Wh-island Sensitivity Reveals Two Scrambling Mechanisms in Khalkha Mongolian

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1. Introduction.

Long-distance scrambling (LDS) exhibits paradoxical properties that challenge a unified theory of syntactic movement. Previous theories diverge on the fundamental nature of LDS: some posit it to be a unique syntactic operation (e.g., Saito 1989, 2004), while other argue that it should be subsumed under A'-movement (e.g., Miyagawa 2005, 2006ab, 2011). Based on a detailed investigation of Khalkha Mongolian, I demonstrate that these two seemingly incompatible views correspond to two distinct types of LDS that may co-exist within a single language: (i) *wh*-LDS, which moves a *wh*-phrase, behaves like regular *wh*-movement, and targets a functional projection FP, and (ii) ordinary LDS, which moves a non-*wh*-DP, behaves unlike *wh*-movement, and targets a lower functional projection AspP in the matrix clause. When launching from a *wh*-island, *wh*-LDS exhibits Relativized Minimality effects mirroring English *wh*-movement. In contrast, ordinary LDS shows no such sensitivity. Applying additional diagnostics reveals that these operations target distinct landing sites, with *wh*-LDS targeting a high clausal domain and ordinary LDS a lower aspectual projection. I attribute these distinct syntactic behaviors to the features that drive ordinary vs *wh*-LDS. The current results (i) suggest LDS is both cross-linguistically and intra-linguistically heterogeneous and (ii) support the emerging view that differences in movement types arise from the specific features involved in Agree (e.g., Chomsky 1995, 2000, 2001; van Urk 2015).

2. Basic properties of LDS in Khalkha.

Before examining the core patterns, I first establish three basic properties of scrambling in Khalkha Mongolian. First, Khalkha allows LDS out of a finite embedded CP. In (1), the direct object of the embedded finite CP is scrambled to the initial position of the matrix clause, preceding the matrix subject. Note that the gap of the LDS cannot be filled with an overt pronoun.

(1) Ene em-iig$_1$ emč.ø [$_{CP}$ namaig t$_1$/*üüniig$_1$ uu-san gej] khel-sen[1]
this medicine-ACC doctor.NOM [$_{CP}$ 1SG.ACC t/it.ACC drink-PST C] say-PST
'This medicine$_1$, the doctor said [that I took t$_1$]'

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

Second, Khalkha LDS is sensitive to (strong) islands, patterning like other types of narrow syntax movement. Example (2) shows that LDS out of an adjunct clause is ungrammatical. Example (3) shows that LDS out of a complex NP is also ungrammatical.

(2) *Süü-tei tsai-g$_1$ Bat.ø [bidniig t$_1$ uu.kh gej bai-kh-a-d] öröö-n-d
milk-COMIT tea-ACC Bat.NOM [1PL.ACC drink.NPST.PTCP C COP-NPST.PTCP-DAT] room-EP-DAT
or-j ir-sen
enter-CVB come-PST
Intended: 'Milk tea$_1$, Bat entered the room [while we were about to drink t$_1$].'

(3) * Ter nom-ig$_1$ Bat.ø [[$_{RC}$ öčigdör t$_1$ khudalda-j aw-san] khün-iig]
that book-ACC Bat.NOM [[$_{RC}$ yesterday deal-CVB buy-PST.PTCP] person-ACC]
khai-j bai-na
search-CVB COP-NPST
Intended: 'That book$_1$, Bat is looking for [the person [$_{RC}$ who bought t$_1$ yesterday]] '

Finally, scrambling is not restricted to arguments. Certain non-arguments can also be scrambled clause-externally. While in general LDS of adjuncts is limited cross-linguistically (e.g., Saito 1985, Cho and Kim 2000, Ko 2018, Bošković and Takahashi 1998), certain time and place adverbials are known exceptions at least in some languages (e.g., Saito 1985, see also Murasugi and Saito 1992 for related discussion). Khalkha conforms to this pattern. As shown in (4), time adverbial such as 'on Tuesday' can be scrambled clause-externally, while maintaining the reading that 'on Tuesday' modifies the embedded clause (Reading 1). [2]

(4) [Myagmar garig-t]$_1$ Bayar.ø [$_{CP}$ Dulmaa-g t$_1$ ir-ne gej] bod-o-j bai-na
[Tuesday day-DAT] Bayar.NOM [$_{CP}$ Dulmaa-ACC t come-NPST C think-CVB COP-NPST
'On Tuesday$_1$, Bayar is thinking that Dulmaa will come t$_1$'
^{OK} Reading 1: Bayar is thinking that Dulmaa will come on Tuesday
^{OK} Reading 2: Bayar is thinking on Tuesday that Dulmaa will come

Similarly, locative adverbials and PPs can be scrambled clause-externally while maintaining the embedded reading as well.

(5) ? Gowi-d$_1$ Bayar.ø [$_{CP}$ Chingis khaan-ig t$_1$ oršuul-san gej] bod-dog
Gobi-DAT Bayar.NOM [$_{CP}$ Chingis Khan-ACC bury -PST C] think-HABIT
'In the Gobi$_1$, Bayar thinks that Chingis Khan was buried t$_1$.'

(6) [Ulaanbaatar zočid buudl-in ömnö]$_1$ Dorj.ø [$_{CP}$ Tuya-g t$_1$ ter khun-tei ünseltse-j bai-san
[Ulaanbaatar hotel -GEN front] Dorj.NOM [$_{CP}$ Tuya-ACC that person-COMIT kiss-CVB COP-PST
gej] bodo-j bai-na
C] think-CVB COP-NPST
'[In front of the UB hotel]$_1$, Dorj is thinking [that Tuya was kissing that person t$_1$]'

3. *Wh*-island effects in two types of LDS.

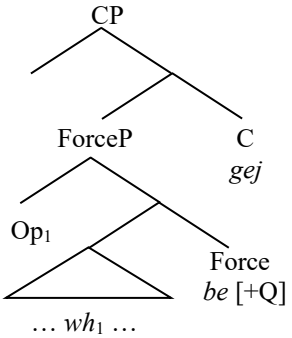
[2] For clarity and conciseness in the examples that follow, the glosses will not repeat all possible scope readings (i.e., embedded vs. matrix) of scrambled adverbials. Therefore, an adverbial LDS construction marked as "ungrammatical" is ungrammatical specifically on the intended reading where the adverbial modifies the embedded clause.

This section presents the core patterns concerning *wh*-island effects in LDS. Three points are crucial for defining the structure of an embedded *wh*-interrogative in Khalkha: (i) Khalkha is a *wh*-in-situ language; (ii) the *wh*-question particle *be/we* marks the scope of the question, which I take to head ForceP in the clausal periphery; (iii) the question particle is followed by the complementizer *gej* in an embedded question, shown in (7).

(7) Bat.ø [$_{CP}$ khen.ø ter nom-ig aw-san be gej] asuu-san
Bat.NOM [$_{CP}$ who.NOM that book-ACC buy-PST Q C] ask-PST
'Bat asked who bought that book'

I propose that the clausal periphery the embedded interrogative is like (8), where the Q-particle occupies Force, introduced below C. Following Nishigauchi (1986), Watanabe (1992), Tsai (1999), I assume there to be a phonologically null operator Op in the specifier position of the Q-particle in narrow syntax, binding the *wh*-phrase in situ as a variable.

(8)



The scrambling of non-*wh*-phrases in Khalkha is consistent with the cross-linguistic observation that LDS seems insensitive to *wh*-islands (Japanese: Saito 1985, Abe 1993, Bošković and Takahashi 1998, Miyagawa 2005; Korean: Kim 2003, Ko, Chung, Kim, and Sprouse 2019; Russian: Zemskaja 1973, Bailyn 2020; cf. English *wh*-movement). Such scrambling may proceed out of an embedded interrogative with no argument (9) vs. non-argument (10) asymmetry.

(9) Ter nom-ig$_1$ Bat.ø [$_{CP}$ khen.ø t$_1$ aw-san be gej] asuu-san
that book-ACC Bat.NOM [$_{CP}$ who.NOM t buy-PST Q C] ask-PST
'That book$_1$, Bat asked who bought t$_1$'

(10) Irekh jil$_1$ Bat.ø [$_{CP}$ khen t$_1$ tögsö-kh we gej] asuu-san
Next year Bat.NOM [$_{CP}$ who t graduate-NPST Q C] ask-PST
'Next year$_1$, Bat asked who will graduate t$_1$'

Some studies (e.g., Kim 2003) interpret the lack of weak island effect above as evidence that LDS is not driven by A'-features, allowing it to bypass A'-interveners under Relativized Minimality (e.g., Rizzi, 1990, 2004). In contrast, others (e.g., Miyagawa 2006ab) argue that LDS should be subsumed under A′-movement, and the lack of *wh*-island effects should receive alternative explanations. In order to systematically investigate these competing claims, original data in Khalkha was collected to analyze six subcases of LDS. These subcases vary along two dimensions: (i) the type of item undergoing long-distance extraction—whether it involves ordinary LDS (a non-*wh*-phrase) or *wh*-LDS (a *wh*-phrase), and (ii) the domain from which LDS proceeds— a [-Q] CP, a *wh*-island, or a strong island (including complex NPs and adjunct islands). First, ordinary LDS may proceed out of [-Q] CP and out of *wh*-islands. We

have seen these examples in (1), (4-6), and (9-10). We also saw that ordinary LDS out of a strong island is not possible (2-3).[3]

Wh-LDS out of a [-Q] CP is acceptable (11), similar to ordinary LDS.

(11) Yamar nom-ig$_1$ či [$_{CP}$ Dorj-iig öčigdör t$_1$ unš-san gej] khel-sen be?
what.kind.of book-ACC 2SG.NOM [Dorj-ACC yesterday read-PST C] say-PST Q
'What kind of book$_1$ did you say [that Dorj read t$_1$ yesterday]?'

A non-argument *wh*-phrase can also be scrambled out of a finite declarative CP. [4]

(12) ? Khaana$_1$ bagš.ø [$_{CP}$ Čingis khaan-ig t$_1$ oršuul-san gej] khel-sen be?
Where teacher.NOM [$_{CP}$ Čingis Khan-ACC t bury-PST C] say-PST Q
'Where$_1$ did the teacher say that [Čingis Khan was buried t$_1$?]

In contrast to ordinary LDS, however, *wh*-LDS out of a *wh*-island shows clear argument vs non-argument contrast. An argument *wh*-phrase can be scrambled out of a *wh*-island, with mild judgment variation among the speaker consulted, judging example (13) as either acceptable or slightly degraded.

(13) $^{OK/?}$ Ali nom-ig$_1$ Bayar.ø [$_{CP}$ Dulmaa-g öčigdör t$_1$ nom-in delgüür-ees aw-san be gej] asuu-san
which book-ACC B.NOM [$_{CP}$ D-ACC yesterday t book-GEN store-ABL buy-PST Q C ask-PST
'Which book$_1$, Bayar asked [Dulmaa bought t$_1$ from the bookstore yesterday]'

Crucially, a non-argument *wh*-phrase cannot be scrambled out of a *wh*-island. The judgment for (14-15) is consistently ungrammatical across all speakers consulted.

(14) * Khaana$_1$ suragčid [$_{CP}$ Čingis khaan-ig t$_1$ oršuul-san be gej] bagš-aas asuu-san
where students [$_{CP}$ Čingis Khan-ACC bury-PST Q C] teacher-ABL ask-PST
Int. 'Where$_1$, the students asked the teacher [was Čingis Khan buried t$_1$] (embedded interpretation)

(15) * Khezee$_1$ suragčid [$_{CP}$ Čingis khaan-ig t$_1$ tör-sön be gej] bagš-aas asuu-san
when students [$_{CP}$ Čingis Khan-ACC born-PST Q C] teacher-ABL ask-PST
Int. 'When$_1$, the students asked the teacher [was Čingis Khan born t$_1$]' (embedded interpretation)

Wh-LDS of arguments and non-arguments are equally blocked out of strong islands. For space reasons, this is illustrated with representative examples of scrambling from Complex NPs using *who* and *when*.

(16) a. *Khen-tei$_1$ či [[yerönkhiilögč.ø t$_1$ uulz-san gekh] yaria-g] sons-son be?
who-COMIT 2S.NOM [[president.NOM meet-PST C] rumor-ACC] hear-PST Q
Int. 'Who$_1$, did you hear [the rumor [that the president met t$_1$]? '

b. *Khezee$_1$ či [[yerönkhiilögč.ø t$_1$ ogtsor-no gekh] yaria-g] sons-son be?
when 2S.NOM [[president.NOM resign-PST C] rumor-ACC] hear-PST Q
Int. 'When$_1$, did you hear [the rumor [that the president will resign t$_1$]? '

Table 1 summarizes the core patterns so far.

		out of [-Q] CP	out of *wh*-island	out of strong islands
ordinary LDS	arguments	OK	OK	*
	non-arguments	OK	OK	*
wh-LDS	arguments	OK	OK/?	*
	non-arguments	?	*	*

Table 1. LDS patterns out of islands

[3] Ordinary LDS of non-arguments is not possible out of an adjunct island or out of a complex NP island. Data for this point is not included for reasons of space.

[4] Scrambling of non-argument *wh*-phrase is slightly degraded. Similar effect of degraded status of non-argument scrambling has been noted in Bailyn (2020).

4. Diagnosing landing sites through relativization.

4.1 Background on Khalkha relative clauses

The two types of LDS are further distinguished by their landing sites at the matrix clause periphery. The core evidence is drawn from patterns of scrambling within relative clauses (RCs). RCs in Mongolic languages are known to have a reduced structure with limited clausal periphery (Hale 2002, Miyagawa 2011). An example of an object RC is given below:

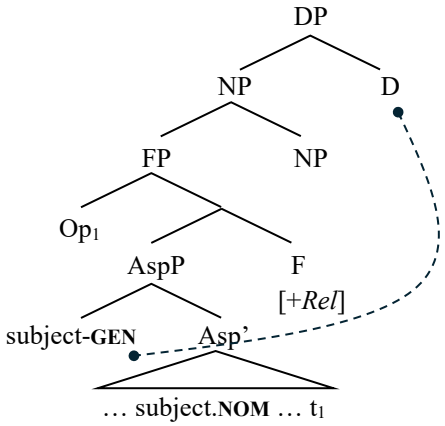
(17) [$_{RC}$ Bat.ø/-in unš {^{OK}-san/*-laa}] nom
[$_{RC}$ Bat.NOM/-GEN read{-PST.PTCP/-PST}] book
'The book which Bat read'

The truncated structure of these RCs is evidenced by their incompatibility with typical finite verb endings, such as the finite past tense ending *-laa* indicated in (17). Previous analyses thus propose that these RCs are projections of AspP or a defective TP (Hale 2002, Kornfilt 2008ab, Miyagawa 2011, Asarina 2011, Ótott-Kovács 2023, among others). The RC subject may alternate between nominative and genitive case marking, and it is frequently taken that genitive subjects occupy a higher position within the RC than nominative ones. One piece of evidence suggesting that genitive subjects are indeed higher comes from binding (18).

(18) Bat Dorj khoyor [[$_{RC}$ biye biye {-nii-kh-ee$_1$ /*.ø-n-ee$_1$ }
Bat Dorj two [[$_{RC}$ body body {-GEN-EP-REFL.POSS/.NOM-EP-REFL.POSS}
aw-san] zurg-ig] zar-san
take-PST.PTCP] picture-ACC] sell-PST
'Bat and Dorj$_1$ sold the picture(s) that each other$_1${-GEN/*-NOM} took'

I therefore assume the following RC structure for Khalkha, where FP is the relative clause whose head F hosts a [+*Rel*] probe, and whose specifier hosts the relative operator, following Ótott-Kovács (2023). In some analyses (e.g., Miyagawa 2011), the truncated clausal structure is also closely related to the case alternation on the RC subject: Since AspP is smaller than a CP, it allows the D head associated with the RC head to license the genitive case marker on the RC subject.

(19)



4.2 Long distance scrambling within relative clauses

With the basic background on Khalkha RCs in mind, let us now turn to scrambling within RCs. To establish the baseline, RCs permit scrambling within them. Locally scrambling over either the genitive

or nominative subject is acceptable.

(20) [$_{RC}$ Meri-tei$_1$ Dorj.ø/Dorj-iin margaaš t_1 uulz-a-kh] gazar khol bai-na
[$_{RC}$ Mary-COMIT D.NOM/D-GEN tomorrow t meet-EP-NPST.PTCP] place far COP-NPST
'The place where Dorj will meet Mary tomorrow is far'

Ordinary LDS can take place within an RC with a nominative subject, although somewhat degraded.

(21) [$_{RC}$ Meri-tei$_2$?Bill.ø/*Bill-iin [$_{CP}$ Jon-ig t_2 gerle-sen gej] $t_1$khel-sen] gazar$_1$
[$_{RC}$ Mary-COMIT B.NOM/B-GEN [$_{CP}$ John-ACC t marry-PST C] t say-PST.PTCP] place
'The place where [$_{RC}$ Mary$_2$, Bill said [$_{CP}$ that John married t_2]]'

The pattern in (21) is expected if ordinary LDS proceeds out of an embedded finite CP and lands in Spec AspP. Since Spec AspP is also the position which the RC subject occupies to get genitive case, ordinary LDS cannot co-occur with a genitive RC subject. In contrast, *wh*-LDS is completely ruled out within an RC, regardless of the case of the subject.

(22) [$_{RC}$ Khen-tei$_2$ *Bayar.ø/*Bayar-iin [$_{CP}$ Jon-ig t_2 gerle-sen be gej] t_1 asuu-san] gazar$_1$
[$_{RC}$ who-COMIT B.NOM/B-GEN [$_{CP}$ John-ACC t marry-PST Q C] t ask-PST.PTCP] place
'The place where [$_{RC}$ who$_2$, Bayar asked [$_{CP}$ (that) John married t_2]]'

Notice that if the *wh*-LDS in (22) is removed from the RC environment, the LDS operation itself is possible in a matrix construction. The following example is only mildly degraded.

(23) ? Khen-tei$_1$ Bayar.ø [$_{CP}$ Jon-ig t_1 gerle-sen be gej] asuu-san
who-COMIT B.NOM [$_{CP}$ J-ACC t marry-PST Q C] ask-PST
'Who$_1$, Bayar asked [John married t_1]'

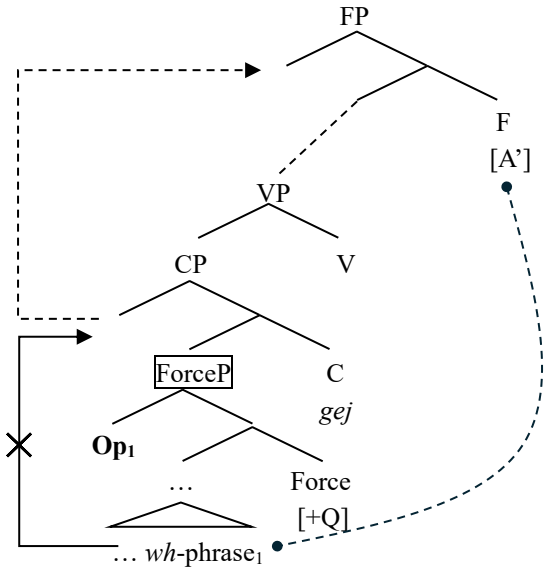
The ungrammaticality of (22) would be explained if the landing site of *wh*-LDS is an A' position where the relative clause operator also occupies. [5] Since there is only one such position (FP), the fact that wh-LDS is completely impossible in RCs is expected.

5. Deriving two types of LDS.

The results reported in Section 3 and Section 4 consistently indicate that Khalkha has at least two distinct types of clause-external scrambling: *wh*-LDS targets FP in the matrix clause, and shows weak island effects when proceeding out of a *wh*-island. By contrast, ordinary LDS targets a lower AspP in the matrix clause, and does not show weak island effects. I suggest that the distinct patterns of these two types of LDS are due to the different syntactic features that drives them. Assuming that syntactic locality is handled in terms of a ban against likes crossing likes (Relativized Minimality, Rizzi 1990, 2001, Chomsky 1995, Starke 2001), I propose that *wh*-LDS is driven by an A'-type feature that is of the same type as the operator Op at Spec ForceP of a *wh*-island. Syntactic dependencies created by *wh*-LDS across a *wh*-island would be blocked by the intervening Op at the Spec ForceP. This is illustrated in (24), where intermediate functional projections are omitted for reasons of space. The boxed ForceP projection is the *wh*-island being crossed.

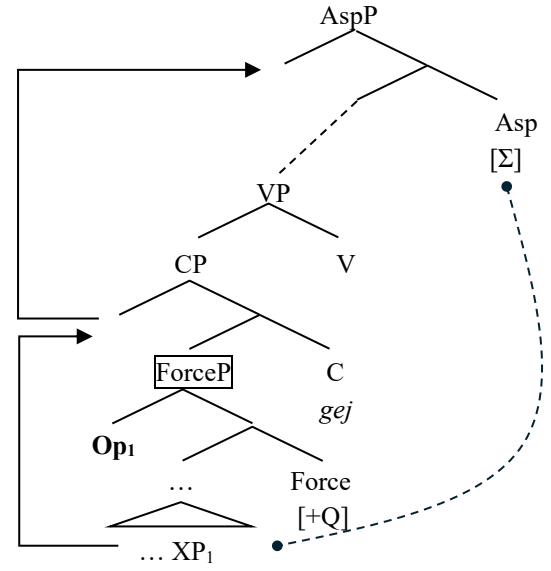
[5] Alternatively, *wh*-LDS could target a position higher than the RC operator. However, since this distinction does not affect the current empirical results discussed here, I will assume for simplicity that *wh*-LDS targets FP.

(24)



In contrast to *wh*-LDS, ordinary LDS may freely proceed out of a *wh*-island (). Following Grewendorf and Sabel (1999), I assume that ordinary LDS is driven by the feature [Σ], which is not an A'-type feature. Thus, ordinary LDS may freely proceed across A'-interveners. A similar case of [Σ]-driven LDS across *wh*-island in Russian is reported in Bailyn (2020). I assume that a similar mechanism applies here.

(25)



6. Conclusions.

In this paper I have shown that there exist at least two types of LDS in Khalkha Mongolian. The first type, *wh*-LDS, is driven by A'-type features. Thus, it exhibits the typical argument vs non-argument asymmetry when proceeding out of a *wh*-island. It targets FP of the matrix clause. The second type, ordinary LDS, is drive by the feature [Σ], and targets AspP of the matrix clause. It does not exhibit a weak island effect. If on the right track, the current results suggest that LDS is both cross-linguistically and intra-linguistically heterogeneous, with the potential differences possibly derivable from the features that drive the movement. Future work will need to examine the precise nature and independent evidence for the distinct syntactic movement claim.

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