

This is a preprint and subject to modification.

What Can Mongolian Tell Us about Reflexives and Reflexivity?¹

Chigchi Bai

School of Foreign Languages, IMUFE

chigchi.hohhot@qq.com

January 09, 2024

Abstract

In *Oxford Bibliographies*, reflexivity is described by Cohen and Zribi-Hertz (2014) as a type of interpretation wherein two arguments of the same predicate co-refer. Cohen and Zribi-Hertz (2014) summarized that one line of research leads us to consider reflexivity as a special case of co-referential or anaphoric relations and another leads us to consider reflexivity as one among a set of semantic effects associated with a common “reflexive” morphology. To my knowledge, the majority of the literature has taken the first option, focusing on the expression of reflexivity in its narrowest semantic sense. The second line of research thus becomes more necessary and understanding how those different semantic effects can arise from the same forms, as put by Cohen and Zribi-Hertz (2014), should be the most important focus of current and future research on reflexives and reflexivity. With a view to promoting this line of research, this paper investigates the reflexive strategies in Mongolian, thereby showing how reflexivity can interact with different semantic effects and how it should be characterized as such in a broader sense. The hallmark of reflexivity in Mongolian is not an anaphor of any kind but rather a clitic, *-aa*, which occurs in the rightmost position of any kind of phrase requiring it. The proper function of this clitic is to indicate the identity between a possessor in a noun phrase and a local subject or between an embedded subject (in common sense) and a matrix subject. It also displays three binding properties: it is disallowed in nominative position, licensed by a local subject, and blocked by switch reference. The reflexive strategies in Mongolian reflected by this clitic can tell us about the following. First, reflexivity arises, in need of remedying the effect of *Inability to Distinguish Indistinguishables* (Reuland 2014), from the identity between the subjects of two predicates, one matrix and the other embedded, which is a more general cognitive principle. Second, possessives involve an abstract semantic predicate “*x HOLD y*”, where *x* is referentially identical to a matrix subject in deriving possessive anaphors. Third, there are two primary types of reflexivity, namely, possessive reflexivity and situational reflexivity, the former of which includes anaphoric reflexivity as its subtype. Fourth, reflexivity defined in its narrowest sense remains anaphoric reflexivity, which must be anaphoric-marked.

Keywords Reflexivity, Reflexive predicate, Possessive, Anaphor, Same-subject, Mongolian

¹ This research was funded by NSSFC [21XYY018].

Contents

- 1 The current picture of reflexives and reflexivity
- 2 The anaphor *öör* in Mongolian
- 3 The reflexive clitic RX in Mongolian
- 4 What is reflexivity?
- 5 What is a reflexive predicate?
- 6 What is an anaphor?
- 7 Conclusion

1. The current picture of reflexives and reflexivity

In line with extensive discussion in the literature (Faltz 1977; Reuland and Reinhart 1993; Kazenin 2001; Huang 2005; Reuland 2011a, and many), an informal characterization of reflexivity would be like (1) below.

- (1) Reflexivity is a dependency between two arguments of a predicate which assigns external and internal roles to them.

This characterization requires coreferentiality of arguments obtained for a single predicate, as in *John pinched himself*, when reflexivity is taken in its narrowest sense. In a slightly broader sense, reflexivity does not have a strict requirement on the structural positions of arguments. For example, in *John took a picture of himself*, *himself* is not an internal argument of *took*, yet it indicates the coreferentiality between it and the external argument *John*.

One of the well-known studies on the narrow-sense reflexivity is Reinhart and Reuland (1993) and their subsequent research. This paper discusses the reflexive strategies in Mongolian, taking the theory of Reuland and Reinhart (henceforth, R&R) as the background of research on reflexives and reflexivity, with a view of fleshing out a more general cognitive principle about reflexivity. Reflexivity is formulated as follows by R&R.

- (2) A predicate is reflexive iff two of its arguments are bound by the same λ -operator. (Reuland 2014: 11)

- (3) A predicate is reflexive iff one semantic argument bears two of the predicate's semantic roles. (Reuland 2017a: 25)

These formulations make reflexivity contingent on binding, which is defined by Reinhart and Reuland as follows.

- (4) A-Binding (logical-syntax based definition)

α A-binds β iff α is the sister of a λ -predicate whose operator binds β . (Reinhart 2006: 176)

Reflexivity is thus a semantic property that is syntactically preconditioned by binding and morphologically marked, with further formulations below provided by R&R.

(5) A predicate (formed of P) is reflexive-marked iff either P is lexically reflexive or one of P's arguments is a SELF anaphor. (R&R 1993: 678)

(6) Conditions

A: A reflexive-marked syntactic predicate is reflexive.

B: A reflexive semantic predicate is reflexive-marked. (R&R 1993: 678)

The most important ingredient of R&R's theory is Condition B in (6), which states that two identical variables on one verbal grid are avoided, and this property is expected to be universal (Reuland 2014: 12). The means to license reflexivity can be achieved by two routes including what Reuland (2014) calls *Protection* and *Reduction (+Bundling)*, as formulated below.

(7) Protection

a. DP. $\lambda x (V_{TR} (x, x))$

b. DP. $\lambda x (P (x, [\text{Morph } x]))$

c. DP. $\lambda x (P (x, f(x)))$ (Reuland 2014: 13)

(8) Reduction of an internal role

$V_{acc} (\theta_1, \theta_2) \rightarrow R_s(V) (\theta_1 - \theta_2)$

$V[\text{Agent}]_1 [\text{Theme}]_2 \rightarrow V[\text{Agent-Theme}]_1$ (Reuland 2014: 14)

R&R refutes Chomsky's (syntactic) definition of binding conditions, which are ingredients of what has been known as the Standard Binding Theory (SBT).

(9) Definition of binding under SBT

α binds β iff α and β are coindexed, and α c-commands β . (Chomsky 1981)

(10) Definition of binding principles under SBT

Principle A: An anaphor must be bound in its binding domain.

Principle B: A pronoun must be free in its binding domain.

Principle C: An R-expression must be free.

On the basis of a wider range of crosslinguistic data, R&R noted the shortcomings of SBT, details left out here, and argued that Principle B is strictly a condition on reflexive predicates, rather than on pronouns, regardless of their internal structure (R&R 1993: 665), and that Principle A, just like Principle B, is in fact about reflexivization, rather than about anaphors, requiring that reflexive marking be interpreted reflexively (R&R 1993: 670). The basic tenet of the R&R's theory is a reflexive dependency is obtained between external and internal arguments by binding by a λ -operator. I thus refer to R&R's approach as "the λ -operator approach" in this paper. When I speak of Condition A/B, I refer to those of R&R and I use Principle A/B to refer to those of SBT.

Another notion that becomes relevant in the context of reflexivity and binding is "anaphor". Reuland (2011: 239; 2019: 2), however, holds that there does not exist an anaphor in a strict

sense but exists an anaphor-like property, although he continues to use “anaphor” as a term. R&R distinguishes between what they call SE anaphors (simplex anaphors) and SELF anaphors (complex anaphors). SE anaphors are those that are independent from pronouns (pronominals in R&R’s terms) and quite generally lack a specification for number (Reuland 2014: 6). Among the typical examples often discussed are Dutch *zich*, Icelandic *sig*, Chinese *zi-ji*, and Japanese *zi-bun*. SELF anaphors are those like English *himself*, which consists of a pronoun and an anaphor (in a looser sense). Anaphors are presumably the most important and common reflexive strategy, which exist along with reflexive clitics, verbal affixes, pronoun doubling, bodypart expressions, and putting the reflexive in a PP. (Reuland 2014: 10). In some languages, a single one of these is employed, whereas in others, two or more (up to four) are employed (Reuland 2014: 6).

Being able to capture quite a wide range of crosslinguistic facts about reflexivity, R&R’s theory has developed toward a generalization, having come to us with a few important consequences. First, it, in a principled way, brought reflexivity as a window into the way language specific principles and general cognitive principles interact (Reuland (2014: 2). Reflexivity must therefore reflect a deep property of natural language (Reuland 2014: 10). As demonstrated by Reuland (2014: 11), the definition of reflexivity in (1) provides the clue as to why reflexivity is special for the reason formulated as the *Inability to Distinguish Indistinguishables* (IDI),² which is a general property of computational systems, but not a linguistic principle. Second, reflexivity, which is a semantic property per se, is manipulated by syntax. That is, binding, or more strictly, c-command and agreement, comes into play in achieving reflexivity. Reuland (2001; 2005a; 2014; 2017b; 2019) treats binding as a result of Agree, which involves feature (particularly phi-features) valuation between (SE) anaphors (bindees) and their antecedents (binders). Third, it “recharacterizes” an anaphor. Unlike SBT, which appeals to specific features such as [+anaphoric] and [+pronominal] and takes pronouns and anaphors as primitives, R&R’s theory holds that in a strict sense there is no element that can be characterized as “anaphor” but a property of being “used-as-an-anaphor” (Reuland 2011: 239; 2019: 2).

(1) A particular element is used as an anaphor iff it is linked to its antecedent by a syntactic operation. (Reuland 2020: 3)

The λ -operator approach focuses on a few questions about (the speciality of) reflexivity, two of which are repeated below. What types of crosslinguistic variation can be envisioned? Reuland’s (2014) answers to this question come from his concerns with the constraints on his second route to achieve the reflexivity licensing, that is, *Bundling + Reduction*. However, as we will see in the remainder of this paper, cross-linguistic variation can also be observed by examining languages such as Mongolian. Another question raised by Reuland (2017a: 13) is as follows: Why what languages do can be so diverse, although the notion of a reflexive predicate appears to be so simple? In a nutshell, what does the speciality of reflexivity — the notion of a reflexivity appears to be so simple while languages do can be so diverse — tell us about the human language system? This paper is particularly concerned with this second question. Observing

² Thus IDI reflects a ‘third factor’ in the sense of Chomsky (2005), as Reuland (2014) puts it.

Mongolian-specific strategies of licensing reflexivity and related principles will enable us to identify a more general principle about reflexivity as part of Universal Grammar and to explicate the way Mongolian-specific strategies and/or principles interact with it.

2. The anaphor *öör* in Mongolian

In line with many other studies, this paper takes correlations between anaphors and binding as a point of departure for investigating reflexivity. Informally, anaphors are pronoun-like elements that refer back to subjects. One of the typical properties of anaphors is that they acquire pronounhood through binding. Extensive literature is available on correlations between anaphors and binding that are studied on the basis of crosslinguistic facts.

In what follows, let us look at simple examples in Mongolian catering to the three conditions of the Standard Binding Theory (SBT), advocated by Chomsky (1981; 1986b). Our concern will be whether the anaphor *öör* in Mongolian behaves the way anaphors in other languages allowing SBT do.

(12) Baatar_i *öör*_{i/*j}-ig-*öö* *šüümjil*-sen.^{3,4} (Principle A)
 Baatar-NOM self-ACC-RX criticize-PST
 ‘Baatar criticized himself.’

(13) Baatar_i *tüün*_{*i/j}-ig *šüümjil*-sen. (Principle B)
 Baatar-NOM 3rd-SG-ACC criticize-PST
 ‘Baatar criticized her/him (someone else).’

(14) Baatar Bat-ig *šüümjil*-sen. (Principle C)
 Baatar-NOM Bat-ACC criticize-PST
 ‘Baatar criticized Bat.’

As seen in (12) and (13), the anaphor *öör* and pronouns such as *tüün* (or *ter*) are in complementary distribution. The non-reflexive pronoun *tüün* (or *ter*) in that position can never be interpreted as referring back to the subject,⁵ and a string like *tüün öör* (or *ter öör*) is not available as a counterpart of English *herself* or *himself*.

(15) *Baatar_i *ter/tüün* *öör*_{i/*j}-ig-*öö* *šüümjil*-sen.
 Baatar-NOM 3SG self-ACC-RX criticize-PST
 ‘Intended meaning: Baatar criticized himself.’

³ *Öör* must cooccur with a dedicated suffix *-öö*, one of the allophonic variants *-aa*, *-ee*, *-oo* and *-öö*, which are called reflexive-possessive suffixes, notated as “RX”. The details of RX is given in later sections.

⁴ The abbreviations used in this paper include ACC: accusative, ASP: aspect, DAT: dative, GEN: genitive, NFIN: non-finite, NOM: nominative, PS: passive, PST: past, and RX: reflexive-possessive suffix.

⁵ *Ter* ‘he/she/it’ is a zero-marked form and is used as a nominative subject, while *tüün* is a stem to which a case ending must attach. In colloquial Mongolian, especially in dialects such as Khorchin in eastern Inner Mongolia, *ter* serves as a stem for case endings, where mostly the consonant *-n* is inserted after it, e.g., *tern-ig*.

This makes Mongolian differ from many other languages such as English, in which non-reflexive pronouns can perform the job of both reflexive pronouns (also known as anaphors) and non-reflexive ones.

With a genitive marker, *öör* can cooccur with *tüün* but the latter is mostly absent and even sounds unnatural to some speakers.

(16) #Baatar (tüün-ne) öör-in nom(-ig)-oo mart-san.
 Baatar-NOM 3SG-GEN self-GEN book-ACC-RX forget-PST
 ‘Baatar forgot his own book.’

The genitive *tüün-ne* or *ter-ne* alone can be used in a context with a reflexive meaning, where RX must be present. However, reflexive sentences with *tüün-ne* or *ter-ne* but without *öör-in*, as in (17), are less natural for most speakers. In contrast, reflexive sentences with *öör-in* but without *tüün-ne* or *ter-ne*, as in (18),⁶ are more acceptable but encountered less often than those with both absent, as in (19).

(17) ??Baatar tüün-ne nom(-ig)-oo mart-san.
 Baatar-NOM 3SG-GEN book-ACC-RX forget-PST
 ‘Baatar forgot his book.’

(18) Baatar öör-in nom(-ig)-oo mart-san.
 Baatar-NOM self-GEN book-ACC-RX forget-PST
 ‘Baatar forgot his own book.’

(19) Baatar nom(-ig)-oo mart-san.
 Baatar-NOM book-ACC-RX forget-PST
 ‘Baatar forgot his own book.’

The degree of acceptability of the related phrases is as follows.

(20) The hierarchy of acceptability:

most natural	>	natural with low frequency	>	less natural	>	nearly unacceptable
NP-RX		<i>öör-in</i> NP-RX		<i>tüün-ne öör-in</i> NP-RX		<i>tüün-ne</i> NP-RX

As seen from this, *öör* shares properties with what is referred to as SE anaphors like, for example, Dutch *zich*, and is semantically equivalent to, for example, English *self*. However, *öör* is not the only form of Mongolian anaphor. Notably, *öör* can be replaced by the minimal noun *bey*,⁷ which is also interpreted as “self” in this context.

⁶ The genitive anaphor *öör-in*, when it occurs, is mostly interpreted as a contransitive intensifier, where the sentence sounds totally natural.

⁷ By “minimal noun”, I mean that an element such as *bey* lacks a prototypical lexical content but retains the nounhood, behaving like a lexical root. See section 6 for more details.

(21) Baatar_i bey_{i/*j}-ee šüümjil-sen.
 Baatar-NOM body-ACC-RX criticize-PST
 ‘Baatar criticized himself.’

Interestingly, the co-occurrence of *öör* and *bey* is possible, where *öör* takes the genitive form, interpreted as the “possessor” of *bey*.

(22) Baatar_i öör_{i/*j}-in bey-ee šüümjil-sen.
 Baatar-NOM self-GEN-body-ACC-RX criticize-PST
 ‘Baatar criticized himself.’

It is thus clear that Mongolian has all of a SE anaphor, a SELF anaphor (not productive though), and a body anaphor, the last of which contrasts with body anaphors such as *kò a li* in Haitian Creole (Rooryck and Vanden Wyngaerd 2011: 40) and *mi* in Japanese (Nishida 2002: 272; Noguchi 2018: 2) as well as head anaphors such as *kendi* in Turkish (Evseeva and Salaberri 2019: 388) and *bere burua* in Basque (Reuland 2017a: 36). However, none of these anaphors is a hallmark of reflexivity in Mongolian.

3. The reflexive clitic RX in Mongolian

As seen in section 2, the anaphor *öör*, when used as a reflexive marker, always calls for the presence of RX, namely the suffix *-aa*.⁸ As will be clear, RX is the hallmark of reflexivity in Mongolian. No reflexive interpretation is available in a sentence without RX, which occupies the rightmost position in a phrase requiring it. This means that anaphors are by no means the hallmark of reflexivity in Mongolian. This section presents empirical observations about RX, focusing on its semantic functions, binding properties and categorial status.⁹

3.1. Semantic functions of RX

RX, as a reflexive marker, signals certain types of dependency relations between two elements, which can be divided into three: Anaphoric relation (in the sense of R&R) as in (25), possessive relation as in (27), and situational relation as in (29).

As shown in the table below,¹⁰ anaphoric relations can be expressed by three different patterns, where either of *öör* and *bey* or both are used. Possessive relations are also expressed by three different patterns, where the genitive *öör-in* may or may not be used. When it is used, it may cooccur with *bey-in*, which cannot occur independently. It is noted that when *bey-in* is used, the

⁸ RX, which is subject to vowel harmony, has four allophonic variants *-aa*, *-ee*, *-oo* and *-öö*, as noted in fn.3, which do not differ from each other syntactically and semantically.

⁹ Explanatory discussions on RX can be found in studies including Anisman (2010), Guntsetseg (2011, 2012), Hideki et al. (2015), Bai and Cao (2024) and Gong (2023, 2024), and descriptive discussions can be found in Poppe (1954), Street (1963), Janhunen (2012), Kullman and Tserenpil (2015) in addition to local grammar books written in Mongolian.

¹⁰ K represents a case marker, and RX represents the reflexive marker. Note that the accusative case marker *-ig* is optionally absent and is so especially in colloquial Mongolian.

possessive relations expressed are more restricted than the case of *öör-in*. Situational relations are expressed by only one pattern, where *öör* and *bey* are not used basically.

(23) Types of relations with various patterns of anaphors/NPs

Types of relations	Patterns	Examples
anaphoric	<i>öör</i> -K-RX;	<i>öör-ig-öö</i> ;
	<i>bey</i> -K-RX;	<i>bey-ig-öö</i> ;
	<i>öör-in bey</i> -K-RX;	<i>öör-in bey-ig-öö</i> ;
possessive	NP-K-RX;	<i>nom-ig-oo</i> ;
	<i>öör-in</i> NP-K-RX <i>öör-in bey-in</i> NP-K-RX	<i>öör-in nom-ig-oo</i> ; <i>öör-in bey-in čadal-ig-aa</i> ;
situational	NP-K-RX	<i>nom-oo</i>

Anaphoricity (or anaphoric relation) here corresponds with the reflexivity (or reflexive relation) characterized by R&R, who excludes possessive reflexivity from reflexivity, as shown in (27). Therefore, according to R&R, sentences such as *John loves his dogs* do not express reflexivity, although coreferentiality is obtained between the subject and the possessive pronoun. Situational reflexivity is not attested in the languages studied by R&R, and no relevant discussion is given. Situational reflexivity will be shown to be a subtype of reflexivity in the remainder of this paper.

(24) Types of reflexivity in this paper and R&R's:

This paper	R&R
anaphoric relation/reflexivity	identified as reflexivity
possessive relation/reflexivity	not identified as reflexivity
situational relation/reflexivity	not discussed

We proceed to discuss the three relations signaled by RX in detail.

Anaphoric relation In signaling an anaphoric relation, RX cooccurs with the anaphor *öör* or *bey*, which takes accusative case, as exemplified in (21), (22) and (25) below.

(25) Baatar_i öör_i/*_j-ig-öö šüümjil-sen. (anaphoric relation)
 Baatar-NOM self-ACC-RX criticize-PST
 'Baatar criticized himself.' (= (12))

We can formulate this relation as follows.

(26) RX signals an anaphoric relation between X and Y iff

- a. Y is coreferential with it;
- b. Y is involved in an eventuality initiated by X.

The condition in (26a) is straightforward. The condition in (26b) states that an anaphoric-marked element must be an argument of the predicate concerned, as predicted by R&R's

definition. That is, this formulation remains an alternative stipulation of R&R’s definition.

Possessive relation Superficially non-possessive DPs without *öör-in* but with RX involve either a possessive relation or a situational relation. When a possessive relation is obtained, the absence of *öör-in* is optional, as exemplified in (27).

- (27) Baatar (öör-in) nom(-ig)-oo mart-san. (possessive relation)
 Baatar-NOM self-GEN book-ACC-RX forget-PST
 ‘Baatar forgot his own book.’ (= (18/19))

Let us formulate the possessive relation RX signals as follows.

- (28) RX signals a possessive relation between X and Y iff
 a. Y is possessed by X;
 b. Y is involved in an eventuality initiated by X.

Note that the condition in (28b) is not redundant because without it, RX is not needed. In expressing a possessive relation, RX must be licensed in a clause or in a subject-predicate structure. RX must not be present in possessive nominals that do not participate in an action performed by the possessor. For example, the Mongolian counterparts of *John forgot Bob’s book* or *John forgot his brother’s book* disallow RX on the possessum *book*.

Situational relation For RX to signal a situational relation, the determiner *nögöö*, which literally translates as “the other”, is preferred instead of the genitive anaphor *öör-in*, as exemplified in (29). *Nögöö* here, which often comes with a relative-clause nuance,¹¹ indicates that the book has appeared in the discourse and is an old information. *Nögöö nom* was translated as “the book which we talked about recently” by Guntsetseg (2011). However, *nögöö* does not necessitate the book’s connection with a prior event. It is not necessarily the case that an actual conversation about the book took place prior to the speech time. *Nögöö* instead entails that the referent of the noun is engaged in two eventualities including the proposition uttered in the sentence and the one in a presupposition. When cooccurring with RX, *nögöö* requires that the initiator of the presupposed eventuality be the same as that of the proposed eventuality. Therefore, a more appropriate interpretation of (29) would be “Baatar has read the book which he is obligated to read”.

- (29) Baatar nögöö nom-oo unš-san. (situational relation)
 Baatar-NOM that book-RX read-PST
 ‘John read the book (which we talked about recently).’ (adapted from Guntsetseg 2011)

Let us refer to such relative clauses, underlined in (29), as “hidden relative clauses”, just for

¹¹ When used for expressing situational relations, *nögöö* is functionally equivalent to the “the ... that the subject ...” configuration in English. For example, *nögöö nom* in (29) is most likely used in a context in which, for example, I have a duty of doing something about a book and I speak of it in an utterance. In this sense, the hidden relative clause denotes a “duty” event in the speaker’s presupposition. This property of *nögöö* makes it very subject to Kayne’s (1994) analysis of relative clauses. *Nögöö* can also be used in its prototypical meaning, without expressing a situational relation. In that case, *nögöö nom* means “the other book”, rather than “the ... that the subject ...”, with no relative-clause nuance available.

simplicity purposes. Hidden relative clauses can have overt counterparts, where the relative subject must be coreferential with the matrix subject. For overt relative clauses, RX signals a situational relation between the noun (or the DP) and the subject, as is the case with *nögöö nom*. In (30), the lesson is not possessed by the subject but has a relation with it, which is imposed by the situation in which the subject performs a learning action on the lesson.

(30) Baatar sur-san hičeel-ee mart-san.
 Baatar-NOM learn-PST lesson-ACC-RX forget-PST
 ‘Baatar forgot the lesson that he learned.’

The function of RX here is to indicate that the lesson is already related to the subject in the embedded proposition when it occurs in the matrix proposition, where the proposed eventualities share the same subject. In other words, RX functions to indicate the same-subject of the two predicates. From this, the formulation below follows.

(31) RX signals a situational relation between X and Y iff Y is involved in two eventualities initiated by X.

The *iff*-conditional in this formulation can be decomposed into two separate conditions in parallel to those in (28) and (29): a. Y is involved in an eventuality initiated by X, and b. Y is involved in another eventuality initiated by X.

A situational relation can also be established between an action and its performer. That is, RX, when attached to a clausal argument, signals a situational relation between the subordinate clause and the matrix subject. In (32), the subject performs an asking-for-leave action, where a relation naturally arises between the subject and the action. Notably, the action enters into a relation with the subject for the second time by virtue of participating in the forgetting event performed by the subject. RX is present there to indicate that the asking-for-leave action as a participant of the forgetting action has a situational relation with the subject and that the actions share the same subject.

(32) Baatar cölöö guya-h¹²-aa mart-san.
 Baatar-NOM ask for leave-NFIN-RX forget-PST
 ‘Baatar forgot to ask for leave.’

From this, a different formulation of a situational relation follows.

(33) RX signals a situational relation between X and Y iff
 a. Y is an eventuality initiated by X;
 b. Y is involved in an eventuality initiated by X.

Combining the two formulations in (31) and (33), the following obtains.

¹² Here, no accusative case marker is present.

- (34) RX signals a situational relation between X and Y iff
- a. Y is or is involved in an eventuality initiated by X;
 - b. Y is involved in an(other) eventuality initiated by X.

It then follows that the necessary condition for RX to occur with any of the three relations is that Y is involved in an eventuality initiated by X. This condition echoes R&R's λ -predicate, which serves as the necessary condition of reflexivity, according to (2) and (4). The first condition in each formulation serves as another necessary condition for RX to express each type of relation.

An important question to arise here is whether the conditions in a. are underlain by a more basic condition, which serves to be the source of reflexivity marked by RX. This is one of our primary concerns in the remainder of this paper. A detailed discussion is provided in sections 4 and 5. To that end, we scrutinize the same-subject property related to the reflexive semantics of RX in what follows.

Same-subject relation As noted above, the possessive anaphor *öör-in* always calls for the presence of RX on the possessed NP as in *öör-in nom-oo* 'one's own book' in a non-nominative position, as in (36). Importantly, *öör-in* itself can host RX, as exemplified, as in (35). That is, the host of RX is optional; it is either *öör-in* or the NP. However, *öör-in* is not obligatory at PF and when it is absent, RX is attached to the possessum, as exemplified by (37).

- (35) Baatar öör-in-öö nom-ig mart-san.
 Baatar-NOM self-GEN-RX book-ACC forget-PST
 'Baatar forgot his (own) book.'

- (36) Baatar öör-in nom(-ig)-oo mart-san.
 Baatar-NOM self-GEN book-ACC-RX forget-PST
 'Baatar forgot his (own) book.'

- (37) Baatar nom(-ig)-oo mart-san.
 Baatar-NOM book-ACC-RX forget-PST
 'Baatar forgot his (own) book.'

Two RXs, each for *öör*, which is the possessor, and the object, which is the possessum, are not allowed.

- (38) *Baatar öör-in-öö nom(-ig)-oo mart-san.
 Baatar-NOM self-GEN-RX book-ACC-RX forget-PST
 'Intended meaning: Baatar forgot his (own) book.'

RX is disallowed for an object that is not "possessed" by the subject. Therefore, (39) will be out under the reading that Baatar forgot someone else's book.¹³

¹³ "Possession" in question is virtual possession, rather than actual possession, which is defined in a strict sense. It always extends to include a dealing-with relation. For example, in (8-9), when the possessive pronoun *öör-in* is absent, the book is either actually possessed by the subject or acted on (that is, dealt with) by him, or both. For a

- (39) *Baatar nom(-ig)-oo mart-san.
 Baatar-NOM book-ACC-RX forget-PST
 ‘Intended meaning: Baatar forgot someone else’s book.’

Unlike the possessive anaphor *öör-in*, which can be separated from RX, a possessive NP must not be separated from RX. In (40), *bagš* ‘teacher’ denotes the subject’s teacher. However, RX is not attached to *bagš* but rather to *nom* ‘book’, which is not possessed by the subject, which leads to the ungrammaticality of the sentence.

- (40) *Baatar bagš-in nom(-ig)-oo mart-san.
 Baatar-NOM teacher-GEN book-ACC-RX forget-PST
 ‘Intended meaning: Baatar forgot his teacher’s book.’

RX can be attached to *bagš* when the teacher, denoted by *bagš*, is Baatar’s teacher.

- (41) Baatar bagš-in-aa nom-ig mart-san.
 Baatar-NOM teacher-GEN-RX book-ACC forget-PST
 ‘Baatar forgot his teacher’s book.’

Again, two RXs, each for the possessor and the possessum, are not allowed.

- (42) *Baatar bagš-in-aa nom(-ig)-oo mart-san.
 Baatar-NOM teacher-GEN-RX book-ACC-RX forget-PST
 ‘Intended meaning: Baatar forgot his teacher’s book.’

In summary, in the context in which the subject NP2 is coreferential with the possessor of NP1, the possessor must be realized or interpreted as the pronoun *öör-in*, and the host of RX varies between *öör-in* and NP1. If NP2 is not coreferential with NP3, which is the possessor of NP1, then NP3 is necessarily the host of RX.

(43) Distributional paradigm of RX in object NPs¹⁴

	NOM	GEN	ACC	Example
	NP2 _i	<i>öör</i> _i -RX	NP1 _j	(35)
	NP2 _i	<i>öör</i> _i	NP1 _j -RX	(36)
	NP2 _i		NP1 _j -RX	(37)
*	NP2 _i	<i>öör</i> _i -RX	NP1 _{RELj} -RX	(38)
*	NP2 _i	NP3 _k -RX	NP1 _{RELj} -RX	(42)
	NP2 _i	NP3 _k -RX	NP1 _j	(41)
*	NP2 _i	NP3 _k	NP1 _j -RX	(40)

detailed discussion of the interpretive properties of RX, see (Guntsetseg 2012: ch.3).

¹⁴ Case suffixes are all left out here, in (51), and (59).

When RX is attached to a noun that heads an NP containing an object relative clause, the subject of the relative clause must be the genitive anaphor *öör-in*, which is coreferential with the matrix subject. The relative subject *öör-in* may be either absent as in (44) or present as in (45).

(44) Baatar sur-san hičeel-(ϕ)-ee mart-san.
 Baatar-NOM learn-PST lesson-ACC-RX forget-PST
 ‘Baatar forgot the lesson that he learned.’

The non-genitive anaphor *öör* is out. Note that in Mongolian, the subject of object relative clauses must be genitive, regardless of whether it is coindexed with the matrix subject. With *öör-in* present, the sentence sounds less natural to some speakers. RX is present on either *öör-in* or the noun. Two RXs are not allowed. The examples in (45-47) illustrate this.

(45) Baatar öör-in sur-san hičeel-(ϕ)-ee mart-san.
 Baatar-NOM self-GEN learn-PST lesson-ACC-RX forget-PST
 ‘Baatar forgot the lesson that he learned.’

(46) Baatar öör-in-öö sur-san hičeel-ig mart-san.
 Baatar-NOM self-GEN-RX learn-PST lesson-ACC forget-PST
 ‘Baatar forgot the lesson that he learned.’

(47) *Baatar öör-in-öö sur-san hičeel-(ϕ)-ee mart-san.
 Baatar-NOM self-GEN-RX learn-PST lesson-ACC-RX forget-PST
 ‘Intended meaning: Baatar forgot the lesson that he learned.’

If the relative subject is not coreferential with the matrix subject but possessed by it, then RX is attached to it.

(48) Baatar bagš-in-aa zaa-san hičeel-ig mart-san.
 Baatar-NOM teacher-GEN-RX teach-NPST lesson-ACC forget-PST
 ‘Baatar forgot the lesson that his teacher taught.’

RX is out when switch reference (SR) is obtained between the relative subject and the matrix subject.

(49) *Baatar bagš-in zaa-san hičeel(-ig)-ee mart-san.
 Baatar-NOM teacher-GEN teach-NPST lesson-ACC-RX forget-PST
 ‘Intended meaning: Baatar forgot the lesson that his teacher taught.’

For a subject relative clause, RX is present on the object, which is possessed by the subject, as exemplified below.

(50) Baatar gee-gd-sen nom(-ig)-oo olž ab-san.
 Baatar-NOM lose-PS-PST book-ACC-RX find-PST

‘Baatar has found his book that was lost.’

In summary, we obtain the following paradigm for object NPs containing (object) relative clauses, notated as NP_{REL}.

(51) Distributional paradigm of RX in object NPs with (object) relative clauses

	NOM	GEN	ACC	Example
	NP2 _i	öör _i -RX	NP1 _{RELj}	(46)
	NP2 _i	öör _i	NP1 _{RELj} -RX	(45)
	NP2 _i		NP1 _{RELj} -RX	(44)
*	NP2 _i	öör _i -RX	NP1 _{RELj} -RX	(47)
	NP2 _i	NP3 _k -RX	NP1 _{RELj}	(48)
*	NP2 _i	NP3 _k	NP1 _{RELj} -RX	(49)

Turning to the case in which RX is attached to a nonfinite verb signaling the boundary of an object clause, the embedded subject, mostly implicit, must refer back to the matrix subject.

(52) Baatar buruud-san-aa meder-sen.
 Baatar-NOM go wrong-PST-RX admit-PST
 ‘Baatar admitted that he was wrong.’

However, the presence of the embedded subject in the form of *öör-in* makes the sentence sounds a bit less natural to some speakers.

(53) Baatar öör-in buruud-san-aa meder-sen.
 Baatar-NOM self-GEN go wrong-PST-RX admit-PST
 ‘Baatar admitted that he was wrong.’

When RX is present on *öör-in*, the sentence still sounds less natural than the case with *öör-in* absent but not unacceptable. The lexical semantics and (non)finiteness of the verb and pragmatics may affect the acceptability.

(54) Baatar öör-in-öö buruud-san-ig meder-sen.
 Baatar-NOM self-GEN-RX go wrong-PST-RX admit-PST
 ‘Baatar admitted that he was wrong.’

(55) #Baatar öör-in-öö unta-h-ig mart-san.
 Baatar-NOM self-GEN-RX sleep-NFIN-ACC forget-PST
 ‘Baatar forgot to sleep.’

RX is disallowed to be present on *öör-in*, when RX is present on the verb.

(56) *Baatar öör-in-öö buruud-san-aa meder-sen.
 Baatar-NOM self-GEN go wrong-PST-RX admit-PST

‘Intended meaning: Baatar admitted that he was wrong.’

RX is out when SR of subjects is obtained, as shown below.

(57) *Baatar Bat-in buruud-san-aa med-sen.
 Baatar-NOM self-GEN go wrong-PST-RX know-PST
 ‘Intended meaning: Baatar realized that Bat was wrong.’

RX can be present on the genitive subject in the object clause when it is possessed by the matrix subject, as shown below.

(58) Baatar bagš-in-aa buruud-san-ig med-sen.
 Baatar-NOM teacher-GEN-RX go wrong-PST-ACC know-PST
 ‘Intended meaning: Baatar realized that his (=Baatar) teacher was wrong.’

Summing up, we obtain a similar distributional paradigm of RX for the “nominalized” nonfinite verb heading an object clause.

(59) Distributional paradigm of RX in object clauses

	NOM	GEN	ACC	Example
	NP1 _i	öör _i -RX	V	(54)
	NP1 _i	öör _i	V-RX	(53)
	NP1 _i		V-RX	(52)
*	NP1 _i	öör _i -RX	V-RX	(56)
	NP1 _i	NP2 _j -RX	V	(58)
*	NP1 _i	NP2 _j	V-RX	(57)

In conclusion, RX signals a dependency between subjects and non-nominative elements, which are either embedded subjects or possessors in object DPs, and is incompatible with SR. RX is always attached to the possessum when the possessor is an NP subject, whether it is of matrix clauses or of object clauses. It is attached to the possessor only when the possessor is the genitive *öör-in* that is coreferential with a subject.

A few remarks on switch reference are in order. Striling (1993: 6), on the basis of investigating North American languages and others, states that SR holds between just two clauses that are structurally local and linearly adjacent. SR markers often occur in the dependent clause. However, markers for conjoint reference of subjects are also observed, as opposed to SR markers. In either case, there will be a marker that distinguishes different subjects or identifies one as another, avoiding confusion or misunderstanding. This is exactly what *the Inability to Distinguish Indistinguishables* as a general property of computational systems (Reuland 2014) predicts. XXX observes that Mongolian is one of the languages taking the option of marking distinctness, not identity, of subjects. He views that the differential-subject marking property and the reflexive-possessive property (RX) of Mongolian represent two separate grammatical systems of SR in the language. To me, however, Mongolian takes both options; that is, Mongolian has a differential-subject marking property (Guntsetseg and Klein

2009; von Heusinger et al. 2011; Guntsetseg 2012; Hsiao 2012), a SR property, for marking disjoint reference of subjects, and RX for marking conjoint reference of subjects, both of which have the same effect of avoiding confusion. The properties of RX summarized in (43) suggest that marking conjoint reference is not limited to clauses; it is required between a clause and a possessive DP, in which the possessor acts as an embedded subject in one way or another. This is what RX contributes in the grammatical system concerned.

3.2. Binding properties of RX

Compared with other languages, Mongolian has rarely been researched in the context of binding theory. However, what is named “Ерөнхийлөн Хамаатуулах Нөхцөл/Ёс” in Mongolian grammar, which literally translates as “Approximately Relating Condition/Principle”, is comparable to what is referred to as “Principle A” (SBT) in generative grammar. As RX, which is the hallmark of this principle in addition to reflexivity, is often referred to as a reflexive-possessive marker in the literature available in English, I call this condition (Ерөнхийлөн Хамаатуулах Нөхцөл/Ёс) “Reflexive-Possessive Principle (RPP)”. Few studies except Hideki et al. (2015) and Gong (2023) have attempted to elucidate the binding nature of RPP and/or RX.

Three binding-related properties of RX are particularly notable. First, RX is never attached to a nominative phrase.

(60) Attaching to nominative disallowed:

- a. *Baatar-in bagš-aa hiĉeel zaa-san.
Baatar-GEN teacher-NOM-RX lesson-ACC teach-PST
'Baatar's teacher taught a lesson.'
- b. *Nom(-ig)-oo huuĉir-san.
book-NOM-RX become old-PST
'(Someone's) book got aged.'

Second, it is licensed by a local subject, not by a non-local subject. *Muur* 'cat' is within the object clause with *Bat* as its subject, rather than within the matrix clause with the nominative subject *Baatar*. Therefore, *muur*, the host of RX, is interpreted as being possessed by or related to *Bat*, not *Baater*.

(61) Bound by local subject:

- Baatar Bat-in muur(-ig)-aa üns-sen-ig har-san.
Baatar-NOM Bat-GEN cat-ACC-RX kiss-PST-ACC see-PST
'Baatar saw that Bat kissed his cat (= Bat's cat).'

Third, it is blocked by SR, as noted in section 3.1.¹⁵ In (62a), the book is possessed by the teacher but is involved in an eventuality initiated by the subject, who refers to an individual other than the teacher. The necessary conditions in (34) are not satisfied simultaneously. That is, RX fails to occur on the noun due to the failure of the conjoint reference between the

¹⁵ This is a typical property of RX as an anaphoricity/reflexivity marker, which entails the explicit or implicit existence of an anaphoric element within the same nominal domain, as predicted by Reuland's (2014: 22) description that anaphors, unlike pronouns (his pronominals), do not allow split antecedents.

possessor and the subject. In (62b), the book is involved in two eventualities initiated by different subjects, deviating from (34). The failure of the conjoint reference between the subjects prevents RX from occurring on the noun concerned, namely *nom* ‘book’.

(62) Switch reference disallowed:

- a. *Baatar bagš-in nom(-ig)-oo mart-san.
 Baatar-NOM teacher-GEN book-ACC-RX forget-PST
 ‘Intended meaning: Baatar forgot his teacher’s book.’
- b. *Baatar bagš-in ög-sen nom-ig-oo mart-san.
 Baatar-NOM teacher-GEN give-ASP book-ACC-RX forget-PST
 ‘Intended meaning: Baatar forgot the book the teacher gave him.’

Importantly, these properties resemble the properties of Binding Principle A — an anaphor must be bound within its binding domain. Three uncontroversial facts about Binding Principle A are notable in English and many others. First, the reflexive marker *self* is out in nominative position.¹⁶ Second, anaphors, which contain *self*, are bound by a local subject.¹⁷ Third, rebinding is disallowed. For example, in (65), *herself* is bound by *Martha*, which is a local subject, within the DP and is inaccessible for rebinding by *Heidi* within the CP, a larger domain containing a potential antecedent.

(63) Attaching to nominative disallowed:

*Chris_i said [_{CP} that himself_i was appealing].

(64) Bound by local subject:

John made her_i love herself_i.

(65) Rebinding disallowed:

[_{CP} Heidi_i believes [_{DP} Martha_j’s description of herself_{*i/j}]].

The following description of (62) and (65) helps clarify the resemblance between the third property of RPP and that of Principle A. In (62), *bagš* ‘teacher’, the subject of the relative clause, is not coreferential with *Baatar*, the matrix subject, which leads to the failure of RPP. This is because *nom* ‘book’ is first related to the subject of the my clause, *bagš* ‘teacher’,¹⁸ before the merger of the matrix verb, and then it (*nom* ‘book’) enters a situational relation again, but this time with the matrix subject. That is, RPP applies to the same item twice, leading to ungrammaticality. In (65), *Martha* binds (*her* in) *herself* and therefore there cannot be another NP, say *Heidi*, to bind it. If *herself* is bound twice, the derivation crashes at LF.

¹⁶ Notice that sentences such as the following do not serve as counterexamples of the conclusion that *self* is excluded in a nominative position. In (i), *himself* arguably functions as an adjunct rather than an argument.

(i) I expected Bill_i to win even when he_i himself didn’t. (Culicover and Jackendoff 2005: 297)

¹⁷ The so-called “local subject” includes a nominative or accusative subject of my clause and a genitive subject of nominalized “predicate” such as *description*.

¹⁸ On the surface, this subject is genitive but not nominative because it is not a matrix subject. *Hičeel* ‘lesson’ itself remains bare, without being directly attached by RX in the hierarchical structure. Hierarchically, RX is attached to the whole DP but linearly it is attached to the head noun *hičeel*.

These facts suffice to indicate that RPP in Mongolian is a special type of binding, with RX behaving in a similar way to *self*, as described below. Binding Principle A with *self* can be viewed as a type of simplex dependence in the sense that in *John loves pictures of himself*, for example, *John* and *him* in the anaphor *him-self* are coreferential, where *self* is employed as a marker of the coreferentiality/reflexivity. In contrast, RPP is a complex dependence in the sense that in, for example, (67), *Baatar* and the possessive anaphor *öör-in* ‘own’, the genitive form of *öör* ‘self’, are coreferential, where RX is employed as a marker of the coreferentiality/reflexivity. Morphologically, *self* is present on the possessor, while RX is present on the possessum.

(66) *John_i loves pictures of him_i-SELF.*

(67) *Baatar_i öör_i-in nom(-ig)-oo mart-san.*
Baatar self-GEN book-RX forget-PST
 ‘Baatar forgot his own books.’ (= (17))

For Binding Principle A with *self*, the binder and the bindee are present simply as an antecedent, e.g., *John* in (66), and the accusative pronoun in an anaphor, e.g., *him* in *him-self*.¹⁹ In contrast, for RPP, the binder is present as a nominative subject, e.g., *Baatar* in (67), and the bindee is optionally realized as the genitive pronoun *öör-in*. Most importantly, both the reflexive markers *self* and RX are attached only to non-nominative elements that resist rebinding and both are licensed by a local subject.

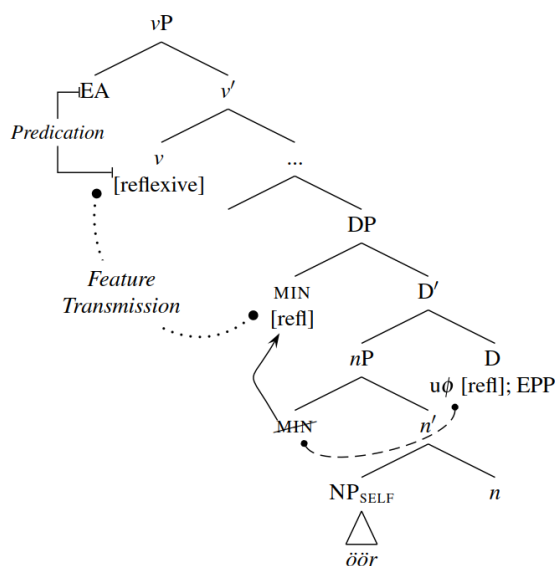
3.3. Categorical status of RX

It is quite clear from the above discussion that in Mongolian it is RX rather than the anaphor *öör* that is the reflexive marker. Note that *öör* can be absent while RX is always required in a reflexive context.

With respect to the categorial status of RX, traditional grammarians refer to it as a suffix, without discussing its exact status. Among theoretical studies, Hideki et al. (2015: 67ff) labeled RX “pronouns” and Gong (2023) treated it as a D head. Hideki et al. (2015: 67ff) proposed that RX undergoes LF movement to its antecedent, e.g., the subject. However, RX can never be an element that can be characterized as a reflexive pronoun. It lacks a specification of any nominal features, which a pronoun may have. Functionally, RX is similar to anaphors (or reflexive pronouns), but it should belong to a different category. According to Gong (2023), RX as a D head selects *nP*, where *öör*, she assumes, is a noun much like a common noun.

(68) Nature of RX: Gong (2023: 5)

¹⁹ However, the accusative pronoun in anaphors is not the only type of bound indexical in English.



Gong (2023) made the following specific proposals.

(69)RX (her REFL.POSS -AA) signals agreement with a minimal pronoun bound by the closest v which introduces the local subject.

- i. Binding mechanism: Binding by v .
- ii. Nature of bound (reflexive) pronoun: Minimal Pronouns (MIN)
- iii. Morpho-syntactic source of -RX: Feature Transmission

Gong's (2023) proposal follows from Kratzer's (2009), who argues that it is the local functional head v rather than an antecedent DP that serves as the binder of reflexives, which acquire their phi-feature set from v via Feature Transmission under Binding (FTUB).

(70)Feature Transmission under Binding (Kratzer 2009: 216)

The ϕ -feature set of a locally bound pronoun unifies with the ϕ -feature set of the head that hosts its binder.

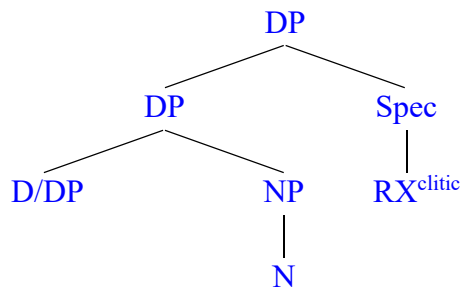
On this account, reflexives are elements born without ϕ -features, which Kratzer (2009) called MIN, for minimal pronoun. Following Kratzer (2009), Gong (2023) assumes that there is MIN in Mongolian, which is base-generated in Spec of nP, sharing ϕ -features with D, and moves to Spec of DP due to EPP on D. Having moved to Spec of DP, MIN remains in the same domain as v . FTUB applies and MIN receives the feature [ref], for reflexivity, from v . Since MIN shares this feature with D, as a result it is present on three heads including v , MIN, and D, and is spelled out as RX on D.

However, assuming RX as D fails to account for the fact that RX is always the outermost element within a DP; it follows any other nominal suffixes including those for number and case. Assuming it as a feature receiver is also problematic with FTUB, which itself, as discussed by Reuland (2020: 5), is an inappropriate assumption given that feature transmission is not feature valuation but rather a feature checking.

Given that RX is an outermost element in a DP, it is supposed to occupy an

adjunct/specifier position. However, this would mean that it is a phrasal element, contra the fact that it does not display any properties displayed by phrases; it lacks a specification of phi-features (person, gender and number) and is unable to move. This in turn indicates that it is a head-like element.²⁰ This ambivalent property of RX suggests that it in fact is a clitic-like element. Note that clitics are generated as specifiers of a null head (Bošković 1997b; 2002b). This leads us to the following representation, in which RX sits in the rightmost specifier of DP.²¹

(71) RX as a clitic:



In this structure, D/DP takes care of phi-features, which are acquired via feature valuation (Agree) in the case of determinative elements including pronouns such as *ter*, anaphors such as *öör*, and possessive head such as *-in*, and NP/N represents a lexical core, if any, which serves as the host of RX in the linear structure. Notably, RX is a nominal clitic, unlike, for example, what is referred to as the “reflexive clitic” *se* in Slavic languages, which is identified as a verbal clitic (Reinhart 2016: 189-191).

The status of RX as a reflexive licenser presents it as a novel case in which reflexivity can also be licensed by a nominal clitic. Reflexivity with RX does not seem to belong to any of the five categories of reflexives presented by Dechaine and Wiltschko (2017). Dechaine and Wiltschko (2017: 64ff) argued that five well-established positions including D, phi, Class, n, or N are available in the extended projection of the nominal phrase, each being associated with a reflexive form. Note that RX is even above D, as indicated by the data discussed above. RX arguably occupies a position closer to the head of KP (Kase phrase). This status of RX brings to us a question of what it can mean for the theory of reflexivity. Relevant discussion is given in the next section.

4. What is reflexivity?

This section is devoted to identifying a more general principle of reflexivity that underlies the three kinds of relations RX signals as well as R&R’s reflexivity. We first need to explicate what a reflexive relation and a possessive relation RX signals have in common. For convenience, I repeat the three formulations below.

²⁰ See Chomsky (1995a) and Bošković (1997b; 2002b) for relevant discussion on the ambiguous property of clitics, which behave like both X^0 or XP.

²¹ See Bai (2024c) for a detailed discussion on the categorial status and position of RX.

- (72)RX signals a reflexive relation between X and Y iff
- Y is coreferential with it;
 - Y is involved in an eventuality initiated by X. (= (26))

- (73)RX signals a possessive relation between X and Y iff
- Y is possessed by X;
 - Y is involved in an eventuality initiated by X. (= (28))

- (74)RX signals a situational relation between X and Y iff
- Y is or is involved in an eventuality initiated by X;
 - Y is involved in an(other) eventuality initiated by X. (= (34))

Crucially, the Mongolian facts examined in sections 2 and 3 as well as those about reflexivity reported in the literature strongly suggest that anaphors are spell-out forms of a possessive DP structure. That is, an anaphoric relation is in fact a subcase of a possessive relation.

To elaborate on this issue, recall that in Mongolian *bey* ‘body’ can be used the same way as the anaphor *öör*.

- (75) Baatar_i öör_i/*j-ig-öö šüümjil-sen.
Baatar-NOM self-ACC-RX criticize-PST
‘Baatar criticized himself.’ (= (23))

- (76) Baatar_i bey_i/*j-ee šüümjil-sen.
Baatar-NOM body-ACC-RX criticize-PST
‘Baatar criticized himself.’ (= (21))

- (77) Baatar_i öör_i/*j-in bey-ee šüümjil-sen.
Baatar-NOM self-GEN-body-ACC-RX criticize-PST
‘Baatar criticized himself.’ (= (22))

The contrast between the last two sentences shows that *bey* in this use is logically a possessum, possessed by *öör*, which behaves like a possessor, referring back to the subject. In this sense, *bey* is the lexical core and *öör-in* is the possessive determiner within the DP structure as represented below.

(78) [XP ... subject ... [DP possessor [D' D [N]]]

(79) [XP ... Baatar ... [DP *öör* [D' -in [*bey*]]]

This is supported by and accounts for the fact that languages allow bodypart anaphors such as *kò a li* in Haitian Creole (Rooryck and Vanden Wyngaerd 2011: 40), Chinese *zi-shen* ‘self’s

body’ and Japanese *zi-sin* ‘self’s body’.²² These anaphors all behave in a very similar way to Mongolian *öör-in bey*. They all literally mean “self’s body”. Differences among such languages in the morho-syntactic properties of anaphors are supposedly related to their lexicalization, which took place diachronically, as well as language-specific ways of deriving pronouns and anaphors. Under a framework such as Distributed Morphology (Halle and Marantz 1993; Embick and Marantz 2008), all these elements can be analyzed as spelling out one or more single terminal nodes resulting from an operation such as fusion.

Assuming that the structure in (77) holds universally, what is selected by D, a possessive determiner head, is either a noun (phrase) with maximal lexical content or a root-like noun with minimal lexical content. In any case, there is a lexical core selected by D. The way of lexicalizing DP, which is not universal, then varies among languages. One language may allow a single morphological unit to spell out any two or all of the D head, its specifier and its complement N, while another may allow respective morphemes for the three elements. Due to economy principles about spelling out,²³ it is expected that redundancy of morphology is diminished so that any of the three can and even must be absent from PF.

Conceptually, a possessive-possessum relation is a kind of subject-object relation mediated by a functor. In this regard, the predicate is something like “*x holds y*”, where *holds* is a possessive predicate, *x* is an external argument,²⁴ and *y* is an internal argument. Roversi (2024) observes that an abstract transitive verb, what he calls POSS, takes the possessor as its external argument and the possessum as its internal argument, which gives rise to exactly the same possessive semantics as the nominal head ‘s’.

(80) [VP possessor [v’ POSS [DP possessum]]] (Roversi 2024: 2)

Roversi (2024) argues that in languages such as Äiwoo possessive DPs are derived by relativization of the possessum, as shown below.

(81) Derivation of *my book*:

[DP book_i [RC ... [VP I [v’ POSS [DP _____i]]]]] (based on Roversi 2024)

This derivation, according to Roversi (2024), is not supposed to be universal. However, it provides us with a way into the logical structure of possessums. On the basis of (81), we paraphrase (82) as (83).

(82) Pasha loves her cat.

(83) Pasha loves the cat she holds/possesses/has.

²² The details of Chinese and Japanese anaphors are given in section 6.

²³ See (105) and the relevant discussion in section 5.

²⁴ R&R (1993) and many others also treat the possessor in a possessive DP as an external argument/subject. By this, R&R (1993: 682) explained the difference in grammaticality between the following sentences. In (ib), *your* is present as the subject of a semantic predicate and therefore subject to Condition B in (2), leading to the ungrammaticality, with no coindexation obtained between it and *herself*.

(i) a. Lucie liked [(a) picture of herself].
b. */?Lucie liked [your picture of herself].

(84)[_{XP} Pasha_j [_{VP} love [_{DP} cat_i [_{RC} [_{VP} she_j [_{v'} ____i]]]]]]]

Note that we are not trying to derive possessive DPs by relativization. We are instead representing the logical syntax of them.²⁵ Given this, reflexivity arises between the subject and the possessor, which is “the subject of an implicit relative clause”, not between the possessum and the subject. Alternatively speaking, reflexivity arises from the identity between external arguments, one of which serves to be the subject and another serves to be a possessor. This goes contrary to R&R’s definition, which requires that reflexivity arises between external and internal arguments. Specifically, the following obtains.

(85) Reflexivity arises between specifiers, not between a specifier and a complement.

This brings anaphoricity, possessivity and a situational relation under a unified frame. Recall that a situational relation holds between two subjects, one being matrix another being embedded. Note that the embedded subject may be one of an abstract (hidden) relative clause, as indicated by our description of the *nogöö* example in section 3.1.

Given this, it is same-subjectness that is the source of reflexivity. Therefore, the three relations RX signals turn out to be distinct spell-outs of same-subjectness. Consequently, same-subjectness, I argue, is the most basic notion underlying various phenomena that would otherwise be taken under what we have called “reflexivity”.

Note that when I speak of same-subject, “subject” means either the subject of uttered clauses or that of abstract relative clauses in possessive DPs including radical possessives such as *my dog* and anaphoric possessives such as *my-self* and *öör-in bey* ‘self’s body’. The intimacy between possessive DPs and embedded clauses is also evidenced by genitive subject constructions. In English, nonfinite clauses can be nominalized, taking the *ing* form, with the subject, when present, being genitive. As observed by studies such as Abney (1987) and others, the morpheme *ing* spells out a nominalizing head that selects the verbal core as its complement to form an NP and that the genitive subject occupies the specifier of a D head selecting the NP. In this sense, the genitive subject is some kind of possessor that holds the event as a possessum under its control.

(86) I learned about John’s smoking stogies. (Abney 1987: 109)

In Mongolian, the subject of relative clauses obligatorily takes genitive case and that of complement clauses optionally takes genitive case.²⁶

(87) Baatar bagš-in zaa-san hičeel-ig mart-san.

²⁵ Logical syntax is a formal representation of the output of the computational system with the degree of detail required by the inference system (and independently justified because of the requirements of the inference system); essentially, it is syntax with an extended vocabulary (Reuland 2011: 34). It is a representation of linguistic structure that is sufficiently fine grained to feed the inference system (Reuland 2014: 28).

²⁶ Either genitive or accusative case is chosen primarily, depending on the lexico-syntactic properties of the matrix verb. See von Heusinger et al. (2011) for more details.

Baatar-NOM teacher-GEN teach-NPST lesson-ACC forget-PST
'Baatar forgot the lesson that the teacher taught.'

(88) Baatar Bat-in cölöö guya-h-ig med-ne.
Baatar-NOM Bat-GEN ask for leave-NFIN-RX know-NPST
'Baatar knows Bat's asking for leave.'

Notably that genitive subjects are disallowed in clauses headed by *gež*, which acts as a complementizer (Gong 2022: ch.2), and that the verb endings *-san* and *-h* (as well as *-dag*), which are called adjectival verb suffixes in Mongolian grammar (Cinggeltei 1997: 266-268), signify the deficiency of C-properties. *-San* is special in that it expresses both past tense and perfective aspect and that it acts as an adjectivizing head, as in *hel-sen üg* 'spoken word'.²⁷ Note also that *-san* and *-h* can be attached by nominal case markers. These findings suggest that genitive subjects in Mongolian have to do with the noun-like status of their predicates,²⁸ which are not CPs. Kornfilt and Whitman (2011; 2012) observed that TPs (in Japanese and Turkish) are subject to nominalization, taking genitive subjects. Thus, the linkage between genitive subjects and nominalization of non-CP clauses is by no means arbitrary. It reflects a cognitive property that events, similar to entities, are "held" or "controlled" by their subjects. Thus, genitive subjects and nominalization of non-CP clauses make the subject-predicate relation resemble the possessor-possessum relation in possessive DPs. Both types of relations, I argue, come down to the abstract predicate *HOLD* (corresponding with Roversi's (2024) POSS).

(89)a. X holds Y in its possession (possessor-possessum);
b. X holds Y under its control (subject-predicate).

A similar approach is den Dikken (2006), who proposes a universal functional head RELATOR, which mediates between any pair of elements that occupy the specifiers and complement positions.

Genitive subjects are presumably more productive in Mongolian than in other languages. This makes the language unique: it employs RX for the two kinds of reflexivity that arise between two subjects and between a subject and a possessor. Therefore, RX is involved in a single grammatical system, although it might seem to be involved in two separate systems.

This being said, we now go back to our earlier question, initially raised by Reuland (2017a): What does the specialty of reflexivity tell us about the human language system? By observing the properties of RX and the interactions between Mongolian-specific principles such as RPP and various reflexive strategies in many other languages, a more general cognitive principle, which is expected to hold universally, is now fleshed out as follows.

(90) Reflexivity arises from and reflects same-subject.

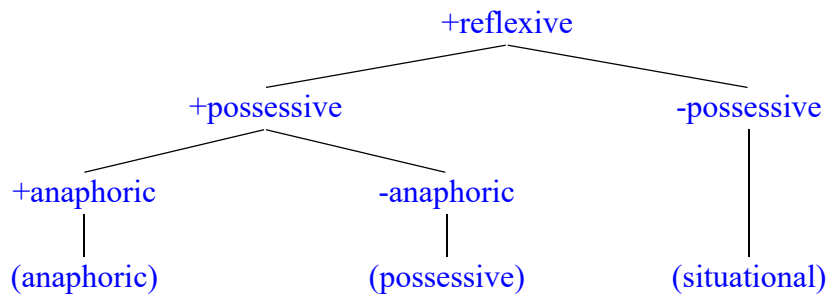
Reflexivity as such has three subtypes with binary divisions as shown in (91), where

²⁷ Kullmann and Tserenpil (2015: 139) call *-san* in this use "a noun determining suffix". Janhunen (2012: 161) labels it "perfective".

²⁸ See also Janhunen (2012: 159-160) for the nominalizing function of *-san*.

anaphoricity is included by possessive reflexivity and a situational relation sits outside possessivity. Alternatively, if there is more appropriate reasoning, one may approach a situational relation in terms of possessivity. In that case, it could be claimed that a situational relation, which does not entail literal ownership, is the most abstract one among the three levels of possessivity, where possessivity may be characterized on the basis of features such as [\pm protypical/canonical/abstract].

(91) Reflexivity and its subtypes



One final remark in this section concerns the question, initially raised by Reuland (2017a), of why reflexivity is so special. Reuland (2017a) is devoted to answering this question. The most important one of the potentially correct answers available is probably that reflexivity is necessitated by IDI, which reflects a third factor. In other words, IDI is a necessary condition for a linguistic context in which reflexivity is realized. One way to bring IDI under the same-subject approach is to connect it with the SR-resisting property of RX in Mongolian. As noted earlier, the SR-resisting property is a property that subjects of matrix and subordinate clauses or a local subject and a possessor must be coindexed when RX is present. That is, the sameness of subjects (or possessors as logical subjects) is indicated by RX, which is present on a governing category of the lower subject (or on the possessum). In other words, RX is present to identify one subject as another (or a possessor as a subject), as required by computational systems, which are unable to identify and distinguish linguistic items with conjoint reference, without indicators such as RX and many other forms.

5. What is a reflexive predicate?

Having characterized reflexivity, we are now to identify what qualifies as a reflexive predicate.

Under the λ -operator approach, a reflexive predicate is a λ -predicate that assigns two semantic roles to its coindexed arguments. Accordingly, *love* and its arguments form a reflexive predicate in (92a) but not in (92b) and (92c), which represent what are traditionally called possessive reflexive sentences (Reuland 2017a: 26).

- (92)a. Pasha_i loves herself_i.
- b. Pasha_i loves her_i cat.
- c. Pasha_i loves the cat of herself_i.

The λ -operator approach holds, in accordance with Condition A in (6), that when the SELF-

anaphor is not a syntactic argument of the predicate it does not have to be interpreted as a reflexivizer, but if it is it must (Reuland 2005b: 584). Given this, *her* in (92b) and *herself* in (92c) do not make the predicates reflexive as they are not syntactic arguments of it. Nor do *her* in (92b) and *herself* in (92c) make the predicates semantically reflexive since they are not bound by the same λ -operator, according to (2), regardless of their reflexive interpretation.²⁹ Reuland (2017a: 26-27) suggests that the bound interpretation of possessive pronouns are not syntactically encoded but represented only at the level of logical form (logical syntax in the sense of Reinhart 2006). Thus *her* in (92b) is translated as a variable in logical syntax, as illustrated below. This, however, would puzzle one as to why anaphors are not translated as variables in logical syntax.

(93) Pasha (λx (loves (x [x's cat]))) (Reuland 2017a: 26)

Under the same-subject approach pursued in this paper, no such paradoxes arise because this approach does not appeal to a λ -operator, which requires semantic roles to be assigned to coarguments. However, for example, *her* and *Pasha* in (92b) are not coarguments, although they are coindexed. Note that *Pasha* is assigned an external role in the matrix predicate while the possessive subject, say *her*,³⁰ is assigned an external role by the semantic predicate *HOLD*, which assigns internal roles to *cat* and *self*. Thus, possessive reflexivity and anaphoric reflexivity are accounted for in a unified way.

One apparent merit of the λ -operator approach is that it is par with the fact that, in many languages, a possessive pronoun such as *her* does the job that would otherwise be done by a possessive anaphor, which English-type languages reportedly lack, as predicted by the Absence of Principle B effects (Rooryck & Vanden Wyngaerd 2011) and R&R's Conditions A and B.

(94) Absence of Principle B effects (APBE)

Pronouns behave like anaphors when a dedicated class of reflexive pronouns is lacking (Rooryck & Vanden Wyngaerd 2011: 19).

(95) Conditions

A: A reflexive-marked syntactic predicate is reflexive.

B: A reflexive semantic predicate is reflexive-marked. (R&R 1993: 678)

Unfortunately, the λ -operator approach fails to account for why some languages do allow and even require possessive anaphors where possessive pronouns such as *her* are used in English. One such language is Mongolian, as noted in section 2. Other such languages include Russian and Norwegian (Reuland 2018: 12). In contrast, both anaphoric predicates, as in (92a), and possessive predicates, as in (92b), can be successfully captured by the same-subject approach in a unified way, as illustrated below.

²⁹ Under R&R's (1993: 670) original definition, which was replaced by (2) in Reuland (2011: 82), the predicates in (91b) and (91b) can be reflexive since *her* and *herself* are coindexed with the subject *Pasha*, although they are not bound by the λ -operator.

³⁰ It must be noted that "possessive", a semantic relation, is not "genitive", a morpho-syntactic one. *Him* in *himself* is morpho-syntactically genitive, but it is semantically possessor of *self* in logical syntax.

(96) A unified structure of anaphoric and possessive reflexives (informal):

- a. [_{VP} subject_i ... [_{DP} possessor_i [_{D'} D possessum]]] (D=*HOLD* in logical syntax)
- b. (92a): [_{VP} Pasha_i love [_{DP} *SHE*_i [_{D'} 's self]]] ('s=*HOLD* in logical syntax)³¹
- c. (92b): [_{VP} Pasha_i love [_{DP} *SHE*_i [_{D'} 's cat]]] ('s=*HOLD* in logical syntax)
- d. (92c): [_{VP} Pasha_i love [_{DP} ... [_{DP} *SHE*_i [_{D'} 's self]]]] ('s=*HOLD* in logical syntax)

Accordingly, no reflexive semantic predicate in the sense of R&R exists under the same-subject approach.

(97) Definitions of predicate (Reuland 2011: 82)

- a. The syntactic predicate formed of (a head) P is P, all its syntactic arguments, and an external argument of P (subject). (The syntactic arguments of P are the projections assigned **θ-role** or Case by P.)
- b. The semantic predicate formed of P is P and all its arguments at the level of logical syntax.

Nor does a reflexive syntactic predicate in the sense of R&R exist given that in Mongolian, for example, the possessor, which is the subject of *HOLD* in logical syntax, is not necessarily overt and therefore not assigned Case by it. One would say that the subject of *HOLD* is assigned the external role by it. However, *HOLD* itself is a semantic, not syntactic, predicate and therefore does not assign a role in narrow syntax.

(98) Baatar nom(-ig)-oo mart-san.
Baatar-NOM book-ACC-RX forget-PST
'Baatar forgot his own book.' (= (19))

Non-reflexive syntactic and semantic predicates may exist. The same-subject approach then leads to the following.

- (99) a. The antecedent subject is licensed by the syntactic predicate in the matrix clause.
- b. The embedded subject is licensed by the semantic predicate *HOLD*, which is embedded under the matrix predicate.

This would lead us to the following conclusion.

(100) No reflexive predicate exists.

However, this conclusion comes too abruptly because there seems to be a consensus that examples such as (92a) as well as those with patient-reducing verbs such as *wash* count as reflexive predicates. To get the right end, let us scrutinize the structure of the anaphor under

³¹ *Him* in *himself* is not a genitive form regardless of its status as a possessor. Note, however, that *my* in *myself* and others are genitive. This has to do with the way features such as phi and case are assembled in syntax and particular spell-out rules. See section 6 for a more detailed discussion.

each kind of approach, taking *Pasha loves herself* as an example.

- (101) Under the same-subject approach: [_{VP} Pasha_i love [_{DP} SHE_i [_{D'} 's [_N self]]]]
- D (=‘s) is a possessive determiner head in narrow syntax and a semantic predicate *HOLD* in logical syntax;
 - The referential part, that is, phi-features, occupy Spec-DP;
 - [phi] on Spec and [poss] on D (probably plus a Case feature) are spelled out as *her*;³²
 - Two predicates (one being matrix and syntactic, another being embedded and semantic) are involved in the sentence;
 - Neither of the two predicate is reflexive;
 - Reflexivity obtains between the matrix subject *Pasha* and the logical subject *SHE*, which is contained by the DP and therefore is assigned no semantic role by the matrix predicate and is not bound by its λ -operator.
- (102) Under the λ -operator approach: [_{VP} Pasha_i love [_{DP} [_{D'} SHE_i [_N self]]]]³³
- D is a referential determiner; logical syntax is irrelevant;
 - The referential part, that is, phi-features, occupies D;
 - [phi] on D (probably plus a Case feature) is spelled out as *her*;
 - Only one predicate (being syntactic and semantic) is involved in the sentence;
 - That predicate is reflexive;
 - Reflexivity obtains between the subject *Pasha* and *SHE-self*, which is assigned an internal role by the predicate and bound by its λ -operator.

(101) and (102) represent the distinct derivations of *she-self* and the source of its anaphoric reflexivity. If we are to maintain the view that such sentences indeed involve reflexive predicates, we need to abandon the same-subject approach and retain the λ -operator approach. However, the cost of doing so is much greater than that of retaining the same-subject approach, as noted earlier and noted below. An ideal solution is to maintain the same-subject approach and find a way to reconcile it with the treatment of *Pasha loves herself* as instantiating a reflexive predicate. The crux of matter in doing so is to keep reflexivity at both levels of logical syntax and morpho-syntax. In doing so, we need to consider the possibility of an eternal combination of a pronoun such as *she* (or *her*) and *self* as a kind of lexicalization. Technically, Spec with [phi], the head D and the root N have become an inseparable morphological unit, while retaining their logical syntactic properties such as a possessor-possesum relation, which is mediated by *HOLD*. This process, if there is truly one, is expected to have been driven by an economy principle like (107). However, the inseparability of an anaphor such as *herself* as a morphological unit does not necessarily mean that it is syntactically non-analytical. It then follows that in narrow syntax, anaphors like *herself* have both the structure in (101) and that in (103), but not that in (102).

³² See section 6 for more details.

³³ See R&R (1993: 658) for the details of their proposal.

(103) [DP *SHE*-self] (deprived of Case)

This entails that the representation in (101) is the first phase structure of anaphors, as is the case for verbs.³⁴ Ramchand (2008: 69ff) decomposes the internal structure of *break*, for example, into a three (or four)-layered structure as shown below.

(104) Katherine broke the stick.

[_{init}P Katherine broke [_{proc}P the stick <break> [_{res}P <stick><break> [_{XP} ...]]]]

The first phase syntax indicates the internally and featurally complexity of a single lexical item. I argue that this is also the case with anaphors. Accordingly, neither of the representations in (101) and (103) can be denied.

Returning to the question of whether sentences like (92a) count as reflexive predicates, the answer will be yes, given that (103) is decomposed into (101), with related information carried by Spec, D and N, or alternatively that (101) feeds (103). Note that logical syntax does not interfere with the exact process of the morpho-syntactic derivation of anaphors but has an impact on their semantic interpretations, which is (partly) produced in their first phase syntax. Consequently, reflexive predicates exist but are restricted to syntactic predicates, which normally take a (non-possessive) anaphoric object. It then follows that Condition A, not Condition B, proposed by R&R remains invalid. This is an unhappy result for the λ -operator approach, under which Condition B universally exists.

If the λ -operator approach was correct with both Condition A and Condition B, another question would remain unexplained: How can reflexivity as defined by R&R be taken to be universal, whereas APBE cannot? Note that Mongolian among many other languages lacks APBE. APBE itself is not problematic. What is problematic is the definition of reflexivity in a narrow sense under the λ -operator approach, which only takes anaphoric reflexivity as reflexivity, excluding possessive reflexivity. Additionally, the λ -operator approach leaves many of the crosslinguistic facts unexplained. To mention a few: 1) Why are body anaphors and bodypart anaphors of various types attested in many languages, given that bodyparts are subject to inalienable possession? 2) Why can the pronoun contained in a SELF anaphor be genitive as in *myself*? 3) Why do languages like Mongolian take the same form to spell out an anaphoric relation and a possessive relation as well as a situational relation? Coincidence-based explanations would not be satisfactory to these questions. If possessive reflexivity is not reflexivity, all such questions remain puzzles but all are unproblematic under the same-subject approach.

It is clear that the λ -operator approach in fact, at least partly, appeals to syntactic argumenthood. When the bound argument bearing the internal role is overt, it must occupy a syntactic argument position, as in *John washed himself*. The motivation of incorporating semantic argumenthood into the definition of reflexivity seems to partly lie in the R&R's intention to capture lexical reflexive predicates such as *wash*, which do not take syntactic arguments if we are to maintain the idea that syntactic arguments are not omissible. R&R proposed what is called *Reduction (+Bundling)* in accounting for such predicates.

³⁴ See Ramchand (2008) for elaboration on the first phase syntax of verbs.

(105) Reduction of an internal role

$V_{acc}(\theta_1, \theta_2) \rightarrow Rs(V)(\theta_1 - \theta_2)$

$V[Agent]_1 [Theme]_2 \rightarrow V[Agent-Theme]_1$ (Reuland 2014: 14)

However, Sportiche (2023: 21ff) provides evidence that such verbs are in fact transitives, whose the object is a silent *oneself* or *self*. Sportiche (2023: 23) adds that alternatively, when used reflexively, they involve a canonical body part and are thus cases of inalienable possession. In addition, theme-reducing verbs such as *wash* do not behave universally the same way. In Mongolian, for example, *ugaa* ‘wash’ requires the presence of the internal argument even when it is used in a reflexive sentence such as *Bi bey-ee uгаа-san* ‘I washed my body’. Under the same-subject approach, it may be the case that the reduction of the internal role does not take place; it does not undergo bundling with the external role. The absence of the internal argument for such verbs is not a reduction of the internal role, but rather a lack of morpho-phonological content of the whole DP, which would otherwise bear the internal role. The whole DP can be absent due to the minimal-nounhood of the “possessum” in the possessive DP as well as language-specific morpho-syntactic properties.³⁵

(106) $[_{DP} \text{ possessor } [_{D'} D [N/R(=\text{possessum})]]]$

Recall that the full structure of anaphors involves three elements, namely the possessor, the possessive D head and the possessed N. Any of these elements may lack morpho-phonological content, as required by an economy principle as informally stated in (107), which requires a smallest, in number and length of the syllables, morpho-phonological unit to spell out the elements and may even require nothing if the interpretation goes right.

(107) Use as few morphemes as possible, where other principles, if any, leave the choice open.

There is expected to be no independent universal constraint other than (107) on how the elements reach the morphological component. That is, language-specific morpho-syntactic rules are at play. Ultimately, the so-called reduction of the internal role of *wash* verbs turns out to be a parametric matter of morpho-syntax, with a semantic effect, but not simply a matter of semantics.

In summary, reflexive predicates, if there is a need of characterizing them, are syntactic predicates that assign semantic roles to their coarguments. This is basically the same stance as Condition A. In this characterization, the whole DP structure of the anaphor comes with an effect of “squeezing out” the Spec-D-N relation and a predicational interpretation, where, however, the semantic predicate *HOLD* is still at play. Note that logical syntax does not interfere with the exact derivation of anaphors. Therefore, it can be said that there “reflexive predicate” do not exist in the strict sense; what exists is a property of being “used-as-a-reflexive-predicate”.

³⁵ If we want to maintain that there is indeed reduction of internal roles, leading to lexical reflexivity of verbs such as *wash*, under the same-subject approach, it may be the case that object anaphors (of the predicate) with a first phase syntax are incorporated into the verb in one way or another.

6. What is an anaphor?

As described by many previous studies, anaphors are formed by means of a syntactic operation such as binding, although studies such as Reuland (2020: 3) hold that syntactic binding does not give rise to the syntactic category “anaphor”. The same-subject approach pursued in this paper, on the basis of cross-linguistic data, argues for a view that anaphors are formed by clustering features and a minimal noun, and form a homogenous class. Chinese, Japanese, English and Dutch are discussed. Note that (108), as the full structure of anaphors, holds universally.

(108) [DP possessor [D' D [N/R(=possessum)]]] (= (106))

On the basis of this, I present the following proposals and arguments for them.

(109) Nature of anaphors and pronouns

- a. A simplex anaphor is a bundle of a possessive feature, a reflexive feature and a nominal root with minimal lexical content.
- b. An anaphor contrasts a pronoun, which is a bundle of phi-features, lacking what a pronoun has.
- c. A complex anaphor is thus a bundle of what a simplex anaphor and a pronoun have.

Zi- in Chinese *zi-ji*, which is a simplex anaphor, is a morpheme that contributes to a reflexive interpretation (Reuland et al. 2020). The second part *-ji* behaves like a minimal noun or a nominal root. Interestingly, *zi-* can also take *-shen*, which literally means “body” (Inoue 2014: 23) to form an alternative anaphoric form *zi-shen* (Wang and Pan 2021: 16). Arguably, this also holds for *zi-ge'er*, in which *-ge* means “body” or “body size”. *Zi-shen* is always used adnominally and *zi-ge'er* is used adverbially, unlike *zi-ji*, which functions as both an adnominal and an adverbial in addition to arguments.

(110) Lisi zai zebei zi-ji.
Lisi ASP blame self
Lisi is blaming himself. (adapted from Tang 1989: 94)

(111) Ta budebu zhengshi zi-shen zuowei fuqin de buzhu.
he have to face up self as father GEN inadequacy
'He had to face up to his own inadequacies as a father.'
(Oxford Advanced Learner's English-Chinese Dictionary)

The following structure represents the formation of *zi-* anaphors in Chinese.

(112) [DP *zi-* [D' D [*-ji/shen/ge'er*]]]

Importantly, a pronoun such as *ta* ‘(s)he’ can select *zi-ji* to form a complex anaphor *ta zi-*

ji 'himself/herself'. Given that morpho-syntactically, a pronoun is just a bundle of phi-features and lacks lexical content (Reuland 2017a: 48), the following structure obtains.

(113) [DP D_[phi] D_[ref] [D' D_[poss] [N]]] (merger of (D heads with) features)

(114) [DP ta zi- [D' Ø [-ji/shen/ge'er]]] (lexical insertion)

The morphemes *ta*, *zi-*, and *-ji* spell out [phi], [ref] (for reflexivity), and N, respectively, with [poss] (for possessivity) lacking a morphological realization. [phi], [ref] and [poss] are located on three bare heads,³⁶ where D_[phi] and D_[ref] are present as stacked specifiers of D_[poss], which is the head of the phrase. This analysis is based on Davis (2023).

In Japanese anaphor *zi-sin*, *zi-* contributes a reflexive interpretation, as with the case of Chinese *zi-*, and *-sin* contributes a lexical interpretation as “body”, as is the case with Chinese *-shen*. The anaphor *mi*, which stands alone, literally means “body” (Nishida 2002: 272; Noguchi 2018: 2). Japanese has another *zi-* anaphor, namely, *zi-bun*, in which the prototypical meaning of *-bun* is “portion” or “part”, and this meaning is retained in the anaphor to some extent.

(115) Taroo-ga zi-bun-o semeta.
Taro-Nom self-Acc blamed
'Taro criticized himself.' (Tsujimura 2014: 255)

(116) John-ga kare zi-sin-o hihansi-ta.
John-NOM himself-ACC criticized
'John criticized himself.' (Nakamura 1989: 207)

Similarly, the pronouns *kare* 'he' and *kanozyo* 'she' can select *zi-sin* to form complex anaphors, whose derivation is represented below.

(117) [DP D_[phi] D_[ref] [D' D_[poss] [N]]] (merger of (D heads with) features)

(118) [DP kare zi- [D' Ø [-sin]]] (lexical insertion)³⁷

If this structure under the same-subject approach is on the right track, it has to explain non-possessive anaphors including SELF anaphors such as English *himself* and SE anaphors such as Dutch *zich*. Conceptually, SELF may correspond to the minimal noun N, which is “possessed” by the pronoun selecting it, say, *him*. Specifically, the entity with [3rd, m, sg], which is coindexed with a local subject, holds SELF. In this sense, *himself* is to be conceptually construed as *his-self*, with a possessive relation involved, as is the case with Mongolian *öör-in*

³⁶ In line with the theory of Bare Phrase Structure (Chomsky 1995a), Davis (2023) proposed that English genitive pronouns are created from features on D heads, which have an in-between status, without projecting phrases but occupying the specifier of another D head.

³⁷ Japanese has an even more complex form, *zi-bun zi-sin*. Studies such as Chen (2021) hold that *zi-bun zi-sin* is a compound of two *selves*. For the moment, I take the difference between Japanese and other languages reflected by *zi-bun zi-sin* to be a parametric matter of language-specific internal organizations of pronominal system and spell-out rules, with details left to future study. What remains the same is the structure in (106).

bey ‘own body’ and bodypart reflexives attested in many languages. With respect to why the pronoun in *himself* is the accusative *him* rather than the possessive *his*, a morpho-syntactic parameter is arguably at play. This is even more reasonable given that there are *myself* and *yourself* as well as *herself* in English.

(119) [DP D_[phi] D_[ref] [D' D_[poss] [N]]] (merger of (D heads with) features)

(120) [DP D_[phi, poss] [DP D_[ref, poss] [N]]] (clustering of features = fusion)

(121) [DP my [D' Ø [self]]] (lexical insertion)

As illustrated in (119-120), the features that enter the derivation separately undergo fusion, followed by application of the vocabulary insertion rule, which chooses the morpheme *my* for the fused outcome D_[phi, poss], as argued by Davis (2023) and Bai et al. (2025). *Self* is chosen for N. D_[ref, poss] is not spelled out overtly. Alternatively, D_[ref, poss] or D_[ref] is spelled out by *self*, with N lacking a realization.

In this sense, the semantic predicate *HOLD* is present in English anaphors such as *myself*, which can be paraphrased by “I hold SELF”. The difficulty of speakers’ interpreting *self* as a possessum arguably lies in the fact that it is highly grammaticalized, having lost its intensifying function to a great extent. Yet *self* is not entirely empty in meaning. Its occurrence in anaphors is still at play in logical semantics, going with an “the subject holds SELF” effect.

Thus, in, for example, *picture of oneself*, stacked possession is involved, as is the case with Mongolian *öör-in bey-in-ee čadal* ‘own/self’s body’s strength’. Note that the pronoun in English anaphors is not omissible arguably because English is not a zero-determiner language. In contrast, *öör-in* in Mongolian, which is a zero-determiner language, is always omissible, and the presence of a pronoun in anaphors is not preferable or even disallowed (see section 2).

This allows us to say that SE anaphors are in fact a shortened form of SELF anaphors. For example, the Dutch *zich* spells out the possessor occupying the specifier of D that selects N. N is optionally spelled out by *zelf*, as in *zichzelf*.

(122) [DP D_[phi] D_[ref] [D' D_[poss] [N]]] (merger of (D heads with) features)

(123) [DP Ø zich [D' Ø [Ø]]] (lexical insertion)

However, the morpho-syntactic behaviors of SELF anaphors and SE anaphors in different languages are quite arbitrary. One language may allow only one of a SELF anaphor and a SE anaphor while another language may allow both, and one language may allow a complementary distribution while another does not. The factors that determine the ultimate shape and behaviors of anaphors are by no means restricted to semantic factors, although reflexivity, a semantic notion, is universal. The exact shape of an anaphor is determined by language specific spell-out rules. It is thus reasonable to say that ways of encoding reflexivity are sensitive to a morpho-syntactic parameter and syntactic operations that drive relevant features to get clustered determine the syntactic binding of the possessor, as partially indicated by Reuland’s (2014: 21) statement that standard morpho-syntactic features such as specification for phi-features, case,

denoting a relation, and so on together with general principles of derivation determine whether an element will be bound.

Among the four languages we have discussed, English is special in that it disallows [phi] to remain shapeless. However, it allows N or [ref] lacking a morphological realization. This is arguably because in English, [poss], not [ref], is obligatorily clustered with [phi], as discussed by Davis (2023) in detail. Japanese differs from others in that [phi] is obligatorily spelled out as *kare* or *kanozuyo*, which precedes *zi-sin*. On the other hand, [phi] is not spelled out in the case of *zi-bun*. In Chinese, [phi] is optionally spelled out as *ta*. Dutch is closest to Mongolian in that either [ref] or [ref] plus N is spelled out: *zich* and *zichzelf* in Dutch and *öör* and *bey*. However, Mongolian differs from all others in that [poss] is obligatorily clustered with [ref], with the clustered outcome [ref, poss] spelled out as *öör-in*. Note that clustering of features, or fusion of relevant D heads, is not arbitrary. There are certain constraints, as discussed by another paper in preparation by the author.

Note that in all the cases discussed above, [phi] enters the derivation unvalued and gets valued by Agree with [phi] on the subject, instantiating what we call binding (Reuland 2014; Rooryck and Vanden Wyngaerd 2011). In this sense, coindexation/coreferentiality is obtained between the possessor with [phi] and the subject. Which one of [ref] and N surfaces as a marker of the coindexation/coreferentiality or a reflexivizer depends on specific morpho-syntactic properties of individual languages.

7. Conclusion

Let us summarize the findings in this paper. With respect to Mongolian, we found the following:

1. It is RX rather than an anaphor that is the hallmark of reflexivity.
2. The proper function of RX is to indicate the identity of an embedded subject (including a possessor) with a matrix subject, which are variables indistinguishable for computational systems.
3. RX is a clitic base-generated in the right specifier of a D head and is the outermost element in the DP.
4. RPP and/or RX display important properties including the nominative-resisting property, binding by a local subject/possessor, and the SR-resisting property, which makes RPP a special instance of Binding Principle A.

Regarding reflexives and reflexivity in general, I presented six arguments:

1. Reflexivity arises from the identity between subjects in need of remedying the effect of IDI. This remains a more general principle, which holds universally.
2. Reflexivity includes at least three subtypes of relations among which anaphoricity is the most prototypical.
3. (Semantic) reflexive predicates do not exist in the strict sense but a property of “used-as-a-reflexive-predicate” may exist.
4. A simplex anaphor is a bundle of possessive and reflexive features with a minimal noun and a complex anaphor is formed by the combination of a simplex anaphor and a pronoun. In this sense, anaphors do exist in human language.

5. Possessivity (or possessor-possesum relation) and predication (or subject-predicate relation) are intimate in that both are established on the basis of the abstract predicate *HOLD*, which licenses subjecthood to possessors.
6. Binding, which is still at play for reflexivity, is an agree relation between phi-features, but not simply a dependency between a nominal and an anaphor with phi-features.

References

- Abney, Steven. 1987. *The noun phrase in its sentential aspect*. PhD diss., Massachusetts Institute of Technology.
- Anisman, Adar. 2010. *Switch reference in Khalkha Mongolian*. MA thesis, SOAS University of London.
- Bai, Chigchi. 2024c. The syntax of reflexive binding in Mongolian. <https://ling.auf.net/>
- Bai, Chigchi and Cao Rongmei. 2024. Application of the Theory of Generative Grammar in Mongolian Grammar Research (in Mongolian). *Social Sciences in Inner Mongolia* 44: 46-53.
- Bai, Chigchi, Dabhubayar Huang and Wuyunga. 2025. The Morphosyntax of Possessive Pronouns, Reflexives and Silent Nominal in Mongolian. To appear in *Proceedings the 18th Workshop on Altaic Formal Linguistics*.
- Bošković, Željko. 1997b. *The syntax of nonfinite complementation: An economy approach*. Cambridge: MIT Press.
- Bošković, Željko. 2002b. Clitics as non-branching elements and the Linear Correspondence Axiom. *Linguistic Inquiry* 33: 329-340 .
- Chen, Yunchuan. 2021. Anaphor reconstruction in Japanese relative clauses An experimental study. *Language and Linguistics* 22: 243-271.
- Chomsky Noam. 1981. *Government and Binding*. Dordrecht, Neth.: Foris.
- Chomsky Noam. 1986. *Knowledge of Language: Its Nature, Origin, and Use*. New York: Praeger.
- Chomsky, Noam. 1995a. Bare phrase structure. In Gert Webelhuth, (eds.), *Government and Binding Theory and the Minimalist Program* (Generative Syntax 1), 383-439. Cambridge, MA: Blackwell.
- Chomsky, Noam. 2005a. Three Factors in Language Design. *Linguistic Inquiry* 36: 1-22.
- Cinggeltei 1997. *A grammar of Modern Mongolian* (in Mongolian). Hohhot: Inner Mongolia Peoples Publishing House.
- Cohen, Dana and Anne Zribi-Hertz. 2014. *Reflexives and Reflexivity*. In *Oxford Bibliographies*. DOI: 10.1093/OBO/9780199772810-0169.
- Culicover, Peter W. and Ray Jackendoff 2005. *Simpler Syntax*. Oxford: Oxford University Press.
- Davis, Colin P. B. 2023. The Unextractability of English Possessive Pronouns: On Portmanteau Formation and the Syntax-Morphology Interface. To appear in *Syntax*.
- Dechaine, Rose-Marie and Martina Wiltschko. 2017. A formal typology of reflexives. *Studia Linguistica* 71: 60-106.

- Den Dikken, Marcel. 2006. *Relators & linkers: The syntax of predication, predicate inversion, and copulas*. Cambridge, MA: MIT Press.
- Embick, David, and Alec Marantz. 2008. Architecture and blocking. *Linguistic Inquiry* 39: 1-53.
- Evseeva, Natalia and Iker Salaberri. 2018. Grammaticalization of nouns meaning “head” into reflexive markers: Across-linguistic study. *Linguistic Typology* 22: 385-435.
- Faltz, Leonard M. 1977. Reflexivization: A study in universal syntax. Los Angeles: University of California dissertation.
- Gong, Mia. 2022. *Issues in the Syntax of Movement: Cross-clausal Dependencies, Reconstruction, and Movement Typology*. Doctoral diss., Cornell University.
- Gong, Mia. 2023. On the Nature of Reflexive Binding in Mongolian: from Nominalsto Clauses. Handout at WAFL 17.
- Gong, Zhiyu Mia and Miloje Despić. 2024. On the nature of reflexive possessive agreement in Mongolian: from nominals to clauses. *Proceedings of the 17th Workshop on Altaic Formal Linguistics*: 1-16.
- Guntsetseg, Dolgor and Udo Klein. 2009. Two Types of Case Alternation in Mongolian. *Current Issues in Unity and Diversity of Languages: Collection of the papers selected from the CIL 18*: 3114-3128.
- Guntsetseg, Dolgor. 2011. The so-called reflexive(-possessive) suffix in Mongolian. Slides from Workshop “The World of Reflexives”.
- Guntsetseg, Dolgor. 2012. *Differential Case Marking in Mongolian*. Doctoral diss., University of Stuttgart.
- Halle, Morris, and Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In Ken Hale and Samuel Jay Keyser, (eds.), *The View From Building 20*: 1-52. Cambridge, MA: MIT Press.
- von Heusinger, Klaus, Udo Klein and Dolgor Guntsetseg. 2011. The case of accusative embedded subjects in Mongolian. *Lingua* 121: 48-59.
- Hsiao, Su-ying. 2012: *The Nominative/Genitive Alternation in Modern Inner Mongolian Relative Clauses: A Statistical Perspective Linguistic Research* 29(2): 351-380.
- Huang, Yan. 2005. *Anaphora: A Cross Linguistic Study*. Oxford: Oxford University Press.
- Inoue, Kazuyuki. 2014. The Reflexivisation System in Archaic Chinese: Specially on the difference of the function between. *Bulletin of Gunma Prefectural Women’s University* 35: 23-30.
- Janhunen, Juha A. 2012. *Mongolian*. Amsterdam/Philadelphia: John Benjamins.
- Kayne, Richard. 1994. *The Antisymmetry of Syntactic Structure*. Cambridge, MA: MIT Press.
- Kazenin, Konstantin I. 2001. Verbal reflexives and the middle voice. In Martin Haspelmath, Ekkehard König, Wulf Oesterreicher & Wolfgang Raible (eds.), *Language typology and language universals: An international handbook*, volume 2: 916-927. Berlin/New York: Mouton de Gruyter.
- Kratzer, Angelika. 2009. Making a Pronoun: Fake Indexicals as Windows into the Properties of Pronouns. *Linguistic Inquiry* 40: 187-237.
- Kornfilt, Jaklin and John Whitman. 2011. Afterword: Nominalizations in syntactic theory. *Lingua*, 121(7), 1297-1313.
- Kornfilt, Jaklin and John Whitman. 2012. Genitive Subjects in TP Nominalizations.

- Proceedings of JeNom 4*: 39-72.
- Kullman, Rita and Dandi-Ydam, Tserenpil. 2015. *Mongolian Grammar*, 5th edition, Switzerland: Kullnom Verlag.
- Maki, Hideki, Liana Bao, Megumi Hasebe. 2015. *Essays on Mongolian Syntax*. Tokyo: Kaitakusha, Chapter 6 (67-80).
- Nakamura, Masaru. 1989. Reflexives in Japanese. *Gengo Kenkyu* 95: 206-230.
- Nishida, Koichi. 2002. On reflexive indefinites in Japanese and English. *English Linguistics* 19: 266-290.
- Noguchi, Tohru. 2018. Two Types of Reflexivization in Japanese. *Japanese/Korean Linguistics* 25: 1-18.
- Oxford Advanced Learner's English-Chinese Dictionary*. Oxford: Oxford University Press.
- Poppe, Nikolas. 1954. *Grammar of Written Mongolian* (Fifth unrevised printing 2006: Porta Linguarum Orientalium Neue Serie 1. Originally published 1954) Wiesbaden: Harrassowitz.
- Ramchand, Gillian. 2008. *Verb meaning and the lexicon: A first phase syntax*. Cambridge: Cambridge University Press.
- Reinhart, Tanya. 2006. *Interface Strategies: Reference Set Computation*. Cambridge, MA: MIT Press.
- Reinhart, Tanya. 2016. The Theta System: syntactic realization of verbal concepts. In *Concepts, Syntax, and Their Interface: The Theta System*, ed. Martin E, M Marelj, E Reuland, 1-113. Cambridge, MA: MIT Press.
- Reinhart, Tanya and Reuland Eric. 1993. Reflexivity. *Linguistic Inquiry* 24: 657-720.
- Reuland Eric. 2001. Primitives of binding. *Linguistic Inquiry* 32: 439-92.
- Reuland Eric. 2011. *Anaphora and Language Design*. Cambridge, MA: MIT Press.
- Reuland, Eric. 2005a. Agreeing to Bind. In *Organizing Grammar: Linguistic Studies in Honor of Henk van Riemsdijk*. Edited by Hans Broekhuis, Norbert Corver, Riny Huybregts, Ursula Kleinhenz, and Jan Koster, 505–513. Berlin: Walter de Gruyter.
- Reuland, Eric. 2005b. Binding Conditions: How are they Derived? *Proceedings of the 12th International Conference on Head-Driven Phrase Structure Grammar*: 578-593.
- Reuland, Eric. 2014. Reflexives. *Oxford Handbook Topics in Linguistics*. Oxford: Oxford University Press.
- Reuland, Eric. 2017a. Why is reflexivity so special? Understanding the world of reflexives. *Studia Linguistica* 71: 12–59.
- Reuland Eric. 2017b. Grammar of binding in the languages of the world: unity versus diversity. *Cognition* 168: 370-379.
- Reuland, Eric. 2018. Reflexives and Reflexivity. *Annual Review of Linguistics* 4: 81-107.
- Reuland, Eric. 2019. *When binding can use agree*.
https://dspace.library.uu.nl/bitstream/handle/1874/429558/When_Binding_can_use_Agree_fin1.pdf?sequence=1
- Reuland, Eric. 2020. The roots of pronouns and valuation.
https://dspace.library.uu.nl/bitstream/handle/1874/429559/The_roots_of_binding_and_valuation_prefin_clean_.pdf?sequence=1.
- Reuland, Eric, Wong, S., & Everaert, M. 2020. How the Complexity of Mandarin *Zi-Ji* Simplifies the Grammar. *Linguistic Inquiry*, 51(4): 799-814.

- Rooryck, Johan and Guido Vanden Wyngaerd. 2011. *Dissolving Binding Theory*. Oxford: Oxford University Press.
- Roversi, Giovanni. 2024. Possession and syntactic categories: An argument from Äiwoo. *Natural Language & Linguistic Theory*, 00-00.
- Sportiche, Dominique. 2023. Constraints on Reflexivization. <https://ling.auf.net/lingbuzz/005488>
- Street, John C. 1963. *Khalkha Structure*. Bloomington: Indiana University.
- Striling, Lesley. 1993. *Switch-Reference and Discourse Representation*. Cambridge: Cambridge University Press.
- Tang, Chin-Chen Jane. 1989. Chinese reflexives. *Natural Language and Linguistic Theory* 7: 93-121.
- Tsujimura, Natsuko. 2014. *An Introduction to Japanese Linguistics*. Oxford: Wiley-Blackwell.
- Wang, Yingying and Haihua Pan. 2021. Chinese Reflexives. *Oxford Research Encyclopedias, Linguistics*.