

ON THE NATURE OF REFLEXIVE POSSESSIVE AGREEMENT IN MONGOLIAN: FROM NOMINALS TO CLAUSES¹

ZHIYU MIA GONG

University of California, Santa Cruz

MILOJE DESPIĆ

Cornell University

1 Introduction

In this article, we investigate strategies of reflexive binding in Mongolian. In this language, local subject-oriented reflexive binding must be expressed with the reflexive possessive suffix *-AA*, subjected to vowel harmony. As shown in (1), this suffix is obligatory on a locally subject-bound self-pronoun. This suffixal morphology is invariant for phi-values. Regardless of the person or number of the antecedent,² the reflexive possessive suffix is invariably *-AA*.

- (1) B_i / \check{C}_i / Bat_1 $\ddot{o}r-iig*(-\ddot{o}o)_1$ $\check{s}\ddot{u}umjil-sen$
1S.NOM/2S.NOM/ Bat.NOM self-ACC-REFL.POSS criticize-PST
' I_1 /you $_1$ /Bat $_1$ criticized self's self $_1$.'

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¹ Abbreviations used in the glosses are as follows. 1/2/3=first/second/third person, ACC=accusative, C=complementizer, COP=copula, CVB=converb, DAT=dative, GEN=genitive, HABIT=habitative, INF=infinitive, NOM=nominative, NPST=non-past, PL=plural, POSS=possessive, PST=past tense, PTCP=participle, REFL=reflexive, REFL.POSS=reflexive possessive, S=singular.

² Modern Mongolian does not have gender agreement.

Although Mongolian has a putative self-pronoun *öör*, as seen in (1), it is the reflexive possessive suffix, rather than the pronoun *öör* itself, that overtly encodes the local subject-orientation. This point is further illustrated with (2).

- (2) Emč₁ (ni) Dorj-id₂ (tolin-d) öör-iig*(-**öö**)_{1/*2} kharuul-san
 Doctor.NOM 3S.POSS Dorj-DAT mirror-DAT self-ACC-REFL.POSS show-PST
 ‘The doctor₁ showed to Dorj₂ self’s self_{1/*2} (in the mirror).’

On a locally subject-bound reflexive pronoun, the presence of a reflexive possessive suffix is obligatory, and the resulting complex element must be bound by the subject in its local domain (i.e., *emč* ‘doctor’), and cannot be bound by a non-subject (i.e., *Dorj*). In order for the non-subject to qualify as an antecedent, there must be a 3S.POSS suffix attached to the self-pronoun instead of the reflexive possessive one, as shown in (3).

- (3) Emč₁ (ni) Dorj-id₂ (tolin-d) öör-iig *(**ni**)*_{1/2} kharuul-san
 doctor.NOM 3S.POSS Dorj-DAT mirror-DAT self-ACC 3S.POSS show-PST
 ‘The doctor₁ showed to Dorj₂ his self_{1/2} (in the mirror).’

The core empirical observation drawn from (1-3) is that Mongolian subject-oriented reflexives assume a complex form consisting of a self-pronoun and an obligatory suffix, and it is the suffix rather than the self-pronoun that determines the interpretive possibilities with respect to binding.

The morphology of Mongolian reflexive pronouns exhibits striking similarities with canonical possessive DPs. As illustrated in (4), in a possessive construction where the possessor is bound by the local subject, the binding relationship is encoded by the reflexive possessive suffix.

- (4) John₁ Mary-d₂ nom*(-oo)_{1/*2} ög-sön
 John.NOM Mary-DAT book-REFL.POSS give-PST
 ‘John₁ gave Mary₂ self’s_{1/*2} book.’ (Guntsetseg 2011:25)

Mongolian reflexive binding with the suffix *-AA* exhibits two prominent features which distinguish it from a number of previously investigated languages with subject-oriented reflexive possessives such as Norwegian (Hestvik 1992), Danish (Vikner 1985), Hindi-Urdu (Dayal 1994, Kidwai 2000, Bhatt 2004), Russian (Avrutin 1994), and Serbo-Croatian (Despić 2011). First, the morphological device which overtly encodes the existence of subject-oriented reflexive binding in a given construction is the reflexive possessive suffix, rather than a full reflexive pronoun. The latter strategy is more frequently attested in languages with subject-oriented reflexive possessives. An example is given below.

- (5) Norwegian
 John₁ fortalte Per₂ om [sin_{1/*2} kone]
 John told Peter about his-REFL wife
 ‘John₁ told Peter₂ about his_{1/*2} wife.’ (Hestvik 1992:564)

Second, the reflexive possessive morphology is found in structural environments beyond typical reflexive binding constructions. Specifically, it appears not only on bound DPs, but also on various types of nominalized embedded clause. In the latter environment, exemplified in (6), the obligatory

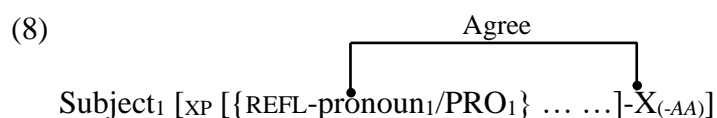
presence of the reflexive suffix on the nominalized clause signals that the embedded empty subject is identical to the matrix subject.

- (6) Bat₁ [e₁ Mongol-d bai-kh-d]*(-aa) ene nom-ig aw-san
 Bat.NOM Mongol-DAT be-INF-DAT-REFL.POSS this book-ACC buy-PST
 ‘Bat₁ bought this book [when e₁ was in Mongolia].’

Therefore, the core observation is that in Mongolian, the same subject-oriented binding morphology is shared across nominal and clausal domains. More concretely, we observe that the identical reflexive possessive morphology appears in three apparently distinct types of structures, indicating the presence of a binding or binding-like relationship with a local subject:

- (7) i. reflexive pronouns
 ii. possessive constructions
 iii. nominalized clauses

Drawing on fieldwork data from Khalkha, one of the major variants of Mongolian, we will argue that all three types of structures exhibiting reflexive possessive morphology involve local subject-oriented binding, including the clausal case (7iii). Specifically, as abstractly shown in (8), we assume all three structures involve the same structural blueprint which we temporarily label as XP for expository purpose. When local subject-oriented binding occurs, the bindee, which can be a null reflexive pronoun or an obligatorily controlled PRO depending on the environment, is contained within the XP structure which the reflexive possessive suffix attaches to. The reflexive possessive morphology is the spell-out of the features acquired via an Agree relationship between the bound pronoun (null reflexive or PRO) and the functional head (labeled as X in (8)) which hosts the reflexive possessive suffix. We propose that the mechanism in (8) underlies all the structures in (7i-iii).



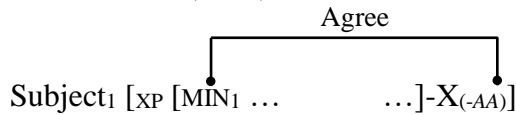
Drawing from data collected from fieldwork, we will argue in detail that the XP in (8) is a possessive-like nominal construction, which underlies all three types of structures in (7i-iii). In this respect, the Mongolian data offers another empirical case study for the possessive style analysis of reflexives suggested by Kornfilt (2000) for the typologically similar language Turkish (for similar proposals for other languages, see e.g., Helke 1970, Chomsky 1981, Iatridou 1988, Anagnostopoulou and Everaert 1999, Woolford 1999). It also provides support for an analysis of nominalization in terms of mixed projection, as suggested originally in Borsley & Kornfilt (1999).

The fact that a null reflexive pronoun and a PRO, which has previously been treated as distinct grammatical elements³ (e.g., Chomsky 1981), trigger the same kind of agreement morphology in Mongolian deserves special attention. Building on the observation that two kinds of null anaphoric

³ Chomsky (1981) proposes that PRO and anaphors are governed by distinct subsystems of principles. Given that Control Theory appears to overlap with Condition A of Binding Theory, researchers including Bouchard (1982), Manzini (1983), Koster (1984), and Hestvik (1990) have developed an alternative approach in which the properties of PRO are partially explained by Principle A. See Harbert (1995) for an overview.

arguments appearing in different structural contexts nevertheless give rise to the same kind of morphological reflex, we will make the following proposal. The reflexive possessive suffix is an overt, albeit indirect, manifestation of local binding, and these null anaphoric arguments are in fact one single grammaticalized element, which we suggest to be a certain variant of a “minimal pronoun” (MIN) in the sense of Kratzer (2009).

(9) Derivation of (7i-iii)



The rest of this paper will proceed as follows. In Section 2 we examine patterns of reflexive binding in the nominal domain, including both reflexive pronouns and possessive DPs. We show that the reflexive pronouns have an underlying structure parallel to possessive DPs, and binding of a reflexive pronoun in Mongolian in fact involves binding of an element contained in the specifier position of the reflexive pronoun. In Section 3 we investigate further patterns concerning reflexive binding in the clausal domain. We show that essentially the same mechanism underlies the nominalized clauses carrying reflexive possessive morphology. The reflexive possessive suffix on embedded complement and adjunct clauses is the result of Agree between a nominal functional head and the embedded, bound minimal pronoun subject. Section 4 concludes the paper.

2 Reflexive Binding in the Nominal Domain

2.1 The Structure of Reflexive Pronouns

We focus on two reflexive pronouns in Mongolian. The first one is the locally subject-oriented reflexive *öör-öö* (self-REFL.POSS). The second one is what we will call the elsewhere reflexive pronoun *öör ni* (self 3.POSS).

- | | |
|----------------------------------|---------------|
| (10) a. Locally subject-oriented | b. Elsewhere |
| öör-öö | öör ni |
| self-REFL.POSS | self 3.POSS |
| ‘self’s self’ | ‘his/herself’ |

As illustrated in (10), reflexive pronouns in Khalkha Mongolian generally assume a composite form, which is either a combination of the self-pronoun and the reflexive possessive suffix, or a combination of the self-pronoun and the personal possessive enclitic. In other words, in most cases the self-pronoun may not stand alone. The self-pronoun *öör* has its origin in the Proto-Mongolic reflexive pronoun, which has been proposed to be **öxen* (<**öpen*) (Janhunen 2003:20) or **öxer*>**öör* (Lefort 2020:589). The usage of the self-pronoun in combination with the reflexive marker apparently already existed in Proto-Mongolic (Janhunen 2003), and is also found in Middle Mongol (Rybatzki 2003), Written Mongol (Poppe 1974).

The 3.POSS enclitic appearing on the elsewhere form (10b) belongs to the paradigm of personal possessive enclitics given in (11).⁴

(11) Mongolian personal possessive enclitics

	Singular	Plural
1	minii	maani
2	čini	tani
3	ni	ni

In the next section, we report the binding properties of the locally subject-oriented reflexive pronoun and the elsewhere form.

2.2 The Binding Properties of Reflexive Pronouns

The reflexive possessive-marked self-pronoun *öör-öö* is locally subject-oriented, meaning that it can only be bound by a local subject. Within a clause, binding by a local non-subject require the elsewhere reflexive pronoun *öör ni*.

- (12) a. Emč₁ (ni) Dorj-id₂ (tolin-d) öör-iig-öö_{1/*2} kharuul-san
 doctor.NOM 3.POSS Dorj-DAT mirror-DAT self-ACC-REFL.POSS show-PST
 ‘The doctor₁ showed to Dorj₂ self’s self_{1/*2} (in the mirror).’
 b. Emč₁ (ni) Dorj-id₂ (tolin-d) öör-iig ni_{*1/2} kharuul-san
 doctor.NOM 3.POSS Dorj-DAT mirror-DAT self-ACC 3.POSS show-PST
 ‘The doctor₁ showed to Dorj₂ his self_{*1/2} (in the mirror).’

The fact that *öör-öö* can only be bound by the local subject is most readily seen in embedded clausal environments. Using nominalized clauses as an example, when the embedded object is bound by the embedded (clausemate) subject, *öör-öö* is used (13).

- (13) John [Mary-g₁ öör-iig-öö₁ zur-sn]-ig khar-san
 John.NOM Mary-ACC self-ACC-REFL.POSS draw-PST.PTCP-ACC see-PST
 ‘John saw that Mary₁ drew self’s self₁.’

In contrast, if the embedded object is bound by the matrix subject, the elsewhere form is used.

- (14) John₁ [Mary-g öör-iig ni₁ zur-sn]-ig khar-san
 John.NOM Mary-ACC self-ACC 3.POSS draw-PST.PTCP-ACC see-PST
 ‘John₁ saw that Mary drew his self₁.’ (Guntsetseg 2011: (35-6))

⁴ It should be noted that although it is also possible to combine the self-pronoun with the first and second person enclitics, they are not reflexives and are most often used as indexical pronouns (polite form). See Tserenpil and Kullmann (2015: 262-3) for relevant discussion.

Examples involving embedded full finite CPs yield a similar picture. When the embedded object is bound by the embedded (clausemate) subject, *öör-öö* is used.

(15) Bat₁ [CP Dorj-iig₂ öör-iig-öö*_{1/2} khural deer šüümjil-sen gej] khel-sen
 Bat.NOM Dorj-ACC self-ACC-REFL.POSS meeting on criticize-PST C say-PST
 ‘Bat₁ said that Dorj₂ criticized self’s self*_{1/2} at the meeting.’

(16) Bat₁ [CP Dorj-iig₂ öör-iig ni_{1/*2} khural deer šüümjil-sen gej] khel-sen
 Bat.NOM Dorj-ACC self-ACC 3.POSS meeting on criticize-PST C say-PST
 ‘Bat₁ said that Dorj₂ criticized his self_{1/*2} at the meeting.’

The binding properties of these two reflexive pronouns are summarized below.

(17) *öör-öö* can be bound by:

	local	long-distance
subject	✓	
non-subject		

(18) *öör ni* can be bound by:

	local	long-distance
subject		✓
non-subject	✓	✓

The patterns that emerge is that *öör-öö* can only be bound by the local subject, and *öör ni* is an elsewhere case, used whenever the binder is not a local subject. At this point, one might raise the question as to the precise status of *öör ni* – does it pattern more like a reflexive or a pronoun? Preliminary data indicate that *öör ni* patterns more closely with reflexives.

First, consider the differences between *öör ni* and the full 3SG pronoun *ter*. If *öör ni* is equivalent with a syntactic pronominal, then it should be subjected to Condition B. In the following example, the full pronoun must be disjoint from *Dorj* because of Condition B. However, replacing it with *öör ni* makes the sentence grammatical.

(19) ?*Emč ni Dorj-id₁ (tolin-d) tüün-iig₁ kharuul-san
 Doctor 3.POSS Dorj-DAT mirror-DAT 3S-ACC show-PST
 Int. ‘The doctor showed Dorj₁ him₁ (in the mirror).’

(20) Emč ni Dorj-id₁ (tolin-d) öör-iig ni₁ kharuul-san
 Doctor 3.POSS Dorj-DAT mirror-DAT self-ACC 3.POSS show-PST
 ‘The doctor showed Dorj₁ his self₁ (in the mirror).’

Second, *öör ni* patterns with reflexives in having a c-command requirement. The following sentence (21) is degraded to different degrees for different speakers. Some speakers reject (21) regardless of context. Some speakers can obtain the co-indexed reading in a context where the individual *Dorj* is already salient, but not when the sentence is uttered out of the blue. For all speakers we have consulted, (22), in which the 3SG full pronoun is used, is preferred over (21). Thus, in this paper we treat *öör ni* as a type of reflexive, rather than a pronominal.

(21) ?/*Dorj-iin₁ eej öör-iig ni₁ shüümjil-sen
 Dorj-GEN mother self-ACC 3.POSS criticize-PST
 Int. ‘Dorj’s₁ mother criticized his self₁.’

(22) Dorj-iin₁ eej tüün-iig₁ shüümjil-sen
 Dorj-GEN mother 3S-ACC criticize-PST
 ‘Dorj’s₁ mother criticized him₁.’

2.3 The Structure of Reflexive Pronouns

Before laying out our proposal for the structure of reflexive pronouns, we make two additional observations regarding the structure of reflexive pronouns. First, the surface morphological shape of reflexive pronouns parallels that of possessive DPs. As shown in (23-24), similar to reflexive pronouns, the possessive DPs may also be followed by the reflexive possessive suffix or the 3.POSS enclitic.

(23) Reflexive pronouns	(24) Possessive phrases
a. öör -öö self -REFL.POSS Lit. ‘self’s self’	a. nom -oo book -REFL.POSS Lit. ‘self’s book’
b. öör ni self 3.POSS Lit. ‘his/her self’	b. nom ni book 3.POSS Lit. ‘his/her book’

The specifier of the possessive DP can be an overt element, as exemplified below.⁵ With respect to the surface form with the agreement-like enclitic but no overt possessor, as in (24b), we assume the specifier position is occupied by a phonologically empty *pro*.

(25) Bat-in/tüünii/*pro* nom ni
 Bat-GEN/3S.GEN/*pro* book 3.POSS
 Lit. ‘Bat’s/his/her book’

We assume that in a regular possessive DP, the inner NP core is headed by a lexical noun. The outer *nP* shell is headed by a light *n* (alternatively, PossP and Poss; e.g., Radford 2000, Alexiadou, Haegeman, and Stavrou 2007). In particular, *nP* is the domain in which the thematic possession relation is established. A DP that is introduced at Spec *nP* receives possessor θ -role (e.g., Alexiadou et al 2007, Holmberg 2021, Satik 2020). This is illustrated in (26) below.

⁵ According to the speakers we have consulted, for first and second person there may not be “doubling” of the prenominal possessor and the postnominal clitic (although inter-speaker variation seems to exist, cf. Lim 2023).

(i) *minii nom mini (ii) minii nom (iii) nom mini
 1S.GEN book 1S.POSS 1S.GEN book book 1S.POSS

This fact about first and second person possessives contrasts with third person, which generally allows for the prenominal possessor and the possessive enclitic to co-occur. When the prenominal possessor is overt, the enclitic is not obligatory (iv). Thus, all the following three forms are acceptable:

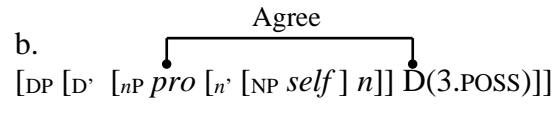
(iv) tüünii nom (v) nom ni (vi) tüünii nom ni
 3S.GEN book book 3.POSS 3S.GEN book 3.POSS

- (26) a. *tüünii nom (ni)*
3S.GEN book 3.POSS
- b. [DP [D' [_{nP} 3S.GEN [_{n'} [_{NP} *book*] *n*]] D]]

Second, the personal possessive enclitic is in complementary distribution with the reflexive possessive suffix. We take this to indicate that they are hosted on the same head.

- (27) a. **öör -öö* *ni / *öör ni* *-öö*
self-REFL.POSS 3.POSS self 3.POSS -REFL.POSS
- b. **nom -öö* *ni / *nom ni* *-öö*
book-REFL.POSS 3.POSS book 3.POSS -REFL.POSS

Based on the observed parallelism between the structures of reflexive pronouns and possessive phrases, we propose that the reflexive pronouns in Mongolian are i) phrasal and ii) have the structural blueprint of possessive DPs. Specifically, the overt possessive suffixes (e.g., REFL.POSS, 3.POSS) occupy the head of a DP. The complement of D is a possessive-like *nP* structure, whose specifier is occupied by a phonologically empty pronoun and whose “possessum” is the self-pronoun *öör*, which has the category of an NP.⁶ To illustrate further, under our proposal the elsewhere reflexive pronoun *öör ni* has the following structure.

- (28) a. *pro öör ni*
self 3.POSS
'(his/her) self'
- b. 
[DP [D' [_{nP} *pro* [_{n'} [_{NP} *self*] *n*]] D(3.POSS)]]

As shown in (28), the reflexive pronoun *öör ni* involves a DP structure where the agreement morphology is realized on D, which is assumed to be a phase head with EPP features. The *nP* structure, being D's complement, introduces a phonologically empty pronoun (of third person) at its specifier. The third person morphology *ni* is the result of Agree between the phi-probe on D and the pronoun at Spec *nP*.

Next, we turn to the locally subject-oriented reflexive *öör-öö*. Based on the analysis developed so far, we propose that it has the following possessive-like structure, in which the actual anaphor that is bound by a local subject antecedent is embedded as the possessor of the DP, labeled here as REFL. The fact that reflexive pronouns have a structure that resembles possessives has been noticed in a number of languages, and proposals similar to (25) have been made for languages such as Turkish (e.g., Kornfilt 2000), Modern Greek (e.g., Iatridou 1988, Anagnostopoulou and Everaert 1999), Selayarese (e.g., Woolford 1999) (for a possessive-style analysis of reflexives in English, see e.g., Helke 1970, Chomsky 1981).

- (29) [DP [[_{nP} REFL [[_{NP} *öör*] *n*]] D(-*öö*)]

⁶ We assume the self-pronoun *öör* is an NP. The Mongolian self-pronoun *öör* can be potentially compared with Turkish *kendi* as in *kendisi* (Kornfilt 2000), Modern Greek *eaftos* as in *o eaftos tu* (Anagnostopoulou and Everaert 1999, Iatridou 1988). We also assume that Mongolian nominals project DP, based on the independent fact that the 3.POSS enclitic can function as a definite marker in certain contexts, with no possessive interpretation. For detailed discussion regarding this fact, see Gong & Despić (in prep).

This analysis explains the fact in Mongolian that each instance of locally-subject bound reflexive require the possessive-like marking on the self-pronoun (30a), the same marking that appears in proper possessive DPs (30b).

- (30) a. Bat₁ öör-iig*(-**öö**)₁ šüümjil-sen
 Bat.NOM self-ACC-REFL.POSS criticize-PST
 ‘Bat criticized self’s self.’
 b. Bat₁ eej-iig*(-**ee**)₁ šüümjil-sen
 Bat.NOM mother-ACC-REFL.POSS criticize-PST
 ‘Bat criticized self’s mother.’

Under the current analysis, the true anaphor that is bound in both (30a) and (30b) is embedded as the possessor, and the obligatory reflexive possessive morphology is the result of Agree between the phi-probe on D and the anaphor at the possessor position within DP.

If this analysis is on the right track, then nominal (possessive) agreement in Mongolian always shows a special kind of agreement morphology with anaphors, which is invariant for phi-values. We assume that anaphors are introduced into the syntactic derivation without a full set of phi-feature specifications like pronouns or regular NPs (see similar proposals in, e.g., Burzio 1991, Kratzer 2009, Tucker 2010, Reuland 2001, Schäfer 2012). For concreteness, we take the anaphors embedded as specifiers of DPs to be instances of minimal pronouns in the sense of Kratzer (2009). The invariant morphology -AA is the result of the phi-probe on D agreeing with the minimal pronoun.⁷

3 Reflexive Binding in the Clausal Domain

Based on the observed parallelism between reflexive pronouns and possessive phrases, we have argued in the preceding section that the Mongolian reflexive pronoun has the structural blueprint of a possessive DP. In the case of the elsewhere reflexive [_{DP} *öör ni*], there is a third person pronoun embedded as the possessor of the reflexive, participating in Agree with D. In the case of the subject-oriented reflexive, the anaphor that is bound by the local subject is similarly embedded as the possessor of the DP, with the underlying form of [_{DP} REFL *öör-öö*], where REFL is an instance of a minimal pronoun. Under this analysis, the obligatory suffixal morphology on Mongolian reflexive pronouns emerges as a consequence of the obligatory Agree relationship between D and the possessor in a possessive DP. This type of analysis predicts that the same types of possessive-like morphology (REFL.POSS and 3.POSS) should be found in other environments that project possessive-like DP structures. In this section, we identify the same mechanism at work in the nominalized clausal domain and show that the prediction is borne out.

⁷ There have been various proposals with respect to the way subject-oriented binding is established in syntax (in addition to the work cited in the introduction section, e.g., Pica 1987; Reinhart & Reuland 1991, 1993; Safir 2004; among many others). It has also been proposed that subject-oriented binding could be tied to a verbal functional head (e.g., Bhatia & Poole 2016, Antonenko 2012, Ahn 2014). Under the latter view, binding of the minimal pronoun would be associated with a functional head such as *v*. We provide a more comprehensive discussion of this issue in Gong & Despić (in prep).

The reflexive possessive morphology is found in structural environments beyond typical reflexive binding constructions. Specifically, it appears not only on bound DPs, but also on various types of reduced and/or nominalized embedded clause. In the latter environment, the presence of the reflexive possessive suffix on the nominalized clause signals that the embedded subject is identical to the matrix clause subject. We illustrate this with two sub-cases of such reduced embedded clauses, namely, complement and adjunct clauses.

3.1 Nominalized Complement Clauses and Adjunct Clauses

Example (31) contains a nominalized complement clause whose subject is identical to the matrix subject *Bat*. The embedded subject is null and the overt reflexive possessive morphology is obligatory on the adjunct clause. Since REFL.POSS signals local subject orientation, here it is impossible to interpret the embedded clause subject as the matrix non-subject 1S.DAT argument.

- (31) *Bat*₁ *nada*₂ [_{DP} *e*_{1/*2} *Mongol yaw-sn-aa*] *khel-sen*
Bat 1S.DAT *Mongolia go-PST.PTCP-REFL.POSS say-PST*
 ‘*Bat*₁ said to *me*₂ that *e*_{1/*2} went to Mongolia.’ (Bat went to Mongolia)

Parallel to the patterns in the nominal domain, the subject-orientation of REFL.POSS is restricted to the local clause. Consider (32), which has multiple layers of clausal embedding.

- (32) *Bat*₁ [*Dorj-iig*₂ [_{DP} *e*_{*1/2} *šalgalt-and tentsn-ee*] *ol.j med-sen gej*] *bod-son*
Bat [*Dorj-ACC exam-DAT pass-REFL.POSS find.CVB know-PST C*] *think-PST*
 ‘*Bat*₁ thought that *Dorj*₂ knew that *e*_{*1/2} passed the exam.’ (Dorj passed the exam)

In (32), the null subject of the most deeply embedded, REFL.POSS-marked nominalized clause can only be co-construed with the subject of the immediately higher clause, in this case the subject of the intermediate clause *Dorj*. It cannot be co-construed with the subject of the highest matrix clause *Bat*.

In addition, the embedded nominalized complement clauses may also take a 3.POSS ending instead of the REFL.POSS. In this case, the subject of the embedded clause must be interpreted as disjoint from the matrix subject.

- (33) *Bat*₁ [*e*_{*1/2} *zakhia bič-sn-iig ni*] *ol.j med-sen*
Bat.NOM letter write-PST.PTCP-ACC 3.POSS find.CVB know-PST
 ‘*Bat*₁ found out that he/she_{*1/2} wrote a letter.’

Similar patterns are observed in various types of adjunct clauses as well. We focus on temporal adjunct clauses here, exemplified by (34). In this example, the subject of the adjunct clause is interpreted to be identical to the matrix subject *Bat*. In this case, the embedded subject is null and the overt reflexive possessive morphology is obligatory on the adjunct clause.

- (34) *Bat*₁ [*e*₁ *Mongol-d bai-kh-d-aa*] *ene nom-ig aw-san*
Bat.NOM Mongolia-DAT be-INF-DAT-REFL.POSS this book-ACC buy-PST
 ‘*Bat*₁ bought this book [when *e*₁ was in Mongolia].’

In the case where the embedded subject and the matrix subject are identical, the subject of the adjunct clause may not be overt.

- (35) *Bat₁ [Bat(-ig)₁/ter₁/tüünig₁ Mongol-d bai-kh-d-aa]
 Bat.NOM Bat(-ACC)/3S.NOM/3S.ACC Mongolia-DAT be-INF-DAT-REFL.POSS
 ene nom-ig aw-san
 this book-ACC buy-PST
 Int. ‘Bat₁ bought this book [when Bat₁/he₁ was in Mongolia].’

The embedded adjunct clause may also take 3.POSS instead of REFL.POSS. In this case, the adjunct clause subject must be interpreted as disjoint from the matrix subject.

- (36) Bat₁ [*pro**_{1/2} Mongol-d bai-kh-ad ni] ene nom-ig aw-san
 Bat.NOM Mongol-DAT be-INF-DAT 3.POSS this book-ACC buy-PST
 ‘Bat₁ bought this book [when he/she*_{1/2} was in Mongolia].’

When the embedded subject is interpreted as distinct from the matrix subject, overt subject is acceptable. When there is an overt subject, the 3.POSS enclitic is optional.

- (37) Bat [*Dorj-iig* Mongol-d bai-kh-ad (ni)] ene nom-ig aw-san
 Bat.NOM Dorj-ACC Mongol-DAT be-INF-DAT 3.POSS this book-ACC buy-PST
 ‘Bat bought this book [when Dorj was in Mongolia].’

3.2 Reflexive Binding in the Clausal Domain

3.2.1 Embedded Nominalized Clauses involve TP Nominalization

In this subsection we argue that both the embedded complement clauses and adjunct clauses involve TP nominalization (Borsley & Kornfilt 1999, Kornfilt & Whitman 2011, 2012). In other words, the type of embedded clauses which allow for the possessive enclitics and the reflexive possessive morphology are nominalized and/or have a reduced structure (i.e., they are not full, finite CPs). The most commonly used finite tense markers in Mongolian are summarized in (38).

(38) Finite tense markers

[1]		[2]	
- <i>jee/-čee</i>	past	- <i>sAn</i>	past
- <i>w</i>	(recent) past		
- <i>IAA</i>	(recent) past/immediate future		
- <i>nA</i>	nonpast		

Column [1] includes the standardly recognized finite verbal endings (e.g., Poppe 1974, Činggeltei 1991, Janhunen 2012). The ending *-sAn* in column [2] is typically regarded as a perfect participial suffix in traditional descriptive literature. However, it has also been noted that *-sAn* can be a general past tense suffix (e.g., Janhunen 2012; Binnick 2011) which appears on matrix main verbs just as the tense endings in column [1]. Consider the following example.

(39) *-sAn* as a finite past tense ending

Bi üüniig čam-d ög-sön
 1S.NOM this.ACC 2SG-DAT give-PST
 ‘I gave this to you.’

Building on Binnick (2011), we distinguish between one variant of *-sAn* as a finite past tense ending, and another *-sAn* as a participial ending indicating perfect aspect, along with other aspectual endings summarized in (36).

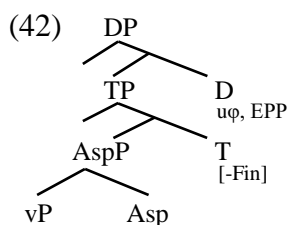
(40) Aspectual endings:

<i>-sAn</i> perfect	<i>-kh</i> futuritive (or infinitival)	<i>-dAg</i> habitive	<i>-AA</i> imperfect
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Importantly, for the purpose of this paper, none of the unambiguously finite suffixes in column [1] of table (38) may appear in the embedded complement or adjunct clause environments considered here. We use argument clauses to illustrate this point. These finite suffixes are similarly incompatible with the adjunct clause environments examined here.

(41) *Bi [Bat(-ig) Ulaanbaatar yaw-aw/-jee/-laa/-na-ig (ni)] ol.j med-sen
 1S.NOM Bat-ACC Ulaanbaatar go-PST/-PST/-PST/-NPST-ACC 3.POSS find.CVB know-PST
 Int. ‘I found out that Bat has gone to Ulaanbaatar.’

Thus, the verbal suffix on the predicate of these embedded clauses takes participial forms with limited tense features, and fully finite tense suffixes are not possible in these environments. In addition, these embedded clauses can be case marked. Thus, we propose that the adjunct and complement clauses examined here involve TP nominalization (42), with a structural blueprint of a possessive DP.



3.2.2 The Structure of Nominalized Embedded Clauses

We argue that in a nominalized embedded clauses which takes the reflexive possessive morphology, there is a minimal pronoun at its subject position that is bound by the local subject. We first outline our proposal for the adjunct clauses, and then turn to complement clauses. First, we show that the adjunct clauses are introduced below the matrix subject, and the main clause subject c-commands the temporal adjunct clause subject, but not vice versa. This is not a trivial point to demonstrate, because Mongolian has highly flexible word order, and most of the temporal adjunct clauses shown here can also appear in the matrix-initial position. Consider the binding facts in (43-44).

- (43) **Sodura₁** [khüü-g-ee₁ baga bai-kh-ad] nom ikh unš-dag bai-san
 Sodura.NOM son-ACC-REFL.POSS young be-INF-DAT book much read-HABIT COP-PST
 ‘When self’_{s1} son was young, Sodura₁ used to read a lot of books.’

In (43), the matrix subject can bind a possessor inside the embedded adjunct subject. In contrast, if the matrix subject is a pronoun, it may not be co-construed with an R-expression in the subject position of the embedded adjunct clause.

- (44) ***Ter₁** [**Sodura₁**-giin khüü-g bagabai-kh-ad] nom ikh unš-dag bai-san
 3S.NOM Sodura-GEN son-ACC young be-INF-DAT book much read-HABIT COP-PST
 Int. ‘When Sodura’s_{s1} son was young, she₁ used to read a lot of books.’

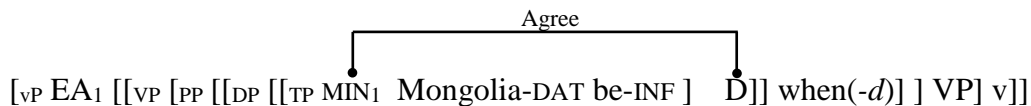
The fact in (44) is expected if the adjunct clauses are introduced in a position lower than the matrix subject, and (44) is ungrammatical due to a Condition C violation. Thus, we conclude that the temporal adjunct clauses discussed here are introduced below the matrix subject, where the embedded subject is c-commanded by the matrix subject.

Second, as discussed in the previous section, when the embedded subject is identical to the matrix subject, the adjunct clause subject may not be overt. We identify the same-subject adjunct clause constructions as involving obligatory control, and treat PRO as one realization of the minimal pronoun (Kratzer 2009, Landau 2015). The *when/while* clauses in Mongolian are headed by the dative marker *-d/-t*, which we analyze as a P taking a nominalized clause as its complement. We have seen that the adjunct clauses are introduced below the matrix subject. It has also been independently suggested that obligatory control temporal adjuncts modify a verbal projection (Landau 2021). We assume that in Mongolian, they are adjoined to VP.

- (45) Bat [MIN Mongol-d bai-kh-d-aa] ene nom-ig aw-san
 Bat.NOM Mongolia-DAT be-INF-DAT-REFL.POSS this book-ACC buy-PST
 ‘Bat₁ bought this book [when self₁ was in Mongolia].’

The structure of (45) is given in (46). The reflexive possessive morphology is due to the phi-probe on D agreeing with the minimal pronoun subject inside the embedded clause.

(46) Same Subject Adjunct Clauses



Under this analysis, complement clauses involve a similar structure with a minimal pronoun subject. Agree takes place between the nominalizing D head and the embedded MIN subject.

- (47) Same subject complement clauses
 Bat₁ nadad₂ [DP MIN_{1/*2} Mongol yaw-sn-aa] khel-sen
 Bat.NOM 1S.DAT Mongolia go-PST.PTCP-REFL.POSS say-PST
 ‘Bat₁ said to me₂ that self_{1/*2} went to Mongolia.’

In this analysis, the reflexive possessive morphology is only available when the structure is nominal or nominalized, hence involving a DP. This predicts that the reflexive possessive morphology would not be available in finite, full CPs, even when the matrix and the embedded subjects are interpreted as identical. This prediction is borne out.

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

The finite full CP in (48) is not nominalized and does not allow reflexive possessive morphology. Nevertheless, their null subjects may still be co-construed with the matrix subject.

4 Conclusions

In this article we conducted a preliminary investigation into the strategies of reflexive binding in Mongolian, and their implications for theories of reflexivity, the structure of possessive DPs and nominalized clauses in Mongolian. Drawing on fieldwork data from Khalkha Mongolian, we proposed that reflexive pronouns, possessive DPs, and nominalized clauses (structures which all show identical reflexive possessive morphology) share the same underlying structural blueprint. In particular, reflexive binding in all three of these structures involves a D agreeing with a minimal pronoun (reflexive pronoun or PRO) inside its complement – a nominal complement in the case of reflexive possessives and possessive DPs, and a nominalized TP complement in the case of clauses. Thus, the locally subject-oriented reflexive *öör-öö*, has a possessive-like structure, in which the actual anaphor bound by a local subject antecedent is embedded as the possessor of the DP. In the case of [_{DP} *öör ni*], an elsewhere reflexive, a third person pronoun embedded as the possessor of the reflexive triggers agreement on D, which is spelled out as *-ni* (3.POSS). We have tried to show that the same type of reflexive binding strategy and the same type of underlying structure are also involved in possessive DPs and nominalized clauses.

References

- Ahn, Byron. T. 2014. *Giving reflexivity a voice: Twin reflexives in English*. Doctoral dissertation, University of California, Los Angeles.
- Alexiadou, Artemis, Haegeman, Liliane, & Stavrou, Melita. 2007. *Noun Phrase in the Generative Perspective*. Mouton de Gruyter.
- Anagnostopoulou, Elena, & Everaert, Martin. 1999. Toward a more complete typology of Anaphoric expressions. *Linguistic Inquiry* 30(1):97–119.
- Antonenko, Andrei. 2012. *Feature-based binding and phase theory*. PhD dissertation, The Graduate School, Stony Brook University.
- Avrutin, Sergey. 1994. The structural position of bound variables in Russian. *Linguistic Inquiry* 25(4):709–727.
- Bhatt, Rajesh. 2004. Pronominal possessor obviation: locality and subjecthood. Handout from talk at UMass Amherst.
- Binnick, Robert. 2011. *The past tenses of the Mongolian verb: Meaning and use*. Brill.

- Borsley, Robert D., & Kornfilt, Jaklin. 1999. Mixed extended projections. In Robert Borsley (ed.), *Syntax and Semantics 32: The Nature and Function of Syntactic Categories*, 101–131. Brill.
- Bouchard, Denis. 1982. *On the Content of Empty Categories*. Ph.D. dissertation, Massachusetts Institute of Technology.
- Burzio, Luigi. 1991. The morphological basis of anaphora. *Journal of Linguistics* 27(1):81–105.
- Chomsky, Noam. 1981. *Lectures on government and binding: The Pisa lectures*. Walter de Gruyter.
- Činggeltei. 1991. *A grammar of the Mongolian language*. Inner Mongolia People's Publishing House.
- Dayal, Veneeta. 1994. Binding facts in Hindi and the scrambling phenomenon. In Miriam Butt, Tracy Holloway King, and Gillian Ramchand (eds.), *Theoretical perspectives on word order in South Asian languages*, 237–262. Stanford, California: CSLI.
- Despić, Miloje. 2011. *Syntax in the absence of determiner phrase*. PhD dissertation, University of Connecticut.
- Gong, Mia Z., & Despić, Miloje. In prep. On the nature of reflexive binding in Mongolian. Ms.
- Guntsetseg, Dolgor. 2011. *The so-called reflexive(-possessive) suffix in Mongolian*. Presented at “The World of Reflexives”, Utrecht University.
- Harbert, Wayne. 1995. Binding Theory, Control, and *pro*. In Gert Webelhuth (ed.), *Government and Binding Theory and the Minimalist Program*, 177–240. Oxford & Cambridge, MA: Basil Blackwell.
- Helke, Michael. 1970. *The grammar of English reflexives*. PhD dissertation, Massachusetts Institute of Technology, Department of Foreign Literatures and Linguistics.
- Hestvik, Arild. 1990. *LF-Movement of pronouns and the computation of binding domains*. PhD dissertation, Brandeis University.
- Hestvik, Arild. 1992. *LF movement of pronouns and antisubject orientation*. *Linguistic Inquiry* 23(4):557–594.
- Holmberg, Anders. 2021. Case and agreement in possessive noun phrases in mainly English, Swedish, and Finnish. *Syntactic architecture and its consequences III*:145–170.
- Iatridou, Sabine. 1988. Clitics, anaphors, and a problem of coindexation. *Linguistic Inquiry* 19(4): 698–703.
- Janhunen, Juha. 2003. Proto-Mongolic. In Juha Janhunen (ed.), *The Mongolic Languages*, 1–27. London, New York: Routledge.
- Janhunen, Juha. 2012. *Mongolian* (Vol. 19). John Benjamins Publishing.
- Kidwai, Ayesha. 2000. *XP-adjunction in universal grammar: Scrambling and binding in Hindi-Urdu*. Oxford Studies in Comparative Syntax. Oxford University Press, USA.
- Kornfilt, Jaklin. 2000. Local and long-distance reflexives in Turkish. In Peter Cole, Gabriella Hermon, and C.-T. James Huang (eds.), *Syntax and Semantics 33: Long Distance Reflexives*, 197–226. Leiden, The Netherlands: Brill.
- Kornfilt, Jaklin & Whitman, John. 2011. Afterword: Nominalizations in syntactic theory. *Lingua*, 121(7):1297–1313.
- Kornfilt, Jaklin & Whitman, John. 2012. Genitive subjects in tp nominalizations. In Gianina Iordachioaia (ed.), *Proceedings of JeNom 4 (Working Papers of the SFB 732)*, 39–72. Stuttgart.
- Koster, Jan. 1984. On binding and control. *Linguistic Inquiry* 15:417–459
- Landau, Idan. (2015). *A two-tiered theory of control* (Vol. 71). MIT Press.
- Landau, Idan. (2021). *A selectional theory of adjunct control*. MIT Press.

- Lefort, Julie. 2020. On the reflexive-possessive markers in the Dongxiang language. *Language and Linguistics* 21(4):581–600.
- Manzini, M. Rita. 1983. On control and control theory, *Linguistic Inquiry* 14:421–446.
- Pica, Pierre. 1987. On the nature of the Reflexivization Cycle. In Joyce McDonough and Bernadette Plunkett (eds.), *Proceedings of NELS 17*, 483–499. Amherst, Massachusetts, GLSA.
- Poppe, Nicholas. 1974. *Grammar of written Mongolian*. Otto Harrassowitz Verlag.
- Radford, Andrew. 2000. NP shells. *Essex Research Reports in Linguistics* 33:2–20.
- Reinhart, Tanya, and Eric Reuland. 1991. Anaphors and logophors: An argument structure perspective. In Jan Koster, Eric J. Reuland (eds.), *Long Distance Anaphora*, 283–321. Cambridge: Cambridge University Press.
- Reinhart, Tanya, and Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24(4) 657–720.
- Reuland, Eric. 2001. Primitives of Binding. *Linguistic Inquiry* 32(3), 439–492.
- Rybatzki, Volker. 2003. Middle Mongol. In Juha Janhunen (ed.), *The Mongolic Languages*, 57–80. London, New York: Routledge.
- Safir, Ken. 2004. *The Syntax of Anaphora*. Oxford University Press.
- Satık, Deniz. 2020. *Turkic genitive case and agreement asymmetries*. Manuscript, Harvard University.
- Tserenpil, Dandii-Yadam, & Kullmann, Rita. 2015. *Mongolian Grammar, 5th Edition*. Kullnom Verlag, Switzerland
- Vikner, Sten. 1985. Parameters of binder and of binding category in Danish. *Working Papers in Scandinavian Syntax* (23):1–61.
- Woolford, Ellen. 1999. More on the anaphor agreement effect. *Linguistic Inquiry* 30(2):257–287.