OUT}$

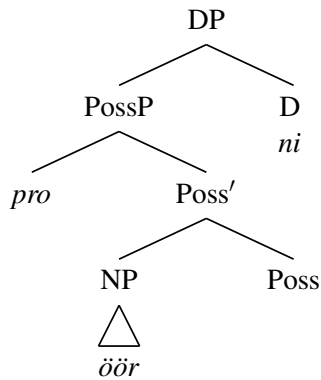
While standard cyclic spell-out suffice for the semantic and phonetic integrity of English, it involves more complications for languages like Khalkha. Postnominal affix/clitics on D are morphophonologically dependent on the complement of D: the definite marker *ni* is an enclitic, a bound morpheme that requires a host; the reflexive possessive *-AA*, is not only a bound morpheme, but also belong to the same vowel harmony domain as its host. If D and its complement were spelled out separately, these morphemes would be severed from their hosts, disrupting the phonetic integrity of a cycle. Therefore, following Despić, we suggest that in languages where definiteness is marked postnominally, D and its complement are spelled out in the same cycle, unlike English (63b). The specific derivation for Khalkha is illustrated with (64). We assume that in this language the first Spell-Out cycle applies at the vP level. Because Spell-Out is delayed for one cycle in Khalkha, there is sufficient derivational time window for the minimal pronoun in the possessor position to establish a feature transmission relationship with *v*. This delay in Spell-Out enables *v* to “reach into” the DP phase, an operation which is independently suggested by Kratzer (2009: 195), and establish the feature transmission dependency under binding. Crucially, even in languages that encode definiteness postnominally,

like Khalkha, DPs remain phases and binding domains.¹⁰

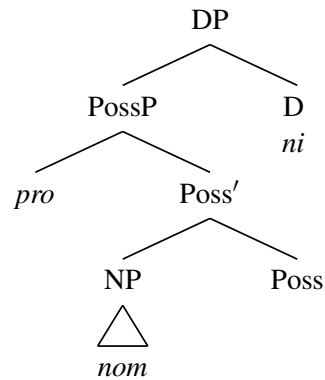


The delayed spell out analysis accounts for the accessibility of MIN in (58) for binding from the higher *v*P domain, even though DP itself is a phase and a binding domain. Before advancing further, it is also necessary to briefly clarify the implications of our proposal that DPs are phasal, especially in relation to the domain relevant for the binding of the third person *pro* in complex reflexives and possessive DPs (relevant structures repeated here).

(65) *öör ni* ‘his/her self’



(66) *nom ni* ‘his/her book’



In contrast to Lee-Schoenfeld (2008) and Hicks (2009), who propose that Condition B should also be defined in terms of phase-hood, we argue that as far as Khalkha is concerned, Condition B should be stated as in coargument based binding theories (Reinhart & Reuland 1993,

¹⁰As an anonymous reviewer suggests, an alternative idea would be that what undergoes Spell-Out is not the complement of a phase head but the phase itself, which is spelled out when the next higher phase is formed, e.g., Fox & Pesetsky (2005), Ko (2007). This analysis would achieve the same effect in allowing *v* to bind the minimal pronoun nested inside a DP, but would not straightforwardly capture the observed co-occurrence of reflexive possessives and postnominal definiteness cross-linguistically as discussed in §3.1.1.

Pollard & Sag 1992, 1994). Specifically, we argue that *pro* in Khalkha adheres to the following formulation of Condition B.

- (67) Condition B: a pronoun is free in its own predicate domain (i.e., phrase). An element is free if it is not c-commanded by a coindexed NP.

(Despić 2011: 110)

Under this formulation of Condition B, the relevant predicate domain for *pro* is PossP, and *pro* is free within this domain. Thus, Condition B is not violated.

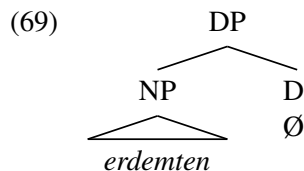
3.1.3 Further Remarks on Reflexives and the DP Status of Khalkha

So far, we argued on independent grounds that Khalkha is a DP language (§ 3.1.1), and motivated a Spell-Out analysis for Khalkha DPs (§ 3.1.2). These proposals also help explain the distribution of the SELF-NP *öör*: Since *öör* is an NP and cannot function as an argument without a DP projection (Longobardi 1994), it can only appear in adjunct positions when used in isolation (§ 2.2). Therefore, *öör* requires a possessive DP structure to function as an argument.

There is an additional level of complexity that needs to be addressed. In Khalkha, bare nouns are able to appear in argument positions, without having to project a possessive DP. The following sentence allows for a definite interpretation of the bare noun *erdemten* if there is a scholar salient in the context.

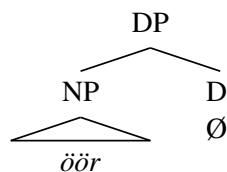
- (68) Tuyaa- \emptyset **erdemten-tei** uulz-san
 Tuyaa-NOM **scholar-COMIT** meet-PST
 ‘Tuya met with a scholar/the scholar’

For the bare noun argument ‘scholar’ in (68), one could argue that there is a phonologically null DP structure present in the syntax:



However, for whatever reason, this null DP strategy does not apply to reflexives. Specifically, it is not possible for a nominal with the structure like (70), in which a null D takes a bare SELF-NP as its complement, to appear in the argument position. In Khalkha, as we’ve shown, a bare *öör* cannot function as an argument on its own.

- (70) Unavailable structure in Khalkha



This mismatch suggests that there is a deeper reason why *öör* requires a *possessive* DP. Specifically, it seems that *öör* requires a local pronoun within its own locality domain (the DP). Simply projecting a DP with a null determiner is insufficient in this case. We suggest one potential explanation for this requirement lies in the relational nature of *öör* as a SELF noun. It has been observed that SELF nouns differs from most common nouns (e.g., ‘scholar’) in that SELF is inherently relational (e.g., Reinhart & Reuland 1991, Reuland 2011). Semantically, SELF denotes an identity relation (Reinhart & Reuland 1991, Reuland 2011, Sauerland 2013, McKillen 2016, Bassel 2022). In Reuland’s (2011) proposal, following Higginbotham (1980), complex SELF anaphors may be represented as follows.

- (71) a. himself/zichzelf
 b. [_{DP} Pronoun [_{NP} SELF (x)]]

The expression SELF (x) assigns a semantic role expressing the being-a-SELF-of relation (or the SELF-relation) to the pronoun in the possessor position. For Khalkha, our claim is that *öör* requires an antecedent *within its local DP domain* to establish this relation. Thus, a simple null DP projection is not sufficient to license *öör* in the Khalkha DP configuration, and a pronoun must be present in the possessor position. The special nature of SELF nouns in contrast to common nouns could contribute to the fact that *öör* cannot appear in argument positions without a possessive DP structure. Regardless of the precise mechanism behind supplying a local pronoun for SELF, our claim is that this process must occur within the DP domain in Khalkha.

3.2 Domain for Subject Orientation

If subject-oriented binding is mediated by *v*, as proposed, then there should be independent empirical facts showing that subject-oriented binding is indeed established within the *v*P domain, rather than the TP domain or beyond. We provide evidence in this section that this is borne out, and demonstrate that subject orientation in Khalkha is indeed established at the *v*P-level.

3.2.1 Scope of Negation

The notion of “subject” plays an important role in the syntax of binding. Assuming that the definition of a “subject” is tied to certain position(s) within the syntactic structure (Koizumi 1995, Harley 1995, McCloskey 1997, among others), one important question to address is: which syntactic position(s) might be relevant for the notion of “subject” in subject-oriented binding of Khalkha? Drawing on evidence from the scope of negation, we argue that the subject orientation of reflexives is established at the *v*P-level.

The negative marker *-(ü)güi* is used as one of the canonical strategies for verbal negation. As a suffix, *-(ü)güi* never combines with verbal forms of the actual finite conjugation (Janhunen 2012:180). Instead, it attaches outside of aspectual suffixes.

- (72) Bi sonin unš-aa-**güi** bai-na.
 1S.NOM news read-IMPF.PTCP-NEG COP-NPST
 ‘I am not reading the newspaper.’

In the grammatical example (72), the negation *-güi* is attached outside of the imperfective participle *-aa*. Further tense inflection, in this case *-na* (NPST, finite) is facilitated by a copula *bai-*. The negative suffix *-güi* may not directly attach to a finite ending. Example (73) illustrate this using the finite NPST inflection.

- (73) *Bi yaw-na-gui.
 1S.NOM go-NPST-NEG
 Int. ‘I will not go.’

Given (72-73), we assume that *-(ii)güi* is hosted on a Neg head above Asp, but below T.

- (74) [_{TP} [[_{AspP} [_{VP} ...] Asp] **Neg**] T]

Now consider the following data. In an existential construction, a nominative phrase such as *emč* (‘doctor’) can only take narrow scope with respect to the negation *-güi*.

- (75) Ene zoogiin gazar-t emč-Ø bai-kh-güi.
 this restaurant-DAT doctor-NOM be-NPST.PTCP-NEG
 ‘There is no doctor in this restaurant.’
 NEG > a/some; #a/some>NEG

This suggest that the nominative phrase in existential constructions is lower than Neg, and therefore lower than T, give the structure (74). In addition, in existential constructions, the nominative phrase c-commands the dative-marked location phrase.¹¹ This is demonstrated with binding in (76). The nominative phrase *ta* (2S.NOM) can bind into the dative phrase, which is expected under the view that the dative phrase is lower than the nominative phrase.

- (76) Ta₁ öröö-nd-öö₁ bai-na uu?
 2S.NOM room-DAT-REFL.POSS COP-NPST Q
 ‘Are you₁ in self’s₁ room?’

With these facts in mind, consider the following example.

- (77) (Daini üe-eer) emč₁-Ø offis-t-oo₁ bai-g-aa-gui.
 war.GEN era-INST doctor-NOM office-DAT-REFL.POSS COP-EP-IMPF.PTCP-NEG
 ‘(During the war) no doctor₁ is in self’s₁ office.’
 NEG > a/some; #some>NEG

In (77), the nominative phrase *emč* (‘doctor’) can only take narrow scope with respect to the negation, just like (75). This suggest that the nominative phrase is lower than Neg, and therefore lower than T. Crucially, even from this relatively low structural position, the nominative phrase can still induce subject-oriented binding on the dative-marked location phrase *offis-t* (‘office-DAT’). We take this fact to indicate that subject-orientation in Mongolian is established at the *vP*-level, lower than Neg as well as TP.

3.2.2 Further Remarks: Causatives and Subject Orientation

Causative constructions have proven to be a useful tool in languages like Japanese for precisely identifying “subjects” as antecedents for the anaphor *zibun* (e.g., Saito 2006, Murasugi et al. 2005, Miyagawa 1980). We investigated Khalkha Mongolian causative constructions to explore whether similar insights could be gained in this language. However, our findings suggest that Khalkha causative constructions involve distinct syntactic structures compared to those in Japanese, making the results less robust and revealing with respect to binding. Despite these

¹¹In (75), the reverse linear order where the nominative precedes the dative is also possible.

differences, we present our findings here as they help refine our existing analysis and contribute to a more comprehensive understanding of the Khalkha binding pattern.

First, we observe that in Mongolian affixal causative constructions, formed with the causative morpheme *-UUI* (allomorphs: *-lgA*, *-gA*, *-AA*), the instrumental case-marked causee cannot be the antecedent of the subject-oriented reflexive.¹²

- (78) **Bagš**-Ø₁ Zaya-gaar₂ **öör-iig-öö**_{1/*2} šüümjl-üül-sen.
 teacher-NOM Zaya-INST self-ACC-REFL.POSS criticize-CAUS-PST
 ‘The teacher made Zaya criticize self’s self.’

In (78), the subject-oriented reflexive *öör-öö* can only be bound by the causer subject “teacher”, and cannot be bound by the instrumental causee “Zaya”.

In addition, in Mongolian derived subjects of passive and unaccusative constructions also license subject-oriented binding. For example:

- (79) **Öwgön**-Ø₁ gert-ee₁ nas bar-jee.
 elder-NOM house-REFL.POSS pass away-PST
 ‘The old man died in self’s house’

At first glance, it may seem plausible to consider Spec TP as the relevant subject position for subject-oriented binding. However, a closer examination of causative constructions in Khalkha reveals further structural complexities, which distinguish it from causatives in languages like Japanese. Specifically, we demonstrate that in the type of causative construction analyzed here, the instrumental causee behaves more like an adjunct. This, we argue, explains why causees cannot serve as antecedents for subject-oriented reflexives in (78).

To support this claim, we evaluate the independent properties of Mongolian causatives in greater detail. The example below illustrates a Mongolian affixal causative construction with a transitive verb and an instrumental causee.

- (80) **Bagš**-Ø oyutn -aar esee bič -üül -sen.
 teacher-NOM student -INST essay write -CAUS -PST
 ‘The teacher made the student write (an) essay/essays.’

Preliminary evidence suggests that Mongolian causatives of this type encode two separate events, one of which is a syntactically represented causing event (cf. Japanese e.g., Kuno 1975, Miyagawa 1980, Harley 2008 and Turkish e.g., Key 2013, Nie 2022). It is possible to independently modify each event with temporal adverbs. Although such sentences are mildly degraded, the intended interpretation remains accessible.

- (81) ? Dorj-Ø **9-r sar-d** Bat-aar **10-r sar-d** dadlaga khiikh khümüüs
 Dorj-NOM **9th month-DAT** Bat-INST **10th month-DAT** trainee people
 -tei yariltslaga khiilg-üül-sen.
 -COMIT interview do-CAUS-PST
 ‘In September, Dorj made Bat interview the trainees in October.’

¹²Depending on the transitivity of the root verb and the reading, it is also possible for the causee to be in ACC or DAT case. For the sake of clarity and concreteness, we focus here on the affixal causative constructions with INST causee. See, e.g., Svantesson (2003), Janhunen (2006), Gong (2022) for descriptions on other possible causative forms in Mongolian.

In addition, the two events can be modified by separate manner adverbs. We take these data to be initial evidence suggesting that Mongolian causative constructions encode an additional causing event.

- (82) Eej-∅ ni **semerkhen** Zayaa-g-aar öröö-g ni **khurdan**
 mother-NOM 3.POSS **quietly** Zayaa-EP-INST room-ACC 3.POSS **fast**
 tsewerl-**üül**-e-w.
 clean-CAUS-EP-PST
 ‘Her mother quietly made Zaya clean her room fast.’

However, the instrumental causee does not behave like an agentive argument. For instance, as shown in (83), the causee cannot be modified by agent-oriented adverbs.

- (83) Bi Bat-aar khergeer zakhidl-ig ur-uul-san.
 1S.NOM Bat-INST deliberately letter-ACC tear-CAUS-PST
 Reading 1 ok: I deliberately made Bat tear the letter.
 Reading 2 ✗: I made Bat deliberately tear the letter.

According to our consultants, the interpretation in (83) is one in which “deliberately” modifies the causer. It cannot yield an interpretation where *Bat* (the causee) is understood as deliberately tearing the letter. This contrasts with periphrastic causatives, which are also attested in Khalkha:

- (84) Bi Bat-ig khergeer zakhidl-ig ur -a -kh -a -d **khürge-sen**.
 I Bat-ACC deliberately letter-ACC tear -A -NPST.PTCP -EP -DAT **cause-PST**
 Reading 1 ok: I deliberately made Bat tear the letter.
 Reading 2 ok: I made Bat deliberately tear the letter.

In periphrastic causatives, the same adverbial *deliberately* (‘khergeer’) can modify the causee *Bat*, indicating that native speakers can access this meaning when the structure permits. The absence of this interpretation in affixal causatives (83) suggests that the structure of these constructions prevents the causee from occupying a canonical agent argument position.

Based on these observations, we assume for now that the instrumental causee does not occupy Spec of v/VoiceP like a proper external argument. Several analytical possibilities arise. For instance, they can be plausibly conceived as adjuncts (e.g., Key’s 2013 proposal for Turkish causees), or as applied arguments (e.g., Nash 2020). Evidence suggesting the former view might be on the right track for Khalkha instrumental causees come from clefting. As observed by Sakamoto (2012), in Mongolian cleft constructions, adjuncts cannot be in the pivot, only arguments can (c.f. Uzbek, Gribanova 2013; Turkish, Akkuş 2021; Sason Arabic, Akkuş 2022, see also Merchant 2001).

- (85) Oyuna-gin id-sen ni tort bai-na.
 Oyuna-GEN eat-PERF 3.POSS cake.NOM be-NPST
 ‘It is the cake that Oyuna ate.’
- (86) *Oyuna-gin ene nom-ig khudaldaj-aw-san ni učigdur.
 Oyuna-GEN this book-ACC buy-take-PERF 3.POSS yesterday
 Int. ‘It was yesterday that Oyuna bought this book.’ (based on Sakamoto 2012: 56-7)

Notably, instrumental causees cannot be in the pivot, patterning with adjuncts. Consider the following causative construction (87), and two sentences (88) (89), which are cleft constructions formed on the basis of (87).

- (87) Bagš-∅ Dorj-oor sambar arč-uul-san.
 teacher-NOM Dorj-INST blackboard wipe-CAUS-PST
 ‘The teacher made Dorj wipe a/the blackboard.’
- (88) Bagš-in Dorj-oor arč-uul-san ni sambar bai-na.
 teacher-GEN Dorj-INST wipe-CAUS-PST 3.POSS blackboard-NOM COP-NPST
 ‘It is a/the blackboard that the teacher made Dorj wipe.’
- (89) ?*Bagš-in sambar arč-uul-san ni Dorj bai-na.
 teacher-GEN blackboard wipe-CAUS-PST 3.POSS Dorj.NOM COP-NPST
 Int. ‘It is Dorj that the teacher made to wipe a/the blackboard.’

As shown in (88), the cleft construction is grammatical when the direct object “blackboard” is the pivot. In contrast, when the cleft involves the instrumental causee as the pivot (89), the sentence is degraded.

In addition, instrumental causees are optional, which is consistent with their adjunct-like behavior in cleft environments. Mongolian allows arguments to be dropped if they can be inferred from the context. In an out-of-the-blue context, a sentence like (90), in which a nominative transitive subject is omitted, is not felicitous. Example (90) would be felicitous if it is uttered in a context in which a certain individual is salient.

- (90) In an out of the blue context
 # Sambar arč-iw
 blackboard wipe-PST
 Int. ‘Someone wiped a/the blackboard’

In contrast, the instrumental causee can be rather freely omitted regardless of context. The following example (91) can be uttered in an out-of-the-blue context, and it is interpreted as the teacher had someone wipe the blackboard.

- (91) Bagš-∅ sambar arč-uul-aw.
 teacher-NOM blackboard wipe-CAUS-PST
 ‘The teacher had someone wipe a/the blackboard.’

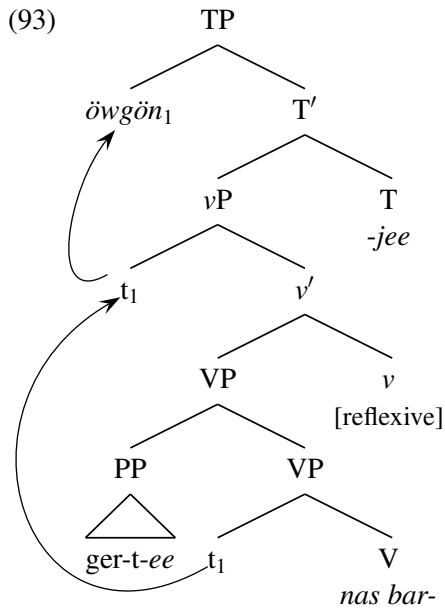
Based on similar facts in Turkish, Key (2013) suggests that causee optionality should be regarded as a separate phenomenon from canonical argument drop. Our data from Khalkha Mongolian supports this view: unlike a true argument, the instrumental causee can be omitted without contextual licensing (91). If causees indeed lack argument status, it follows that they would not behave as subjects for binding purposes and cannot serve as antecedents for subject-oriented reflexives. This aligns with our findings that Mongolian causatives, despite being biclausal, do not permit instrumental causees to induce subject-oriented binding. Instead, the evidence supports the idea that instrumental causees are adjuncts rather than occupying canonical subject positions. In summary, due to these language specific reasons, the facts presented in this section do not present direct counter-evidence to our proposal that subject-oriented binding is established in *vP*.

3.2.3 ν P as the Domain of Subject Orientation

So far, we have proposed that the domain for subject orientation in Khalkha Mongolian is structurally established in the ν P domain and not the higher TP domain. This proposal is supported by converging lines of evidence. First, as demonstrated in section 3.2.1, the interaction between REFL.POSS and the interpretation of negation suggests that the configuration for subject-oriented binding is established at a relatively low structural level below TP. In section 3.2.2, we addressed the fact that causees in Khalkha, in contrast to those in languages such as Japanese, fail to serve as antecedents for subject-oriented anaphors. Rather than treating this as a direct counter-evidence to the ν P domain hypothesis, we have suggested that this pattern arises from the potential non-argumental status of the causees, which independently prevents them from serving as binding antecedents.

Given this discussion, recall additionally that derived subjects of unaccusative constructions may also trigger REFL.POSS morphology. Following Saito (2006), we suggest that there is a ν P layer in the unaccusative construction in (92), and it suffices for the argument *öwgön* to qualify as a “subject” by moving through Spec ν P.

- (92) *Öwgön*₁ *ger-t-ee*₁ *nas bar-jee*
 elder house-DAT-REFL.POSS pass away-PST
 ‘The old man died in self’s house’



4 CCRM in the Clausal Domain

In this section, we extend the minimal-pronoun analysis of nominal CCRM to two clausal environments: same-subject (SS) adjunct clauses and complement clauses. Through clausal CCRM, we show that a minimal pronoun in Khalkha requires (i) a syntactic binding relation and (ii) a morphological licensing condition.

4.1 CCRM in Adjunct Clauses

4.1.1 The Interpretive Properties of the Null Subject

We first investigate CCRM in adjunct clauses through the lens of *when*-adjunct clauses headed by *-d/t*, a subordinator meaning ‘when/while’ and morphologically identical to the dative case marker (“quasiconverb” in Janhunen 2012: 169). A representative SS construction is given in (94).

- (94) Bat- \emptyset_1 Dorj-oos₂ [$e_{1/*2}$ Mongol-d bai-kh -d *(-aa)] ene
 Bat-NOM₁ Dorj-ABL₂ [$e_{1/*2}$ Mongol-DAT be-NPST.PTCP -DAT *(-REFL.POSS)] this
 nom-ig aw-san.
 book-ACC buy-PST
 ‘Bat₁ bought this book from Dorj₂ [when $e_{1/*2}$ was in Mongolia].’

In (94), the adjunct clause has a null subject e that must be coreferential with the matrix subject *Bat*. This obligatory subject-oriented interpretation is signaled by REFL.POSS; without REFL.POSS, e cannot be interpreted as coindexed with the matrix subject.

The null embedded subject e shows two key properties. First, its relationship with its antecedent requires c-command, shown in (95).

- (95) Zaya-g-iin nökhör- \emptyset [e mongol-d bai-kh-d-aa] ene
 Zaya-EP-GEN husband-NOM [Mongolia-DAT be-NPST.PTCP-DAT-REFL.POSS] this
 nom-ig aw-san.
 book-ACC buy-PST
 Available: [Zaya’s husband]₁ bought this book when he₁ was in Mongolia.
 Unavailable: [Zaya’s₂ husband]₁ bought this book when she₂ was in Mongolia.

Second, e behaves like a bound variable, reminiscent of a controlled PRO. Adapting diagnostics from English adjunct control (Landau 2013), the sentence in (96) is false in the stated context, while the same sentence is true under the context in (97).

- (96) Dorj laughs when he (Dorj) tells jokes, Zaya laughs when she (Zaya) tells jokes, and Bayar laughs when he (Bayar) tells jokes.

Zöwkhön Dorj- \emptyset 1 [e onigoo yari-kh-d-aa] inee-deg.
 only Dorj-NOM FOC [jokes tell-NPST.PTCP-DAT-REFL.POSS] laugh-HABIT
 ‘Only Dorj₁ laughs [when e_1 tells jokes].’

- (97) Dorj, Zaya, and Bayar laugh when Dorj tells jokes.

Zöwkhön Dorj- \emptyset 1 [e onigoo yari-kh-d-aa] inee-deg.
 only Dorj-NOM FOC [jokes tell-NPST.PTCP-DAT-REFL.POSS] laugh-HABIT
 ‘Only Dorj₁ laughs [when e_1 tells jokes].’

Thus, in SS *when*-adjuncts, the null subject is licensed by REFL.POSS and interpreted as a bound variable.

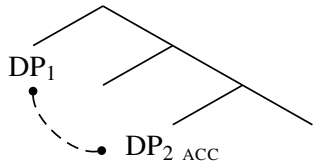
4.1.2 The adjunct clauses are base-generated below the subject

Khalkha allows flexible word order: the *when*-clause can appear clause-initially or between the subject and VP:

- (98) a. [Namaig angi-d or-j ire-kh-ed] oyutn-uud-∅
 [1SG.ACC classroom-DAT enter-CVB come-NPST.PTCP-DAT] student-PL-NOM
 unta-j bai-san.
 sleep-CVB COP-PST
 ‘When I entered the classroom, the students were sleeping.’
- b. Oyutn-uud-∅ [namaig angi-d or-j ire-kh-ed]
 student-PL-NOM [1SG.ACC classroom-DAT enter-CVB come-NPST.PTCP-DAT]
 unta-j bai-san.
 sleep-CVB COP-PST

We take (98a) to derive from (98b) by scrambling the adjunct clause from a base position below the matrix subject. The subject of the adjunct clause surfaces with accusative case in both orders. Following Gong (2023), we assume accusative is assigned configurationally as a dependent case: DP₂ is marked accusative when locally c-commanded by an unvalued DP₁ within a phase.

- (99) ACC assigned as dependent case
 If DP₂ is c-commanded by DP₁ in a local domain (i.e., a phase), and DP₁ has not yet been valued for case, then assign DP₂ accusative case.



In the context of (99), DP₁ corresponds to the matrix subject, and DP₂ would be the embedded adjunct clause subject. When the adjunct clause is introduced below the matrix subject, dependent case competition happens and accusative case is assigned to the embedded subject. Then, the adjunct clause raises to the matrix-initial position, giving rise to the word order in (98a).

Further evidence from binding effects confirm the low starting position of *when*-adjunct-clauses. As a baseline, we know that REFL.POSS is obligatory when the possessor of a DP is locally bound by a higher DP subject. In (100), since the possessor in the object argument ‘my younger brother’ is bound by the subject ‘I’, the possessor of the object can only be expressed with REFL.POSS (100b), and cannot be expressed with a personal pronoun ‘my’ (100a).

- (100) a. Bi düü-g-ee šüümjil-sen.
 1SG.NOM younger.brother-ACC-REFL.POSS criticize-PST
 ‘I criticized self’s younger brother.’
- b. *Bi {manai düü-g / düü-g maani}
 1SG.NOM 1SG.GEN younger.brother-ACC / younger.brother-ACC 1SG.POSS
 šüümjil-sen.
 criticize-PST

Int. ‘I criticized my younger brother.’

In contrast, in (101) the object pronoun is coindexed with the possessor inside the subject argument. Because there is no binding relation between the possessor of the subject and the object (i.e., the possessor does not c-command out of the phrase it is the possessor of), both the object pronoun and the possessor of the subject can be expressed with the first person pronoun.

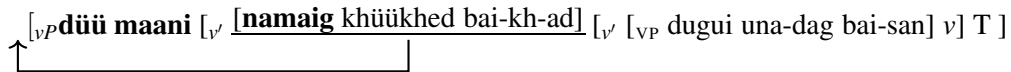
- (101) {Manai düü-∅ / Düü-∅ maani} namaig
 1SG.GEN younger.brother-NOM / younger.brother-NOM 1SG.POSS 1SG.ACC
 šüümjil-sen.
 criticize-PST
 ‘My younger brother criticized me.’

With this in mind, consider the following *when*-clauses (102)-(104). In (102), the first person possessor in the matrix subject DP *düü maani* ‘my younger brother’ and the embedded subject pronoun *namaig* are coindexed, and the result is grammatical.

- (102) [Namaig khüükhed bai-kh-ad] düü-∅ maani dugui
 [1SG.ACC child COP-NPST.PTCP-DAT] younger.brother-NOM 1SG.POSS bicycle
 una-dag bai-san.
 ride-HABIT COP-PST
 ‘When I was a child, my younger brother used to ride bicycles.’

This suggests that (102) is derived from an underlying syntactic configuration similar to the configuration in (101), where the possessive phrase containing the first person possessor (*düü maani*) c-commands the first person singular pronoun argument (*namaig*). Since the possessor does not c-command out of the possessive DP, the sentence is grammatical. To derive the surface word order, we assume that the embedded adjunct clause is introduced below the subject at Spec *vP*, schematized in (103). At this position, syntactic binding does not hold because the possessor of the matrix subject and the embedded subject are not in a c-command relationship. The word order of (102) is derived by moving the entire adjunct clause to a position above the subject, which can be reasonably considered as a type of *A'*-movement. This movement exhibits a reconstruction effect for binding.

- (103) Schematic derivation and representation for (102):



If (103) is on the right track, then we expect that the matrix subject should be able to induce REFL.POSS binding morphology on the embedded subject, since the matrix subject c-commands the embedded subject as well as any argument inside the embedded subject. This prediction is indeed borne out. In (104), the matrix subject does not c-command the embedded subject at the surface form. However, REFL.POSS morphology is triggered under the interpretation that the possessor inside the embedded subject is coindexed with the matrix subject *Dulmaa*.

- (104) [Düü -g -ee₁ ire-kh-ed] Dulmaa-Ø₁ khool khii-j
 [younger.brother -ACC -REFL.POSS come-AOR-DAT] Dulmaa.NOM food make-CVB
 bai-san.
 COP-PST
 ‘When (her₁) younger brother came, Dulmaa₁ was cooking food.’

The fact that *when*-clauses are introduced below the subject is further supported by (105).

- (105) a. * **Ter**₁ [Sodura₁-g-iin khüü-g бага bai-kh-ad] nom ikh
3SG.NOM [Sodura-EP-GEN son-ACC young be-NPST.PTCP-DAT] book much
 unš-san.
 read-PST
 Int. ‘When Sodura’s₁ son was young, she₁ read a lot of books.’
 b. * [Sodura₁-g-iin khüü-g бага bai-kh-ad] **ter**₁ nom ikh
 [Sodura-EP-GEN son-ACC young be-NPST.PTCP-DAT] **3SG.NOM** book much
 unš-san.
 read-PST

Both (105a) and (105b) are ungrammatical due to a Condition C violation, which is induced when the adjunct clause is first introduced below the matrix subject in (105a). Sentence (105b) is ungrammatical because the preposed adjunct clause obligatorily undergoes reconstruction. Based on the discussion in this section, we conclude that the temporal *when*-clauses are introduced below the subject within *vP*. While the adjunct clause may undergo further *A'*-scrambling, the binding relationship established within the *vP* domain is retained.

4.1.3 *When*-adjunct-clauses involve TP nominalization

In this section, we propose that the temporal adjunct *when*-clauses involve TP nominalization. In *when*-clauses, the embedded predicate uniformly takes the ending *-kh*. A relevant example is repeated below.

- (106) (=98a)
 [Namaig анги-d or-j ire-**kh**-ed] oyutn-uud-Ø
 [1SG.ACC classroom-DAT enter-CVB come-NPST.PTCP-DAT] student-PL-NOM
 unta-j bai-san.
 sleep-CVB COP-PST
 ‘When I entered the classroom, the students were sleeping.’

The morpheme *-kh* is a member of a small class of affixes which we will call aspect markers. The members of this class are in complementary distribution, occupying the same morpheme slot. Aside from *-kh*, other aspectual affixes include *-sAn* (perfective), *-dAg* (habitual), *-aa* (progressive) (among these, *-sAn* has a separate use as a general past tense morpheme, Janhunen 2012; Binnick 2011), summarized in (107).

- (107) Some of the Mongolian aspect markers

| | |
|-------------|-----------------------------|
| <i>-sAn</i> | perfect |
| <i>-kh</i> | futuritive (or infinitival) |
| <i>-dAg</i> | habitual |
| <i>-AA</i> | imperfect |

The affixes in (107) are distinct from the finite tense suffixes in Mongolian, summarized in (108).

(108) The finite tense markers

| | |
|------------------|--------------------------------|
| <i>-jee/-čee</i> | past |
| <i>-w</i> | (recent) past |
| <i>-lAA</i> | (recent) past/immediate future |
| <i>-nA</i> | nonpast |
| <i>-sAn</i> | past |

The aspect morphemes yield a sort of nonverbal predicate which may be further inflected by appending a copula, which helps introduce further tense morphemes. This is exemplified below. See a similar example with negation in (72).

(109) V-ASPECT COPULA-TENSE

Ene aldartai yaruu nairagč Yewrop-t amidar-**dag bai-jee**.
 this famous poet Europe-DAT live-**HABIT COP-PST**
 ‘This famous poet used to live in Europe.’

The suffix *-kh*, which is used in “dictionary forms” of verbs, may not appear as a finite matrix verb ending in a declarative clause without any auxiliaries or particles.

(110) *-kh* may not appear as a finite matrix verb ending in a declarative clause

*Bat yar-ikh.
 B.NOM talk-NPST.PTCP
 Int. ‘Bat talks/will talk...’

For this reason, *-kh* has been commonly glossed as INF(initival) (e.g., Binnick 2011, Fong 2019; cf. irreal mood in Svantesson 1991). However, it is not the case that *-kh* may never serve as an ending of a finite clause. This suffix can be used with an interrogative particle or negation to form interrogative and negative sentences with a non-past interpretation (Wu 1996: 65).

(111) *-kh* used with negation

Talkh bai-kh-güi.
 bread.NOM COP-NPST.PTCP-NEG
 ‘There is no bread.’

(112) *-kh* used in a question with an interrogative particle

Ta yu ide-kh we?
 2SG.NOM what eat-NPST.PTCP Q
 ‘What will you eat?’

For concreteness, we will gloss *-kh* as a non-past participle, and assume that it occupies the Asp head, and leave a detailed analysis of tense and aspect in Khalkha to future work. With this as background, Mongolian temporal adjunct clauses display at least two hallmarks of a reduced, nominalized structure. First, none of the finite tense suffixes in (108) may appear in these adjunct clauses.

- (113) * Bi [Bat(-ig) Ulaanbaatar yaw{-aw/-jee/-laa/-na}-g (ni)] ol.j
 IS.NOM [Bat(-ACC) Ulaanbaatar go-PST/-PST/-PST/-NPST-ACC 3.POSS] find.CVB
 med-sen.
 know-PST
 ‘I found out that Bat has gone to Ulaanbaatar.’

Second, the possessive agreement morphology is found on the temporal adjunct clauses. In the following example, the subject is a *pro*-dropped first person pronoun. The nominal agreement morphology appears on the embedded adjunct clause.

- (114) [[*pro* öwčtei bai-kh-ad] *mini*] Bat-∅ Mongol-d baisan.
 [[sick be-NPST.PTCP-DAT] IS.POSS BAT-NOM Mongolia-DAT be
 ‘When I was sick Bat was in Mongolia.’

Despite having a reduced, nominalized structure, these adjunct clauses are able to host habitual adverbs like *bainga* (‘usually, regularly, constantly’), which is taken to adjoin to at least Asp-level (Cinque 1999).

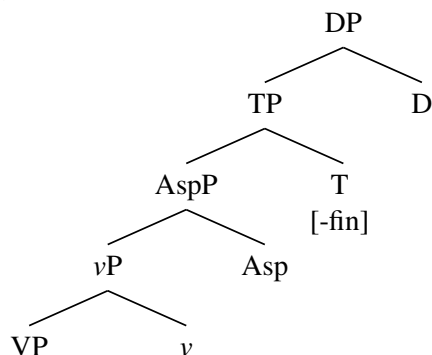
- (115) [Bat-∅ **bainga** dasgal khii-kh-ed] tsusni daralt-∅ ni
 [Bat-NOM **regularly** exercise do-NPST.PTCP-DAT] blood.GEN pressure-NOM 3.POSS
 buur-dag.
 lower-HABIT
 ‘When Bat exercises regularly, his blood pressure goes down.’

These adjunct *when*-clauses can also contain negation (116). We argued in Section 3 that the Neg head which hosts the negative marker -(ü)güi is above Asp but below T.

- (116) [Delgüür-iin khudaldagč-iig anzaar-aa-**güi** bai-kh-ad (ni)]
 [shop-GEN vendor-ACC notice-PROG-NEG COP-NPST.PTCP-DAT 3.POSS]
 khulgaič-∅ ter nom-ig khulgail-san.
 thief-NOM that book-ACC steal-PST
 ‘When the shop assistant was not paying attention, the thief stole that book.’

Taken together, these examples suggest that the temporal *when*-clauses may project beyond AspP, while still having a reduced, nominalized structure. We take the *when*-clauses to be an instance of TP-nominalization with a defective T head, following the mixed extended projection approach of Borsley & Kornfilt (1999), Kornfilt & Whitman (2011, 2012).

- (117) TP-Nominalization



4.1.4 An analysis of CCRM in SS-when-clauses

We attribute adjunct clausal CCRM to binding by matrix v of a minimal pronoun, based on the three results obtained above: i) the null subject in SS *when*-adjuncts behaves as a bound variable; ii) these adjuncts are base-generated below the matrix subject; and iii) they are reduced, nominalized clauses.

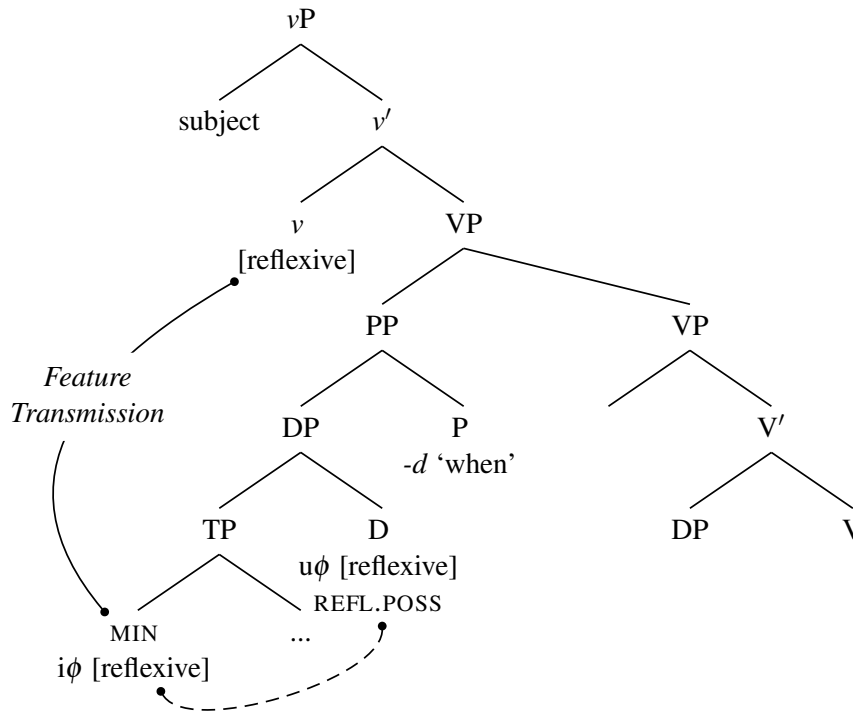
The idea that PRO-like elements instantiate minimal pronouns has been suggested in Kratzer (2009), as well as in Landau (2015). Taking the identity of the null subject in these adjunct clauses to be a minimal pronoun allows us to capture simultaneously that it behaves like a bound variable and triggers REFL.POSS morphology in this language.

(118) Same-subject (SS) adjunct clauses

Bat [MIN Mongol-d bai-kh-d -aa] ene nom-ig aw-san
 Bat [MIN Mongolia-DAT be-NPST.PTCP-DAT -REFL.POSS] this book-ACC buy-PST
 ‘Bat₁ bought this book [when he₁ was in Mongolia].’

We propose the temporal adjunct clauses are reduced, nominalized clauses adjoined at the VP-level, below the subject at Spec v P. This is depicted in (119).¹³

(119) Same-subject (SS) structure



The subject of the embedded adjunct clause is a minimal pronoun MIN which is externally merged without ϕ -features. It is base-generated clause-internally within the adjunct, and undergoes Agree with the ϕ -probe on D. We assume the PP headed by *-d* is not phasal, and, due to late spell out of DP, the matrix v may bind the minimal pronoun and transmit the [reflexive]

¹³We analyze the DAT marker which heads the temporal adjunct clauses as a P, taking a nominalized clause as complement. We assume P is not a phase head in Khalkha.

feature to MIN, as well as D. This feature is spelled out on D as the REFL.POSS morphology -AA.

4.2 CCRM in nominalized complement clauses

In this section, we extend the analysis to CCRM in nominalized complement clauses. As with the adjunct clauses, the null embedded subject in (120) is licensed by REFL.POSS and forces a SS interpretation.

- (120) Bat- \emptyset ₁ Dorj-oos₂ [*e*_{1/*2} šalgalta-d tents-sen *(-ee)] ol.j
 Bat-NOM₁ Dorj-ABL₂ [*e*_{1/*2} exam-DAT pass-PST.PTCP *(-REFL.POSS)] find.CVB
 med-sen.
 know-PST
 ‘Bat₁ found out from Dorj₂ that he_{1/*2} passed the exam.’

The c-command requirement likewise holds between the null subject of the complement clause and its antecedent – the matrix subject:

- (121) Bat-in naiz- \emptyset [*e* šalgalta-n-d tents-sen-ee] ol.j
 Bat-GEN friend-NOM [*e* exam-EP-DAT pass-PST.PTCP-REFL.POSS] find.CVB
 med-sen.
 know-PST
 Available: [Bat’s friend]₁ found out that he/she₁ passed the exam.
 Unavailable: [Bat’s₂ friend]₁ found out that he₂ passed the exam.

The null subject is interpreted as a bound variable. The sentence in (122) is false under the given context, where the candidates disagree on who won.

- (122) Enkhbayar declared that he (Enkhbayar) won, Ochirbat declared that he (Ochirbat) won, and Saikhanbileg declared that he (Saikhanbileg) won:
 Zöwkhö_n Enkhbayar- \emptyset 1 [*e* yal-sn-aa] zarla-san.
 only Enkhbayar-NOM FOC [win-PST.PTCP-REFL.POSS] declare-PST
 ‘Only Enkhbayar₁ declared that e₁ won.’

In contrast, the same sentence is true under the context in (123).

- (123) Enkhbayar, Ochirbat, and Saikhanbileg declared that Enkhbayar won:
 Zöwkhö_n Enkhbayar- \emptyset 1 [*e* yal-sn-aa] zarla-san.
 only Enkhbayar-NOM FOC [win-PST.PTCP-REFL.POSS] declare-PST
 ‘Only Enkhbayar₁ declared that e₁ won.’

Like the *when*-adjunct clauses, the complement clauses that permit CCRM show several characteristics of a nominalized, reduced structure. First, these embedded clauses are marked with accusative case, and allow genitive subjects, in addition to nominative and accusative.

- (124) Bi [Bat. \emptyset /Bat-iin/Bat-iig sugalaa-nd khoj-son-iig] med-ne.
 I [Bat.NOM/Bat-GEN/Bat-ACC lottery-DAT win-PST-ACC] know-NPST
 ‘I know that Bat won the lottery.’ (based on Aravind 2021:379)

Second, these embedded complement clauses may bear possessive agreement morphology:

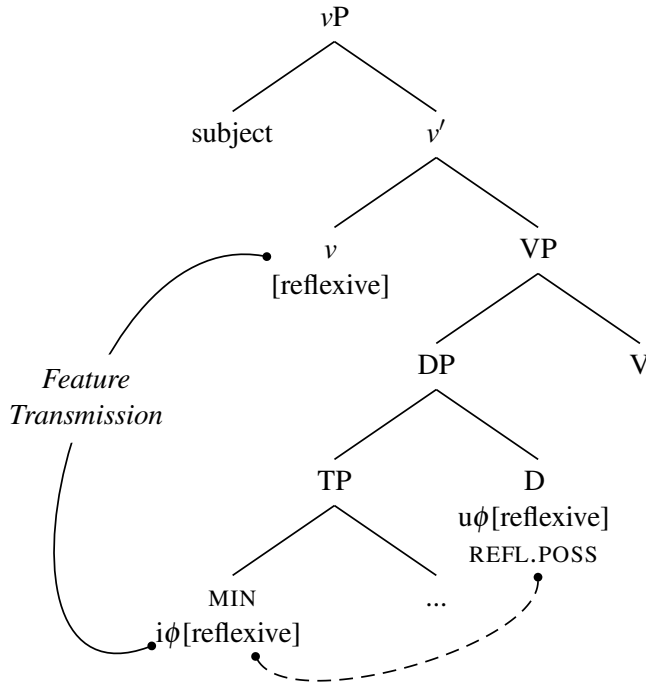
- (125) [[*pro* öwčtei bai-sn-iig] *mini*] Bat-∅ ol.j med-sen.
 [[sick be-PST.PTCP-ACC 1s.POSS] Bat-NOM find.CVb know-PST
 ‘Bat found out that I was sick.’

The verbal suffix of the embedded clause predicate takes participial forms, with limited tense features. Fully finite tense suffixes, such as *-jee* (reported past), *-IAA* (recent past), are not possible in these embedded clauses.

- (126) Bat-∅₁ [Dorj₁-iig zakhia bič{***-jee**/***-lee**}-iig (ni)] med-sen.
 Bat-NOM [Dorj-ACC letter write-PST/-PST-ACC (3.POSS)] know-PST
 Int. ‘Bat knew that Dorj had written (a) letter(s).’

The current account models CCRM in these nominalized complement clauses straightforwardly. Assume that the embedded subject is a minimal pronoun subject base-generated within the nominalized complement clause. Feature transmission from matrix *v* to MIN proceeds in a way parallel to the adjunct clause constructions.

- (127) Same-subject (SS) complement clauses



4.3 Remarks on the licensing condition of MIN

The analysis of CCRM in Khalkha reveals two distinct conditions on the licensing of the minimal pronoun: a syntactic binding condition and a morphosyntactic licensing condition. This section focuses on examining these conditions further, addressing their implications and predictions.

4.3.1 Binding condition for licensing the minimal pronoun

The minimal pronoun, born without ϕ -features, must be bound from a local higher *v* in order to acquire the [reflexive] feature and license the subject-oriented binding interpretation.

This mechanism predicts that the binding of MIN in Khalkha should be subjected to a strict locality condition. This prediction is borne out by the facts concerning multiple-embedding constructions, the embedded subject of a REFL.POSS-marked clause can only be co-referential with the subject of the immediately higher clause, paralleling the strict locality requirement of REFL.POSS in the nominal domain in Section 2.1. In multiple-embedding constructions, the subject of a REFL.POSS-marked clause is bound exclusively by the subject of the immediately higher clause.

(128) Adjunct clause

Dorj- \emptyset_1 [_{CP} Bat-ig₂ [MIN_{2/*1} mongol-d bai-kh-d-aa] ene
 Dorj-NOM [_{CP} Bat-ACC [MIN Mongolia-DAT COP-NPST.PTCP-DAT-REFL.POSS] this
 nom-ig aw-san gej] khel-sen.
 book-ACC buy-PST C] say-PST
 ‘Dorj₁ said that Bat₂ bought this book when e_{2/*1} was in Mongolia.’

(129) Complement clause

Bat- \emptyset_1 [_{CP} Dorj-iig₂ [MIN_{2/*1} šalgalta-d tents-sen-ee] med-sen gej
 Bat-NOM [_{CP} Dorj-ACC [MIN exam-DAT pass-PST.PTCP-REFL.POSS] know-PST C
] bod-son.
] think-PST
 ‘Bat₁ thought that Dorj₂ knew that e_{2/*1} passed the exam.’

Example (128) illustrates an adjunct clause with REFL.POSS morphology embedded under a CP, which is in turn embedded under the matrix clause. There are two higher subjects, *Dorj* and *Bat-ig*. Only *Bat-ig*, the subject of the immediately higher clause, can be coconstrued with the adjunct clause subject, labeled as MIN. Example (129) confirms the same pattern in complement clause contexts. The most deeply-embedded clause is nested under a CP, which is in turn subordinated under the highest matrix clause. As expected, the null subject of the most deeply embedded, REFL.POSS-marked clause can only be coconstrued with *Dorj-iig*, the subject of the immediately higher clause.

We have thus demonstrated that for CCRM to be licensed, the embedded clause must be introduced below the matrix subject, and the binding relation must be local. This distribution of minimal pronouns is predicted by the original proposal of binding from *v* by Kratzer.

4.3.2 Morphosyntactic condition for licensing the minimal pronoun

Our analysis addresses an additional, morphosyntactic property of minimal pronoun in Khalkha that is not immediately derived from the original theory of Kratzer (2009). The Khalkha Mongolian lexicon does not contain an overt phonological exponent for a minimal pronoun, nor can the [reflexive] feature be expressed overtly on *v*. Instead, this language resorts to the other available form of overt morphology within its lexical inventory to spell-out this [reflexive] feature – overt agreement. Given that Khalkha has only overt nominal agreement and lacks verbal agreement, the licensing requirement predicts that minimal pronouns of the type discussed here will be unavailable in non-Agreeing positions such as positions within the verbal domain, even if the syntactic binding condition is otherwise met.

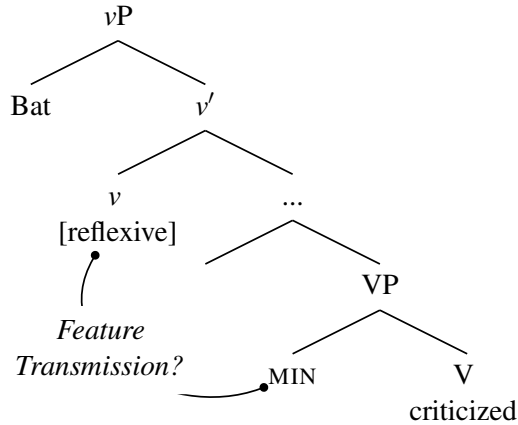
This is confirmed by the behavior of finite complement clauses. In the following example, the embedded clause is a full, finite CP. Although the sentence allows for a same-subject interpretation, REFL.POSS marking is ungrammatical even under such an interpretation. The empty

subject here is not obligatorily interpreted as a bound variable co-referential with the matrix subject *Bat*, unlike the null subjects in CCRM clauses.

- (130) Bat- \emptyset_1 [_{CP} $e_{1/2}$ margaaš Mongol-d yaw-na gej(*-ee)] nadad
 Bat-NOM [_{CP} e tomorrow Mongolia-DAT go-NPST C(*-REFL.POSS)] 1SG.DAT
 khel-sen.
 say-PST
 ‘Bat₁ said to me that he_{1/2} will go to Mongolia tomorrow.’

This follows from our analysis because finite CPs in Khalkha are not nominalized structures and thus lack the D-head that Agrees and overtly spells out the REFL.POSS morphology. The minimal pronoun is therefore restricted to argument positions of nominalized clauses where its morphological licensing requirements can be satisfied. This same condition explains why MIN itself cannot appear as a direct object (e.g., *Bat criticized MIN*, meaning Bat₁ criticized self₁) in a matrix clause.

- (131) Unavailable structure in Khalkha



Lacking overt object agreement, Khalkha provides no morphological condition to license a null pronoun in the direct object position of a verb, even when the binding requirement is otherwise satisfied. The only way for the minimal pronoun to occur in such non-Agreeing positions (subject positions of finite clauses, object positions) is to nest it within a DP domain and be licensed by nominal agreement, giving rise to polymorphic reflexives.¹⁴

- (132) Bat- \emptyset_1 [_{CP} [_{DP} e öör-iig-öö]₁ margaaš Mongol yaw-na
 Bat-NOM [_{CP} [_{DP} e self-ACC-REFL.POSS] tomorrow Mongolia go-NPST
 gej(*-ee)] nadad khel-sen.
 C(*-REFL.POSS)] 1SG.DAT say-PST
 ‘Bat₁ said to me that self₁ will go to Mongolia tomorrow.’

¹⁴A note of clarification regarding the assumed syntactic structure of (132) is in order. A nominative subject in the embedded *gej*-CP clause is reported to be ungrammatical in contrast to an accusative subject in Fong (2019: 12-13). According to Fong’s account, which we follow here, this nominative vs. accusative contrast can be explained if subjects assigned accusative case occupy a higher position than subjects that are assigned nominative case. In (135), binding between the matrix and the embedded subject is possible, because the embedded (accusative) subject is located at the edge of the embedded CP, where it is accessible to the next higher domain.

- (133) Bat₁ [DP *e* öör-iig *(-öö)]₁ šüümjil-sen.
 Bat.NOM₁ [DP *e* self-ACC *(-REFL.POSS)]₁ criticize-PST
 ‘Bat₁ criticized (self’s) self₁.’

We conclude that the licensing of CCRM in Khalkha is governed by two distinct yet interacting conditions: First, a syntactic binding condition requires the minimal pronoun to be in a local c-command relationship with its antecedent. Second, a morphosyntactic condition demands that the minimal pronoun be licensed by the overt REFL.POSS morphology, restricting it to nominalized clauses. This dual-condition analysis explains why a same-subject interpretation, while necessary, is not sufficient for CCRM. The seemingly idiosyncratic patterns of CCRM are therefore a predictable outcome of the potentially universal binding condition and the language-specific morphosyntactic licensing requirement.

5 Concluding remarks

In this work, we provided a unified analysis for cross-categorial reflexive marking (CCRM) in Khalkha Mongolian, accounting for the distribution of the reflexive-possessive morpheme *-AA* across both nominal and clausal environments. We demonstrated that all instances of CCRM are conditioned by a single mechanism: binding of a phonologically null minimal pronoun. On the analysis we proposed, the minimal pronoun must be locally bound by the local ν associated with the subject. This single syntactic mechanism provides a principled explanation for the consistent subject-orientation and strict locality effects observed in all CCRM constructions. However, binding alone is insufficient. The minimal pronoun in Khalkha is inherently null and additionally requires licensing by overt agreement morphology. This morphological requirement is the key to understanding the distribution of CCRM. Khalkha has overt nominal agreement but lacks verbal agreement. Consequently, the minimal pronoun is licensed only within nominal domains—specifically, through an Agree relationship with a D head. This D head is present in DP arguments (leading to reflexive possessors and the polymorphemic anaphor *öör-öö*) and in nominalized clauses (leading to subject-control-like readings). The feature transmitted from ν via binding is ultimately spelled out as the REFL.POSS morphology on D.

The current analysis provides support from a less studied language for models where binding is mediated by verbal functional heads. Furthermore, our analysis shows how the distribution of a null argument is predictably derived from the interaction between potentially universal syntactic condition on binding and the specific morphosyntactic profile of a language. This approach refines the overall typology of bound-variable pronouns and offers a framework for investigating similar CCRM phenomena in the Mongolic and Tungusic languages of the Northeast Asia sprachbund.

A final remark on the null argument licensing mechanism is in order. In this article, we remained agnostic regarding the ultimate source of the Khalkha minimal pronoun’s obligatory morphological licensing requirement. To strengthen the current claims, future research is required to determine why this element is obligatorily null and must be licensed by overt agreement. It remains an open question whether this obligatory licensing requirement stems from the featural composition of the minimal pronoun (e.g., its unvalued ϕ -features), and whether this property may be parameterized across languages. It is our hope that this work will encourage and inform future research in this area.

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