



Postsyntactic Lowering and linear relations in Dagur noun phrases

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][ubiquity press

Abstract

In this paper, I investigate the unusual order between case and possessive morphemes in the endangered Mongolic language Dagur. It is observed in many languages that the case morpheme follows possessive markers, but Dagur uniformly exhibits the morpheme order where possessive follows case in its nominal domain. Based on novel data from fieldwork, I propose that such order is due to postsyntactic Lowering, in which the head of K(ase)P lowers to Poss(essive) head. The evidence for the Lowering analysis comes from suspended affixation in this language. In particular, suspended affixation involving CASE and POSS morphemes displays unusual patterns, compared to the suspension of other types of morphemes. Further investigation reveals that Dagur suspended affixation is best analyzed as a base-generated structure, instead of morpheme ellipsis. Given these, the Lowering analysis correctly derives the POSS-final order and successfully accounts for the unusual patterns in suspended affixation. In addition, I examine surface morphophonological differences between the CASE and the POSS morphemes, and show that they can be systematically encoded in the current theory.

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KEYWORDS:

suspended affixation; Lowering; Dagur; morphology

TO CITE THIS ARTICLE:

Gong, Zhiyu Mia. 2021. Postsyntactic Lowering and linear relations in Dagur noun phrases. *Glossa: a journal of general linguistics* 6(1): 42. 1–29. DOI: <https://doi.org/10.5334/gjgl.1397>

1 Introduction

In languages with rich inflection, overt case morphology is often observed at the periphery of the nominal domain. In terms of hierarchical structures, case has sometimes been taken to be the maximal extension of the nominal projection (e.g., Siegel 1974; Lamontagne & Travis 1987; Bittner & Hale 1996). In Dagur, an endangered Mongolic language, the case suffix uniformly appears to be closer to the stem than the possessive suffix. This is unexpected if we assume case to be the highest head of the extended nominal projection, and that linear order mirrors the order of syntactic heads and projections (e.g., Baker 1985). The linear order which directly maps onto levels of hierarchical projections is not the only linearization possibility. Embick (2015), for instance, suggests that whether or not the morpheme order mirrors the levels of syntactic projection depends on how the relevant morphemes are linearized. Specifically, the output of syntactic derivation may also be subjected to a series of PF operations that further manipulate the structure, conditioning the final linearized output. The current analysis of the Dagur morpheme order provides a case study in which the surface linear order does not directly mirror the underlying hierarchy of projections, but is related to it in a systematic way. The proposal, couched in the theory of Distributed Morphology, derives the Dagur suffix order via a series of operations which take place postsyntactically. In the first part of my analysis, I examine the syntactic structure of the Dagur nominal domain, and propose a postsyntactic Lowering operation which lowers K onto Poss, in light of the data from suspended affixation. In particular, I show that suspended affixation involving CASE and POSS morphemes displays unexpected patterns, in that they are not predicted by the right edge constraint on suspended affixation. Assuming that K is the highest head in the extended nominal projection, I demonstrate that suspended affixation is base-generated from a structure in which two smaller constituents are coordinated under a single morpheme, with further inflections taking place on that morpheme. Lowering of K to Poss applies postsyntactically to the base-generated structure, successfully capturing all the possible and impossible surface forms of suspended affixation. In the second part of my analysis, I examine further morphophonological differences between CASE and POSS morphemes. Specifically, the CASE morpheme appears to be morphophonologically closer to the stem than the POSS morpheme. I present one specific proposal which utilizes morphological word formation based on the given syntactic structure, in combination with linear free rebracketing. The rebracketing operation is also shown to be systematically connected with the Lowering operation which applies before linearization. Finally, I will discuss the implications of my analysis for the general architecture of postsyntactic operations.

The rest of the paper is organized as follows. In Section 2, I introduce the main empirical phenomenon. In Section 3, I present detailed fieldwork data on suspended affixation and argue that it should be analyzed as a base-generated structure rather than ellipsis. In Section 4, I outline my assumptions for the syntactic structure of Dagur nominal domain. Given this structure, I present the main proposal in which the stem-CASE-POSS order is derived by K undergoing Lowering to Poss after syntactic derivations. In Section 5, I examine further morphophonological properties of the CASE and the POSS morphemes, and suggest several morphological processes to derive these properties. Section 6 concludes the paper.

2 The POSS-final order in Dagur

In Dagur possessive constructions, the suffix following the possessum agrees in person and in number with the possessor. The pronominal possessor is often optional, but the possessive suffix is obligatory.

- (1) a. (minii) bitey -minⁱ
1SG.GEN book -1SG.POSS
'my book'
- b. *minii bitey

When the possessive construction is marked for case, the CASE suffix precedes the POSS suffix. The reversed order is ungrammatical.

- (2) a. Šii (minii) bitey -ii -min' uǰ -sen -ši
 you 1SG.GEN book -ACC -1SG.POSS look -PST -2SG
 'You read my book.'
- b. *Šii (minii) bitey -min' -ii uǰ -sen -ši
 you 1SG.GEN book -1SG.POSS -ACC look -PST -2SG

The order in (2a) applies regardless of the cases and ϕ -features of the possessive element. This contrasts with some languages where similar CASE-POSS suffix order has been attested, such as Mordvin (McFadden 2004) and Mari (Guseva & Weisser 2018). In these languages, the order is restricted to a subset of cases.

Within the Mongolic family, the surface order in which POSS follows CASE has also been observed in other languages. As shown in (3), the accusative case morpheme seems to precede the first person possessive morpheme in Khalkha Mongolian, a language closely related to Dagur.

- (3) *Khalkha Mongolian*
 Baatar nom -ig miny unsh -san
 Baatar book -ACC 1SG.POSS read -PST
 'Baatar read my book.'

However, I suggest that the type of morpheme order exemplified by the Khalkha possessive construction (3) is a separate phenomenon from the Dagur POSS-final order examined here. Specifically, the Mongolian possessive *miny* is a postposed full pronoun, whereas in Dagur it is a genuine agreement marker. As shown in the examples below, in Khalkha Mongolian the possessive pronoun can either precede (4a) or follow (4b) the possessed noun. When the possessive follows the possessed noun (4b), it surfaces as a phonologically reduced form *miny* (often regarded as a particle). Crucially, the postposed *miny* in (4b) still remains a full pronoun, because the pronominal *minii* and the postnominal *miny* can never co-occur (4c). This suggests that *miny*, as a pronoun, cannot be locally bound, and (4c) is ungrammatical due to Condition B violation.

- (4) *Khalkha Mongolian*
- a. John minii nom -ig unsh -san.
 John 1SG.POSS book -ACC read -PST
 'John read my book.'
- b. John nom -ig miny unsh -san.
 John book -ACC 1SG.POSS read -PST
- c. *John minii nom -ig miny unsh -san.
 John my book -ACC miny read -PST

In contrast, *-min'* in Dagur is obligatory and can co-occur with pronominal possessors, strongly suggesting that the Dagur POSS marker is not a pronoun, but an morpheme that signals agreement with the possessor.

- (5) *Dagur*
- a. *John minii bitey -ii uǰ -sen.
 John my book -ACC see -PST
 Int. 'John read my book.'
- b. John bitey -ii -min' uǰ -sen.
 John book -ACC -1SG.POSS see -PST
- c. John minii bitey -ii -min' uǰ -sen.
 John my book -ACC -1SG.POSS see -PST

Since the possessive pronoun in Khalkha can surface postnominally, the fact that in (3) 1SG. POSS linearly follows CASE is not surprising. In standard Khalkha orthography, the postposed pronominal possessor such as *miny* in (3) is also written as a separate word. In contrast, evidence from binding shows that POSS markers in Dagur exemplify a different case, in that the POSS morpheme signals agreement with the possessor. In light of this, part of this paper's empirical task is to determine a) the morphological status of POSS with regard to the rest of the nominal domain, b) the syntactic status of POSS within the extended nominal projection, and c) the similarities and differences between POSS and CASE in these respects. Answering these questions would ultimately help us determine the underlying mechanism that is responsible for the morpheme order observed on the surface. In the remainder of this paper, I divide this puzzle in Dagur into two parts: the hierarchical syntactic structure and the post-linearization morphological processes. I will begin with investigating the underlying structure of Dagur nominal domain and the morphosyntactic properties of the nominals with the CASE-POSS suffix order. Through a detailed investigation into the phenomenon of suspended affixation, I will show that a) suspended affixation in Dagur is not the result of ellipsis. Instead, it is base-generated from a structure where two smaller constituents are coordinated under a single morpheme; and b) noun phrases followed by CASE and POSS suffixes display unusual morpheme suspension patterns, which can be adequately accounted for under the view that CASE, occupying K(ase), undergoes postsyntactic Lowering to the Poss head, which hosts the POSS morpheme. Then, I will turn to surface morphophonological properties of the CASE and the POSS morphemes, and discuss possible ways to derive them under the current theory.

3 The structure of suspended affixation in Dagur

3.1 Background

In this section I introduce the phenomenon of suspended affixation in Dagur, and present novel data which indicate that it is base-generated from a structure where the suspended affixes attach to the entire coordinate structure. Suspended affixation is first defined by Lewis (1967) as the construction in which one grammatical ending serves two or more parallel words. In suspended affixation constructions, the final conjunct bears one or more word-final suffixes, and the non-final conjunct lack those suffixes (Kornfilt 2012). In Dagur, nominal phrases can be coordinated with or without an overt coordinator, and both types allow suspended affixation.¹

(6) Seb bolor šeb' -sul ir -sen.
 teacher CONJ1 student -PL come -PST
 'Teachers and students came.'
 *'A teacher and students came.'²

(7) Gungren, tareečin, seb, šeb' -sul ir -sen.
 worker, farmer, teacher, student -PL come -PST
 'Workers, farmers, teachers, and students came.'
 *'A worker, a farmer, a teacher, and students came.'

In (6), two noun phrases are conjoined by the coordinator *bolor*, with PL suffix *-sul* following only the final conjunct. However, both conjuncts in (6) have plural interpretation. In (7), there is no overt coordinator, but the same pattern is observed.

A typical Dagur nominal stem may be followed by three types of markers: PL, CASE, and POSS, and any one of these three can undergo suspended affixation. Suspension of PL suffix has been illustrated with (6)–(7). The following two examples show suspension of CASE (8) and POSS (9) morphemes respectively.

(8) Engkebatu (1988)

¹ In most cases, coordinate structures with overt coordinators and those without overt coordinators do not have significant interpretative differences.

² Dagur lacks a determiner system like the one in English. In Dagur bare singulars are number neutral. In order to express 'a teacher, and students came', the following structure can be used:

(i) nek seb, (bolor) šeb' -sul
 one teacher CONJ1 student -PL

Čaajuk^w, sarp, d'aas, pan -ii gub waa.
 bowl chopstick dish plate -ACC all wash
 'Wash all of the bowl(s), chopstick(s), dishe(s), and plate(s).'

- (9) Engkebatu (1988)
 Xukur bolor mor' -taan' xoo hajir -sen jee?
 ox CONJ1 horse -2PL.POSS all return -PST Q
 'Have your ox(en) and (your) horse(s) returned?'
 *'Have the ox(en) and your horse(s) returned?'

When all three suffixes are present in a nominal phrase, the linear order is rigidly stem-PL-CASE-POSS, illustrated with (10). Suspended affixation involving more than one suffix will be discussed in detail in the next section.

- (10) Mergen (minii) guč -sul -d -min' jašyen ši -sen.
 Mergen 1SG.GEN friend -PL -DAT -1SG.POSS letter write -PST
 'Mergen wrote a letter/letters to my friends.'

3.2 Further data on suspended affixation in Dagur

Having introduced the basic structural properties of suspended affixation in this language, I present further morpheme suspension facts in this section. One of the key observations is that most instances of suspended affixation in Dagur obey the right edge constraint observed cross-linguistically. However, suspension involving CASE and POSS morphemes displays unexpected patterns, suggesting further structural complications at play. The set of data presented here contributes to a larger empirical picture on the cross-linguistic variation of the morpheme suspension effects, in which the patterns differ according to language and morpheme-specific factors (e.g., Kornfilt 1996; 2012; Despić 2017; Yoon 2017; Guseva & Weisser 2018; Erschler 2018).

I begin with the illustration of the coordinations of words with only one suffix. As presented in the previous section, if each conjunct is only followed by one suffix (PL, CASE, or POSS), then suspended affixation can freely apply. The relevant examples are repeated here (suspended morpheme is in boldface):

- (11) Seb bolor šeb' -sul ir -sen.
 teacher CONJ1 student -PL come -PST
 'Teachers and students came.'
- (12) Čaajuk^w, sarp, d'aas, pan -ii gub waa.
 bowl chopstick dish plate -ACC all wash
 'Wash all of the bowl(s), chopstick(s), dishe(s), and plate(s).'
- (13) Xukur bolor mor' -taan' xoo hajir -sen jee?
 ox CONJ1 horse -2PL.POSS all return -PST Q
 'Have your ox(en) and (your) horse(s) returned?'

When each conjunct is marked by CASE and PL, CASE follows PL. Suspended affixation can apply to CASE only, or to both CASE and PL. That is, both [stem & stem-PL-CASE] and [stem-PL & stem-PL-CASE] are acceptable:

- (14) Bi gungren, tareečin, seb, šeb' -sul -tii usyulj -sen -bi.
 I worker, farmer, teacher, student -PL -COMIT talk -PST -1SG
 'I talked with workers, farmers, teachers, and students.'
- (15) Bi seb -sul bolor šeb' -sul -tii usyulj -sen -bi.
 I teacher -PL CONJ1 student -PL -COMIT talk -PST -1SG
 'I talked with teachers and students.'

While suspending CASE is grammatical, PL cannot be omitted without omitting CASE as well:

- (16) *Bi seb -tii boloor šebⁱ -sul -tii usyulj -sen -bi.
 I teacher -COMIT CONJ1 student -PL -COMIT talk -PST -1SG
 Int. 'I talked with teachers and students.'

When each conjunct is followed by POSS and PL, POSS follows PL suffix, and the morpheme suspension pattern is the same as the previous illustration involving CASE and PL – POSS suffix can be independently suspended (17). Alternatively, both PL and POSS can be suspended (18). However, PL cannot be independently suspended without omitting POSS (19).

- (17) akaa -sul boloor ekee -sul -šⁱnⁱ
 brother -PL CONJ1 sister -PL -2SG.POSS
 'your brothers and sisters'
- (18) akaa boloor ekee -sul -šⁱnⁱ
 brother CONJ1 sister -PL -2SG.POSS
 'your brothers and sisters'
- (19) *akaa -šⁱnⁱ boloor ekee -sul -šⁱnⁱ
 brother -2SG.POSS CONJ1 sister -PL -2SG.POSS
 Int. 'your brothers and sisters'

Table 1 summarizes the suspended affixation patterns which we have seen so far. Suspended suffixes are represented in gray.

	Conjunction	Example #
a.	✓ N-PL & N-PL	(11)
b.	✓ N-POSS & N-POSS	(13)
c.	✓ N-CASE & N-CASE	(12)
d.	✓ N-PL-CASE & N-PL-CASE	(15)
e.	✓ N-PL-CASE & N-PL-CASE	(14)
f.	* N-PL-CASE & N-PL-CASE	(16)
g.	✓ N-PL-POSS & N-PL-POSS	(17)
h.	✓ N-PL-POSS & N-PL-POSS	(18)
i.	* N-PL-POSS & N-PL-POSS	(19)

Table 1 Distribution of suspended affixation involving single suffix, PL-CASE, or PL-POSS.

As shown in **Table 1**, if each conjunct is followed by only one suffix, then suspended affixation can freely apply. If each conjunct is followed by two suffixes, then the suspended suffixes must be the rightmost in its conjunct. So far, this pattern appears to be an instance of a more general empirical observation termed the *right edge condition* (e.g., Guseva & Weisser 2018), widely observed in languages with suspended affixations.

- (20) *The right edge condition:*
 The elements omitted due to suspended affixation must be at the right edge of the non-final conjuncts.

However, when the coordination conjoins words marked by both CASE and POSS suffixes, suspended affixation displays unexpected patterns given the observations in **Table 1** and the generalization in (20). In (21), the rightmost suffix *-maanⁱ* is suspended, which conforms to the right edge condition. However, this sentence is ungrammatical.

- (21) *Mergen ger -d boloor tačku -d -maanⁱ iči -sen.
 Mergen house -DAT CONJ1 school -DAT -1PL.POSS go -PST
 Int. 'Mergen went to our home and our school.'

If only CASE is suspended as in (22), the sentence is also ungrammatical. However, CASE and POSS can be suspended together (23).

(22) *Mergen tačku -maanⁱ boloor ger -d -maanⁱ iči -sen.
 Mergen school -1PL.POSS CONJ1 house -DAT -1PL.POSS go -PST

(23) Mergen tačku boloor ger -d -maanⁱ iči -sen.
 Mergen school CONJ1 house -DAT -1PL.POSS go -PST

Another example illustrating the same point using instrumental case and 1SG.POSS *-minⁱ* is shown below. Suspending the instrumental case suffix as in (24) is ungrammatical. Suspending both suffixes as in (25) is grammatical.

(24) *Terey -minⁱ boloor morⁱ -eer -minⁱ ir -sen -taanⁱ.
 vehicle -1SG.POSS CONJ1 horse -INST-1SG.POSS come -PST -2PL
 Int. ‘You.PL came with my vehicle and my horse.’

(25) Terey boloor morⁱ -eer -minⁱ ir -sen -taanⁱ.
 vehicle CONJ1 horse -INST-1SG.POSS come -PST -2PL
 ‘You.PL came with my vehicle and my horse.’

Suspending the rightmost morpheme *-minⁱ* is unacceptable (26), indicating, along with (21), that the form [stem-CASE & stem-CASE-POSS] is unacceptable. The reason why the judgment for (26) is not completely ungrammatical for certain speakers might be due to morpheme-specific reasons, but it is worth indicating that the [stem-CASE & stem-CASE-POSS] is never produced in natural contexts.

(26) */??Tery -eer boloor morⁱ -eer -minⁱ ir -sen -taanⁱ.
 vehicle -INST CONJ1 horse -INST-1SG.POSS come -PST -2PL
 Int. ‘You.PL came with my vehicle and my horse.’

Thus, the unusual pattern that emerges is that in [stem-CASE-POSS & stem-CASE-POSS] coordination, suspending POSS is unacceptable, even though it conforms to the right edge condition. This pattern extends to suspended affixation involving all three morphemes PL, CASE, and POSS, presented in (27). To summarize the patterns, suspended affixation in (27) conforms to the predictions of the right edge condition, except for the example where POSS is independently suspended (i.e., example (27c)).

- (27) a. Terey boloor morⁱ -sul -eer -minⁱ ir -sen -taanⁱ.
 vehicle CONJ1 horse -PL -INST-1SG.POSS come -PST -2PL
 ‘You.PL came on my vehicles and my horses.’
- b. Terey -sul boloor morⁱ -sul -eer -minⁱ ir -sen -taanⁱ.
 vehicle -PL CONJ1 horse -PL -INST-1SG.POSS come -PST -2PL
 ‘You.PL came on my vehicles and my horses.’
- c. *Terey -sul -eer boloor morⁱ -sul -eer -minⁱ ir -sen -taanⁱ.
 vehicle -PL -INST CONJ1 horse -PL -INST -1SG.POSS come -PST -2PL
 Int. ‘You.PL came on my vehicles and my horses.’
- d. *Terey -eer -minⁱ boloor morⁱ -sul -eer -minⁱ ir -sen -taanⁱ.
 vehicle -INST -1SG.POSS CONJ1 horse -PL -INST -1SG.POSS come -PST -2PL
 Int. ‘You.PL came on my vehicles and my horses.’
- e. *Terey -sul -minⁱ boloor morⁱ -sul -eer -minⁱ ir -sen -taanⁱ.
 vehicle -PL -1SG.POSS CONJ1 horse -PL -INST -1SG.POSS come -PST -2PL
 Int. ‘You.PL came on my vehicles and my horses.’
- f. *Terey -minⁱ boloor morⁱ -sul -eer -minⁱ ir -sen -taanⁱ.
 vehicle -1SG.POSS CONJ1 horse -PL -INST-1SG.POSS come -PST -2PL
 Int. ‘You.PL came on my vehicles and my horses.’
- g. *Terey -eer boloor morⁱ -sul -eer -minⁱ ir -sen -taanⁱ.
 vehicle -INSTCONJ1 horse -PL -INST -1SG.POSS come -PST -2PL
 Int. ‘You.PL came on my vehicles and my horses.’

A complete list of suspended affixation patterns in Dagur nominal domain is presented in [Table 2](#).

		Conjunction	Example#
a.	✓	N-PL & N-PL	(11)
b.	✓	N-POSS & N-POSS	(13)
c.	✓	N-CASE & N-CASE	(12)
d.	✓	N-PL-CASE & N-PL-CASE	(15)
e.	✓	N-PL-CASE & N-PL-CASE	(14)
f.	*	N-PL-CASE & N-PL-CASE	(16)
g.	✓	N-PL-POSS & N-PL-POSS	(17)
h.	✓	N-PL-POSS & N-PL-POSS	(18)
i.	*	N-PL-POSS & N-PL-POSS	(19)
j.	??/*	N(-PL)-CASE-POSS & N(-PL)-CASE-POSS	(21) (26) (27c)
k.	*	N(-PL)-CASE-POSS & N(-PL)-CASE-POSS	(22) (24) (27e)
l.	✓	N(-PL)-CASE-POSS & N(-PL)-CASE-POSS	(23) (25) (27b)
m.	*	N-PL-CASE-POSS & N-PL-CASE-POSS	(27d)
n.	*	N-PL-CASE-POSS & N-PL-CASE-POSS	(27f)
o.	*	N-PL-CASE-POSS & N-PL-CASE-POSS	(27g)
p.	✓	N-PL-CASE-POSS & N-PL-CASE-POSS	(27a)

Table 2 Distribution of suspended affixation in Dagur nominal conjunction.

As indicated in [Table 2](#), suspended affixation involving both CASE and POSS morphemes (rows *j*, *k*, *l* of [Table 2](#)) displays unexpected patterns in the sense that it is not fully captured by the right edge constraint. In particular, while POSS is located at the right edge of each conjunct, suspending POSS independently is unacceptable.

3.3 The structure of Dagur suspended affixation

3.3.1 Background

Depending on the language, the structure of suspended affixation can be analyzed in various ways. One of the analyses proposes it to be ellipsis (e.g., Erschler 2018; Guseva & Weisser 2018), in which two fully inflected forms are coordinated, with the suspended affixes elided at PF:

- (28) ellipsis analysis
 [[A -suffixes] & [B -suffixes]]

Another approach (e.g., Kornfilt 1996; Good & Yu 2005; Kabak 2007) analyzes suspended affixation as a coordinate structure conjoining two smaller constituents, with further inflection taking place on that coordination. This is in a similar vein with Kornfilt's (2012) right node raising analysis of Turkish suspended affixation. I refer to this line of analysis as the base-generation account.

- (29) base-generation analysis
 [A & B]-suffixes

We could first consider how the analysis that utilizes morpheme ellipsis fits into the Dagur data at hand. This is evaluated through a brief empirical comparison between Dagur and Mari (Finno-Ugric), reported in Guseva & Weisser (2018) (henceforth G&W (2018)). I focus on one specific fact in Mari, where “local” case such as inessive case precedes the possessive suffix, exhibiting the CASE-POSS linear order which is also attested in Dagur:

- (30) *Mari* (G&W 2018: (4))
 pasu -vlak -ešte -na
 garden -PL -INESS -1PL.POSS
 ‘in our gardens’

Suspended affixation with CASE and POSS suffixes displays some surprising patterns summarized in (31) – in *Mari*, the judgments for (31a–b) are the opposite of what is expected under the right edge condition.

- (31) *Mari* morpheme suspension with CASE and POSS (based on G&W 2018: (34))³

	coordination with suspended affixation	<i>Mari</i>
a.	stem-CASE-POSS & stem-CASE-POSS	✓
b.	stem-CASE-POSS & stem-CASE-POSS	*

(CASE suffix refers to a subset of cases which G&W refer to as K1 or local case)

In G&W’s account, the CASE-POSS order is the consequence of the interaction between morpheme ellipsis and a linear metathesis operation (D-metathesis in G&W:1105). G&W assume a uniform DP-internal syntax and a mapping algorithm such as the Mirror Principle. Assuming the levels of projection is underlyingly (32) in *Mari*, the direct output of linearization is stem-PL-POSS (D)-CASE (K).

- (32) The underlying structure of *Mari* nominals

$[_{KP} [_{DP} [_{Nump} NP Num] D] K]$

G&W argue that the facts in (31) are due to the original right edge suffix (i.e., -CASE) undergoing ellipsis after linearization, but crucially before the metathesis operation changes the order from POSS-CASE to CASE-POSS. Thus CASE – the right edge suffix before metathesis – can be elided, and the right edge condition is satisfied at this intermediate stage (i.e., at (33b)).⁴

- (33)
- | | | |
|----|---------------|---|
| a. | Linearization | stem-POSS-CASE & stem-POSS-CASE |
| | ⇓ | ⇓ |
| b. | Ellipsis | stem-POSS- CASE & stem-POSS-CASE |
| | ⇓ | ⇓ |
| c. | Metathesis | stem-POSS & stem-CASE-POSS |

The key point of this component of their analysis is that morphological operations (ellipsis and metathesis) apply to the linearized structure, deriving the suspension patterns that appear to violate the right edge condition on the surface form. However, such mechanism does not easily extend to *Dagur*. Regarding the stem-CASE-POSS constructions, while in *Mari* suspending the non-final CASE suffix is grammatical (34a), it is ungrammatical in *Dagur*. An analysis that utilizes ellipsis and metathesis on linearized structures would not be able to rule out both surface forms (34a-b) at the same time.

	coordination with suspended affixation	<i>Mari</i>	<i>Dagur</i>	
(34) a.	stem-CASE-POSS & stem-CASE-POSS	✓	*	(24)
b.	stem-CASE-POSS & stem-CASE-POSS	*	??/*	(26)

Further investigation into the syntax prior to linearization reveals that *Dagur* suspended affixation involves a syntactic structure that is different from *Mari*. I suggest that it is this syntactic structure in combination with other postsyntactic operations that generate the *Dagur* surface pattern in (34).

3 Here “stem” abstractly represents the $[[\text{Root } n]\text{-PL}]$ complex, or $[\text{Root } n]$. As the presence of plural does not affect the point being made here, it is omitted for expository purpose.

4 It should be emphasized that this discussion is a significantly oversimplified illustration of one aspect of G&W’s theory. The morphological processes in *Mari* are complex and require the combination of several postsyntactic operations. For example, there is a separate Lowering operation that derives the order between POSS and PL. PL also intervenes between CASE and POSS which leads to a specific formulation of metathesis operation called D-Metathesis (G&W: (41)). However, these do not affect the general point being made here.

3.3.2 The base-generated structure of Dagur suspended affixation

In contrast with recent analysis of languages with morpheme ellipsis (e.g., Erschler 2018; Guseva & Weisser 2018), independent evidence from different types of coordinators reveals that suspended affixation constructions in Dagur is best analyzed as base-generated in the sense of (29), instead of ellipsis (28). In Dagur, different types of coordinate structures require different coordinators. Specifically, coordinated nominals in argument positions are conjoined by *boloor*, whereas the coordinator *beitleen* is used when the conjoined elements of nominal, adjectival, and verbal categories are in non-argument positions. Throughout the paper, I gloss *boloor* as CONJ1, and *beitleen* CONJ2 in order to differentiate between the two. I illustrate the distribution of these two coordinators in detail below, focusing on the coordinate structures of nominals and adjectives. The properties of these coordinators ultimately offers us a testing ground for the ellipsis versus the base-generation analysis of suspended affixation in this language.

First, as previously mentioned, *boloor* (CONJ1) is used to conjoin nominals in argument positions. This is shown in (35)–(37), with coordinated bare nouns, plural nouns, and possessed nouns in argument positions.

- (35) Bi [pii **boloor** čaas] au -sen -bi.
I [pen CONJ1 paper] buy -PST -1SG
'I bought pen **and** paper.'
- (36) [Mori(-sul)**boloor** noyu -sul] xajir -sen.
[horse-PL CONJ1 dog -PL] return -PST
'Horses **and** dogs returned.'
- (37) [Pii (-min') **boloor** čaas -min'] tend bei.
[pen -1s.POSS CONJ1 paper -1s.POSS] there COP
'My pen **and** my paper are there.'

Second, the coordinator *beitleen* (CONJ2) is used when the coordinated elements appear in predicate positions (38), using *boloor* (CONJ1) in these sentences is impossible.

- (38) a. NP predicates
Sečin [seb **beitleen** tačkui daa].
Sečin teacher CONJ2 principal
'Sečin is a teacher **and** a principal.'
- b. AP predicates
Ene ger [engel **beitleen** geyeeken].
this room spacious CONJ2 bright
'This room is spacious **and** bright.'
- c. VP predicates
(Bi) [pinguee -ii id -sen **beitleen** moil -ii (baa) id -sen] -bi.
I apple -ACCeat -PST CONJ2 hackberry -ACC also eat -PST -1SG
'I ate apple **and** (also) ate hackberry.'

Two points regarding the usage of these coordinators should be highlighted. First, while in both (35) and (38a) there appears to be two noun phrases that are coordinated, the structure of (38a) is clearly distinct from that of (35). Specifically, (38a) is a predicative sentence in which the coordinated noun phrases *seb* 'teacher' and *tačkui daa* 'principal' are non-referential NPs that function predicatively. The sentence ascribes the individual Sečin the property of being a teacher and a principal. Thus, the coordinator *beitleen* (CONJ2) must be used. (38a) could be contrasted with (39), in which the coordinated noun phrases are located in the object position of the main verb *ujsen* 'saw'. Since the noun phrases are arguments of the verb, the coordinator *boloor* (CONJ1) must be used. The coordinated noun phrases in (39) refer to two individuals, in contrast to (38a).⁵

⁵ It is well known that predicate nouns are structurally distinct from regular (referential) NP arguments. For example, Bowers (1993) and much research thereafter propose that predicative nouns involve a functional category Pr that selects for an NP, thereby making it predicational. In contrast, non-predicational phrases such as referential NPs do not involve Pr.

- (39) cf. (38a)
 Sečín [seb **boloor** tačkui daa] uʃ -sen.
 Sečín teacher CONJ1 principal see -PST
 ‘Sečín saw (a) teacher and (a) principal.’

Further, (38a) could be contrasted with (40), which is an identity sentence (equivative sentence) where the coordinated nominal phrases *Bat boloor Sečín* ‘Bat and Sečín’ are referential arguments. The sentence asserts that the individuals denoted by the noun phrase *seb-inʃ* ‘the teachers/his teachers’ and the individuals denoted by *Bat* and *Sečín* are identical. As expected, here only the coordinator *boloor* (CONJ1) is possible.

- (40) cf. (38a)
 Seb -inʃ Bat **boloor** Sečín.
 teacher -3SG.POSS Bat CONJ1 Sečín
 ‘The teachers/His teachers are Bat and Sečín.’⁶

The contrast among (38a), (39), and (40) shows that the choice of coordinators in Dagur is sensitive to whether the coordinated nominals occur in argument positions or not. Specifically, *boloor* (CONJ1) is used to conjoin nominals in argument positions, whereas *beitleen* (CONJ2) is used when the coordinated elements appear in non-argument positions.

The second point regarding the usage of the coordinators concerns the interpretation of coordinated adjectives. Generally speaking, adjectives can appear in two main types of syntactic contexts – as attributive adjectives directly modifying a noun, or as predicates (see Valois (2008) and Hofherr (2010) and reference therein). In Dagur, both attributive and predicative adjectives are coordinated with the coordinator *beitleen* (CONJ2).

- (41) Attributive adjectives
 [xiy **beitleen**/***boloor** xulaan] pinguee
 big CONJ2/*CONJ1 red apple
 ‘big and red apple’
- (42) Predicative adjectives =(38b)
 Ene ger [engel **beitleen**/***boloor** geyeeeken].
 this room spacious CONJ2/*CONJ1 bright
 ‘This room is spacious and bright.’

As indicated by the translation, in (41) the only reading available is one in which both adjectives jointly modify the noun ‘apple’. That is, the meaning is necessarily ‘(an) apple that is big and red’, not ‘(an) apple that is big and (an) apple that is red’. Using the argument coordinator *boloor* (CONJ1) in (41) is not acceptable.⁷ Given that only *beitleen* (CONJ2) is allowed as the overt coordinator in (41), and that the structure only licenses joint reading, where ‘big’ and ‘red’ modify the same apple, a plausible structural analysis for *beitleen*-coordinated prenominal attributive adjectives seems to be that it does not involve underlying coordination of two nominals. Instead, it is two adjectives that are coordinated in constructions such as (41).

With the distribution of different coordinators in mind, we are now ready to test whether Dagur suspended affixation involves morpheme ellipsis, or a base-generated structure without

6 When the 3SG.POSS suffix *-inʃ* is used without an overt possessor, the NP is ambiguous between a pure definite (without possessive) interpretation and a possessive interpretation. For example, *bitey -inʃ* (book-3SG.POSS) means either ‘the book’ (referring to a book salient in the context or previously mentioned in the discourse, with no possessive interpretation), or ‘his/her book’ (implying there is a third person possessor). When there is an overt possessor, the construction is unambiguously possessive. For example, *Sečín-in bitey-inʃ* (Sečín-GEN book-3SG.POSS) simply means ‘Sečín’s book’.

7 A form such as (i) can be used to obtain the reading ‘(a) big apple and (a) red apple’.

- (i) xiy pinguee **boloor** xulaan pinguee
 big apple CONJ1 red apple
 ‘big apple and red apple’

ellipsis. The crucial data involve suspending the 3SG.POSS suffix *-inⁱ* in a special nominalizing context. In addition to signaling possessive agreement, the suffix *-inⁱ* can change an adjectival phrase into a noun phrase, with no possessive interpretation. For example, a regular adjective *xulaan* ('red', as in (43a)) followed by *-inⁱ* gives rise to the reading of 'the red one' (43b-c), with no possessive interpretation. Without *-inⁱ*, the adjective cannot function as an argument (43d).

- (43) a. nek xulaan pinguee
 one red apple
 'a red apple'
- b. xulaan -inⁱ
 red -3SG.POSS
 'the red one'
- c. xulaan -ii -inⁱ id -sen -bi
 red -ACC-3SG.POSS eat -PST -1SG
 'I ate the red one.'
- d. *xulaan -ii id -sen -bi
 red -ACCEat -PST -1SG
 Int. 'I ate the red one.'

This "nominalizing" *-inⁱ* is in complementary distribution with regular possessive suffixes. As shown in (44), the special *-inⁱ* morpheme and regular possessive marker cannot be stacked. I take this to indicate that the special *-inⁱ* and regular possessive morphemes occupy the same head in the nominal structure.

- (44) a. cf. (43b)
 (minii) xulaan -minⁱ
 1SG.GEN red -1SG.POSS
 'my red one'
- b. *(minii) xulaan -minⁱ -inⁱ
 1SG.GEN red -1SG.POSS -3SG.POSS
 Int. 'my red one'
- c. *(minii) xulaan -inⁱ -minⁱ
 1SG.GEN red -3SG.POSS -1SG.POSS
 Int. 'my red one'

Given the above facts, the coordinate structure (45a) in which two "nominalized" adjectives like the one in (43b) are conjoined requires the coordinator *boloor* (CONJ1), not *beitleen* (CONJ2). The choice of coordinator in (45a) is expected since *boloor* conjoins two nominals in the argument position, whereas *beitleen* does not. Surprisingly, if the suffixes on the first conjunct is suspended, the resulting construction in turn requires the coordinator *beitleen* (CONJ2) as in (45b), and is ungrammatical with *boloor* (CONJ1), shown in (45c).

- (45) [context: there are many apples on the table]
- a. (Bi) [xiy -ii -nⁱ **boloor**/***beitleen** xulaan -ii -nⁱ] id -sen -bi.
 (I) big -ACC -3SG.POSS CONJ1/*CONJ2 red -ACC -3SG.POSS eat -PST -1SG
 'I ate the big one and the red one.'
- b. (Bi) [xiy **beitleen** xulaan -ii -nⁱ] id -sen -bi.
 (I) big CONJ2 red -ACC -3SG.POSS eat -PST -1SG
 'I ate the one that is big and red.'
 *'I ate the big one and the red one.'
- c. *(Bi) [xiy **boloor** xulaan -ii -nⁱ] id -sen -bi.
 (I) big CONJ1 red -ACC -3SG.POSS eat -PST -1SG

We know that the choice of coordinators is sensitive towards the argument/non-argument status of the nominals. If suspended affixation were ellipsis, the coordinations in (45a) and (45b)

would share the same underlying structure which is schematized in (46), and would require the coordinator *boloor* (CONJ1) instead of *beitleen* (CONJ2). However, the fact turns out to be that once suspended affixation takes place, the coordinator *boloor* (CONJ1) becomes ungrammatical (45c), and instead the other coordinator *beitleen* (CONJ2) is required (45b). These facts would not be straightforwardly explained if suspended affixation is morpheme ellipsis. In contrast, they are fully expected if the morpheme suspension phenomena observed on the surface structure is in fact base-generated in the syntax. Under this analysis, the structure in (45b) is in fact (47), where two adjectives are conjoined. As a result, only *beitleen* (CONJ2) is allowed as the coordinator.

(46) [big-3SG.POSS & red-3SG.POSS]

(47) [big & red] -3SG.POSS

4 The analysis

4.1 The structure of the Dagur nominal domain and theoretical assumptions

4.1.1 The structure of the Dagur nominal domain

Before presenting the main analysis, I first examine some additional characteristics of the Dagur nominal domain that will help us determine its specific structure in the syntax. Bošković (2005; 2008; 2009; 2010a) and research thereafter show that languages without articles differ from languages with articles in systematic ways. Under the view that the lack of definite article suggests the lack of DP, Dagur, lacking an article system, can be regarded as an NP language.⁸ If we adopt this view, some of the empirical phenomena we have seen in the previous section naturally follows. First, we have seen that bare nouns directly function as arguments in this language. This contrasts with DP languages such as Romance languages, in which NPs cannot occur as arguments unless they project a category D(eterminer). In Dagur, the bare noun followed by various nominal suffixes may also directly function as arguments.

- (48) a. **Mori** ir -sen.
 horse come -PST
 ‘The/a horse(s) came.’
- b. **Mori-sul** ir -sen.
 horse-PL come -PST
 ‘Horses came.’
- c. **Mori -minⁱ** ir -sen.
 horse -1SG.POSS come -PST
 ‘My horse(s) came.’
- d. Engkebatu (1985)
 ...**duut terwul -ii** eri -sen.
 shortcut road -ACC search -PST
 ‘(She/he) searched for the shortcut.’

Second, the location of coordinated APs modifying a noun (e.g., (41), repeated here as (49)) can be naturally related to the internal structure of NP. Bošković (2005) argues that the position of AP in Serbo-Croatian (SC), an NP language, differs from the one in DP languages such as English. He suggests that DP languages exhibit the AP-over-NP pattern, whereas NP languages have the NP-over-AP pattern. According to this view, Dagur is expected to have the NP-over-AP pattern, and the structure in (49) would involve a pair of coordinated APs adjoined to the [_{NP}

⁸ As an anonymous reviewer points out, many authors have argued that the lack of articles does not always indicate the lack of DP. For arguments made based on evidence from different languages, see Manlove (2015) for West Greenlandic, Lyutikova & Pereltsvaig (2015) for Tatar, Giusti & Iovino (2016) for Latin, Stanković (2017) for Serbo-Croatian, Syed & Simpson (2017) for Bangla, Norris (2018) for Estonian, and Erschler (2019) for Ossetic. However, many of these proposals cannot be easily extended to Dagur, which seems to lack empirical support for positing a DP layer in its nominal domain. Therefore I will assume Bošković’s approach for the purpose of this work. For the general debate on the very existence of DP, see Bruening (2009; 2020) and Chomsky (2020) for arguments against the DP, and the replies of Preminger (2020) and Salzman (2020) to Bruening’s arguments.

apple]. Since the structure involves a pair of conjoined APs modifying one single NP, the only possible interpretation is ‘a single apple/a single set of apples that is both big and red’.⁹

- (49) xiy **beitleen** xulaan pinguee
big CONJ2 red apple
‘(a) big and red apple(s)’

Dagur’s nominal structure has implications for the location of possessives within the nominal domain as well. It has been argued that in some NP languages such as SC (Zlatic 1997; Bošković 2005; 2009), possessors pattern with APs in many ways and thus should be analyzed as modifiers of NP. However, the possessors in Dagur do not pattern with APs as in SC, suggesting that they should not be simply treated as modifiers of NPs. First, in Dagur noun phrases, the possessor (if available) is always the first element, followed by demonstratives, which is in turn followed by numerals, adjectives, and the head noun. The order between numeral and adjective could be flexible, but neither may precede the demonstrative or the possessor. The demonstrative may not precede the possessor. The head noun usually does not bear any plural suffix if a numeral precedes it. An example is given in (50).

- (50) Mergen -ii en (saikan) g^warben (saikan) ujin -inⁱ
Mergen -GEN this beautiful three beautiful daughter -3SG.POSS
‘These three beautiful daughters of Mergen’s’

Second, as discussed in Bošković (2005), in SC possessives can occur in typical adjectival positions such as the predicative position. But this is not possible in Dagur (all SC examples are from Bošković (2005) and Bošković (2009) unless otherwise indicated).

- (51) a. SC
Ova knjiga je moja.
this book is my
b. *Dagur*
*Ene bitey minii.
this book my

Third, the order of prenominal adjective and possessor in SC is relatively free. However, in Dagur only one order is possible. The adjective which modifies the head noun must not precede the possessor.

- (52) a. SC
Jovanova skupa slika /skupa Jovanova slika
John’s expensive picture /expensive John’s picture
b. *Dagur*
Mergen-ii katuu bitey /*katuu Mergen-ii bitey
Mergen-GEN expensive book /*expensive Mergen-GEN book

Fourth, in SC possessives must follow demonstratives. However, in Dagur overt prenominal possessors must precede demonstratives.

- (53) a. SC
Ova Jovanova slika/?*Jovanova ova slika
this Jovan’s picture/?*Jovan’s this picture
b. *Dagur*
*Ene Mergen-ii bitey/Mergen-ii ene bitey
*this Mergen-GEN book/Mergen-GEN this book

Further, in SC possessors cannot be modified by any type of modifiers. For instance, the possessor cannot be modified by another adjective, or another possessor. Both instances are perfectly acceptable in Dagur.

9 I thank an anonymous reviewer for suggesting this.

- (54) SC (Despić 2011)
- a. *Lepi čovekov pas.
 Beautiful man's dog
 'Beautiful man's dog' (the only possible reading: 'The man's beautiful dog')
- b. *Ivanov bratov pas
 Ivan's brother's dog
 'Ivan's brother's dog.'

- (55) *Dagur*
- a. saikan Sečin -ii ujin
 beautiful Sečin -GEN daughter
 'Beautiful Sečin's daughter' (the only possible reading: 'The daughter of beautiful Sečin's')
- b. (maanii) ačaa -ii -maan' mori -in'
 our father -GEN-1PL.POSS horse -3SG.POSS
 'Our father's horse'

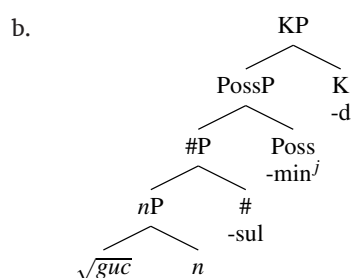
Further details regarding the syntax of the nominal structure of *Dagur* is beyond the scope of the current paper. However, the above contrast between SC and *Dagur* is sufficient to show that the structural status of *Dagur* possessives is different from that of SC. I take these facts to indicate that there is indeed a functional projection PossP projected above *Dagur* NPs, with the Poss head being the possessive agreement suffix. It is emphasized in much research (e.g., Bošković 2008; 2010; 2010a;b; Despić 2011) that the absence of definite articles does not entail the complete absence of nominal functional projections in the language. It is possible and within expectations that the specific levels of projections within the NP domain vary cross-linguistically. To summarize, under the view of Bošković (2005; 2008; 2009; 2010a), *Dagur* does not project DP. However, I maintain that there is a functional projection PossP within *Dagur* nominal domain, and that the possessive suffix occupies the Poss head.

4.1.2 Theoretical assumptions

The current analysis is couched in the framework of Distributed Morphology, along the lines of Embick & Marantz (2008) and Embick (2010; 2015). In particular, the syntax creates complex objects out of different types of morphemes, the Roots and the functional morphemes, which are terminal nodes in the syntactic derivation. The Roots are assumed to be category-neutral, and are categorized in the syntax by category-defining heads such as *n*, *v*, *a*, yielding nouns, verbs, adjectives, and so on. These category-defining heads are regarded as cyclic in the sense of the phase theory, following the view that syntactic derivations operate in terms of cyclic domains (Chomsky 2000; 2001). I assume that in *Dagur*, a noun phrase such as the one in (56) has the levels of projection as depicted in (57) in syntax.

- (56) guč -sul -d -min'
 friend -PL -DAT -1SG.POSS
 'my friends'

- (57) a. [[[[√ROOT n_{np}] #_{#p}] Poss_{POSSP}] K_{KP}]



Following Embick (2015), I assume that the PF component is responsible for the computation and representation of linear information. Within the PF component, there is also a set of postsyntactic operations that apply to the output of syntactic derivations, in the sense of

Embick & Noyer (2001). Vocabulary Insertion at PF supplies syntactic terminal nodes with phonological content. For example, the Vocabulary Item in (58) applies to the node # [+ PL] for regular nouns such as *mori* ‘horse’ and *seb* ‘teacher’:

(58) # [+ PL] ↔ -sul

Similarly, by Vocabulary Insertion POSS morphemes are inserted at the Poss head, and CASE at K. In the rest of this section, I will demonstrate that the hierarchy in (57b) can be maintained if K is lowered to Poss after syntax in the PF component.

4.2 Account for the morpheme suspension patterns

Based on cross-linguistic evidence, research such as Lamontagne & Travis (1987), Bittner & Hale (1996), McFadden (2004), and Levin (2015) takes the highest head in the nominal projection to be K. This is also what the current paper assumes in the underlying structure (57b). However, directly linearizing this structure will give rise to the order in which CASE follows POSS, contrary to the surface CASE-POSS order observed in Dagur nominals. I suggest that Lowering, a post-syntactic morphological operation, helps produce the surface linear order in which POSS follows CASE.

(59) Lowering of X^0 to Y^0 (Embick & Noyer 2001)
 $[_{XP} X^0 \dots [_{YP} \dots Y^0 \dots]] \rightarrow [_{XP} \dots [_{YP} \dots Y^0 + X^0 \dots]]$

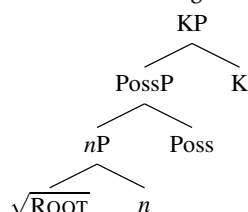
The Lowering operation explains the unexpected suspended affixation patterns in constructions with both CASE and POSS present. In particular, in *j.*, *k.*, and *l.* of [Table 2](#), repeated here, when the suffix sequence -CASE-POSS is present on the noun, suspending either CASE or POSS is unacceptable. The only grammatical option is one in which CASE and POSS are suspended altogether (the presence or absence of an additional plural morpheme does not affect the judgment of these constructions, thus it is omitted in the representations in [Table 3](#)).

	Conjunction	Example #
j.	??/* stem-CASE-POSS & stem-CASE-POSS	(21) (26) (27c)
k.	* stem-CASE-POSS & stem-CASE-POSS	(22) (24) (27e)
l.	✓ stem-CASE-POSS & stem-CASE-POSS	(23) (25) (27b)

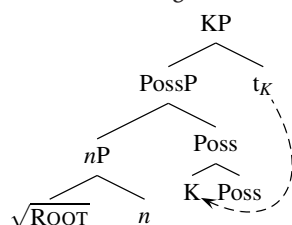
Table 3 Dagur morpheme suspension involving CASE and POSS.

In the analysis proposed here, the data which satisfy the right edge condition (i.e., row *j*) but are nevertheless ungrammatical are, in fact, violations of the underlying levels of projection. In addition, the ungrammatical data which violate the right edge condition (i.e., row *k*) can be independently explained from the fact that the coordinate structure blocks K-Lowering. The process of K lowering to Poss at PF is illustrated in (60)–(61). Following the Late Lowering Hypothesis (Embick & Noyer 2001), this lowering operation takes place after all kinds of syntactic derivations, prior to linearization.

(60) before K-Lowering



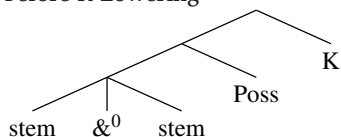
(61) after K-Lowering



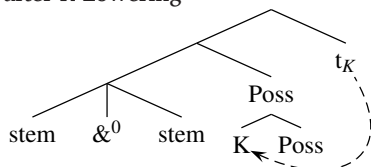
First, the surface form [\surd stem-CASE-POSS & stem-CASE-POSS] in row *l* of [Table 3](#) is derived by conjoining two stems, with Poss and K directly merging above the coordinate structure. K-Lowering operates on the structure (62a), giving rise to (62b):

(62) Table 3, row *l*. [\surd stem-CASE-POSS & stem-CASE-POSS]

a. before K-Lowering



b. after K-Lowering

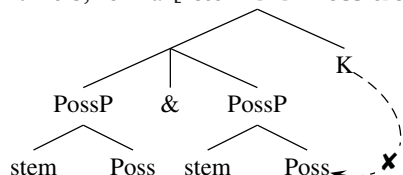


The surface form in (63) is the result of linearizing the output of K-to-Poss Lowering in the structure (62b).

(63) tačku boloor ger -d -maanⁱ
 school CONJ1 house -DAT -1PL.POSS
 ‘At our school and (our) house’

Second, consider the ungrammatical form [\ast stem-CASE-POSS & stem-CASE-POSS] in row *k* of [Table 3](#). On the surface, this form is ungrammatical because, as described by the right edge condition, suspending the non-final suffix is not allowed. Under the current analysis, this surface condition can be independently explained on the basis of the syntactic structure. As shown in (64), the coordinate structure in which two PossPs are conjoined below K blocks K-Lowering. The reason is that by the definition of Lowering (59), a head only lowers to the head of its complement. Here the head of K’s complement is the coordinator head. Therefore K cannot lower to Poss.

(64) Table 3, row *k*. [\ast stem-CASE-POSS & stem-CASE-POSS]



Therefore, surface forms such as (65) are always ruled out.

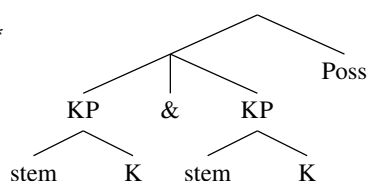
(65) \ast tačku -maanⁱ boloor ger -d -maanⁱ
 school -1PL.POSS CONJ1 house -DAT -1PL.POSS
 Int. ‘At our school and our house’

Finally, consider the unacceptable form [\ast /??stem-CASE-POSS & stem-CASE-POSS] in row *j* of [Table 3](#), repeated below:

(66) \ast /?? stem-CASE-POSS & stem-CASE-POSS

I suggest that this structure is unacceptable because it is not generated by the syntax. In order to obtain this surface form, the structure must be like the one shown in (67), where two KPs are conjoined under Poss. Since K is base-generated above Poss in the underlying syntactic structure, (67) is ruled out.

(67) \ast



Therefore, surface forms such as (68) are ruled out.

- (68) *ger -d boloor tačku -d -maan'
 house -DAT CONJ1 school -DAT -1PL.POSS
 Int. 'At our home and (our) school'

Note that it is not the case that KPs cannot be coordinated in this language. This is an important point to clarify, because the current analysis suggests that (66) is unacceptable because of the constraint on the underlying syntactic structure, which states that KP must dominate PossP. In order to maintain this analysis, it must be independently shown that the language allows [stem-CASE] & [stem-CASE], and thus it is not the case that (66) is ungrammatical due to a ban on conjoining two KPs in the language. Coordinating KPs is indeed allowed in Dagur. For example, (69) is grammatical:

- (69) (Bi) seb -d, guč -d jašyēn ši -sen -bi
 (I) teacher -DAT friend -DAT letter write -PST -1SG
 'I wrote letter to teacher(s) and friend(s).'

4.3 Comparison with linear displacement analyses

As demonstrated, the analysis based on Lowering accounts for all the possible and impossible forms of suspended affixation involving CASE and POSS morphemes. At this point, it is worthwhile to compare it with other analytical possibilities. For example, one alternative is to consider linear morpheme displacement such as Local Dislocation (e.g., Embick 2007a;b; Embick & Noyer 2007; 2001). Similar to Lowering, Local Dislocation is a postsyntactic operation that is responsible for surface displacement of morphemes that deviates from the order of levels of projections in syntax. While Lowering applies to the hierarchical structure prior to linearization, Local Dislocation takes place after linearization and manipulates string-adjacent elements.

Historically, it seems that the Dagur personal possessive pronouns used to appear in post-nominal enclitic positions, which has resulted in the grammaticalization of POSS suffixes.¹⁰ Since there are diachronic reasons for thinking that POSS suffixes are developed from post-nominal enclitics, an analysis in which POSS is directly displaced to a position in which it linearly follows K appears to be plausible. Take (70) as an example, suppose that no Lowering operation applies at the syntactic structure and linearization takes place right after syntax. Linearization would produce a statement such as the one in (70b). The notations in (70b-c) follow Embick & Noyer (2001) and Embick (2007a) and use $a * b$ to denote linear adjacency between heads and phrases (stating that a must linearly precede b and be adjacent to b), and $a \oplus b$ to represent adjacency within complex heads. Crucially, Local Dislocation makes reference to linear precedence and adjacency, which are encoded in the linear statement (70b), not in the hierarchical structure, which is (70a). Therefore Local Dislocation converts (70b) to (70c), giving rise to the surface order where Poss linearly follows K. It appears that the Local Dislocation analysis, without resorting to Lowering, can also derive the grammatical surface form (70).

- (70) [✓ stem-CASE-POSS & stem-CASE-POSS] (Table 3, row *l*)
 a. Hierarchical structure: [_{KP} [_{POSSP} [_{&P} nP & nP] Poss] K]
 b. Linearization: [[[nP * & * nP] * Poss] * K]
 c. Local Dislocation: [[[nP * & * nP] * [_{POSS} K \oplus Poss]]

¹⁰ The (genitive) personal pronouns have been used as enclitics in Proto-Mongolic, which has resulted in the grammaticalization of POSS suffixes in several modern Mongolic languages (Janhunen 2003). Dagur's POSS agreement marking system is an example of such grammaticalization. The high resemblance in the morphophonological shapes of personal pronouns and POSS markers also suggest a close connection between the two:

	GEN pronoun	POSS marker	GEN pronoun	POSS marker	
1s	minii	-min'	1PL	maanii	-maan'
2s	šinii	-šin'	2PL	taanii	-taan'
3s	inii	-in'	3PL	aanii	-in'/-iian'

Since the POSS markers under investigation used to be independent words, it displays a certain degree of phonological independence compared to regular suffixes like CASE, a point which I will come back to in Section 5.

However, such analysis makes incorrect predictions regarding the surface form (71), which has the hierarchical structure (71a) in syntax, where two PossPs are coordinated under a single K head. Linearizing (71a) produces the statement in (71b). In (71b), the boldfaced Poss is the right-peripheral element of the constituent that is immediately adjacent to K. Since Local Dislocation makes reference to linear adjacency, not hierarchical structure, it has the capacity to convert (71b) to (71c), giving rise to the surface string [nP-Poss & nP-K-Poss] (i.e., [stem-POSS & stem-CASE-POSS]). However, this form is ungrammatical in Dagur. Note that without additional stipulation, the application of Local Dislocation to (71b) is legitimate since all the linear precedence or adjacency (*) relations in (71b) are either preserved or properly converted in accordance with the Local Dislocation rule. Prior to Local Dislocation (71b), the second nP must be linearly followed by Poss. After Local Dislocation (71c), such relationship is maintained – this nP is still linearly followed by Poss, which is now internally complex. In other words, without additional stipulation, Local Dislocation would apply to the structure in (71), and generates an ungrammatical form. In contrast, the Lowering analysis correctly rules out (71), on the basis that the coordinate structure blocks the higher K head from lowering to Poss.

- (71) *[stem-CASE-POSS & stem-CASE-POSS] (Table 3, row k.)
- Hierarchical structure: $[_{KP} [_{&P} [_{POSSP} [nP] Poss]] \& [_{POSSP} [nP] Poss]] K$
 - Linearization: $[[[[nP] * Poss] * \& * [[nP] * \mathbf{Poss}]] * K]^{11}$
 - Local Dislocation: $[[[nP] * Poss] * \& * [nP] * [_{POSS} K \oplus Poss]]$

The discussion above potentially provides another case study to the literature on the distinction between hierarchical and linear morphological processes and the ordering among postsyntactic operations. The reason why Local Dislocation and Lowering make different predictions with regard to (71) (Table 3, row k.) is that Lowering, applying *before* linearization, is sensitive to the syntactic structure, particularly the levels of projections and syntactic headedness. In contrast, Local Dislocation, taking place *after* linearization, makes reference to the linear order and is therefore sensitive only to linear precedence and adjacency. Since Local Dislocation must always be local, K and Poss located on the right periphery of (71b) would satisfy such requirement and thus, without additional stipulations, can interact freely which incorrectly predicts an illicit form to be grammatical. In contrast, the Lowering analysis crucially makes use of the hierarchical coordinate structure to rule out (71), a piece of information that is only present in syntax, prior to linearization.

To sum up the discussion so far, Dagur uniformly displays unexpected order between CASE and POSS morphemes in its nominal domain. The properties of these two morphemes and their relationship with the rest of the nominal domain are explored through the phenomenon of suspended affixation. Specifically, suspending either CASE or POSS from the CASE-POSS sequence is ungrammatical in this language, a pattern that is not observed in other morpheme combinations. The unexpected patterns can be systematically explained with the interaction between the base-generated suspended affixation structure and K-to-Poss Lowering. The Lowering operation manipulates the output of syntax, deriving the CASE-POSS suffix order observed on the surface.

5 Linear relations of CASE and POSS morphemes

5.1 Morphophonological properties of CASE and POSS morphemes

This section focuses on further operations that take place after Lowering which derives the surface morphophonological differences between CASE and POSS morphemes. In terms of morphophonology, CASE and POSS behave differently with regard to how close they are to the stem or the base in Dagur nominals. Specifically, CASE shows a closer union with the stem or base than POSS, displaying what would be traditionally classified as clitic/affix distinctions. First, in Dagur, CASE morphemes participate in vowel harmony. This is illustrated with

11 It is assumed that prior to Local Dislocation, there might be “affixation” of K to its host which involve some sort of rebracketing or bracket-reduction (along the lines of e.g., Sproat 1985; Marantz 1988; Embick & Noyer 2001). Such process is string-vacuous, and in this case reduces one layer of brackets around the original &P, such that (71b) $[[[[nP] * Poss] * \& * [[nP] * \mathbf{Poss}]] * K$ is converted to $[[[nP] * Poss] * \& * \underline{[[nP] * Poss]}] * K$. The constituent immediately left-adjacent to K is the underlined $[[nP] * Poss]$.

instrumental case (for comprehensive descriptions of Dagur vowel harmony, see Zhong 1982; Engkebatu 1988; Tsumagari 2003; Ko 2018):

- (72) a. čaas **-aar**
 paper -INST
 ‘with paper’
- b. tos **-oor**
 oil -INST
 ‘with oil’
- c. tery **-eer**
 vehicle -INST
 ‘with vehicle’

In contrast, POSS morphemes (73) do not harmonize in any context. This is illustrated with 1PL. POSS marker *-maanⁱ* in (74).

(73) *Dagur possessive markers*

	singular	plural
1	-min ⁱ	-maan ⁱ
2	-šin ⁱ	-taan ⁱ
3	-in ⁱ	-in ⁱ /-iinan ⁱ

- (74) a. čaas **-maanⁱ**
 paper -1PL.POSS
 ‘our paper’
- b. terey **-maanⁱ**
 vehicle -1PL.POSS
 ‘our vehicle’

In nominal phrases that include both CASE and POSS morphemes, we observe that vowel harmony does not extend to POSS. This seems to suggest the presence of a prosodic boundary between CASE and POSS, as indicated in (75).

- (75) (maani) tery **-eer** | **-maanⁱ**
 1PL.GEN vehicle -INST | -1PL.POSS
 ‘with our vehicle’

Second, in Dagur, CASE markers triggers idiosyncratic morphological alternations on the stem, whereas POSS markers do not. For example, many Mongolic languages have an “unstable” or “fleeting” word-final /n/ in certain word stems that is invisible when the stem stands alone, but reappears when affixes attach to that stem. Dagur has eliminated the unstable /n/ from the declension of regular nouns. However, the unstable /n/ is still preserved in numerals and pronominal declension (Tsumagari 2003), which is triggered by the affixation of CASE suffixes (76) (e.g., Tsumagari 2003; Engkebatu 1988). In contrast, my field data show that personal possessive suffixes do not trigger the unstable /n/ on the same pronominal stem (77).

- (76) Tsumagari (2003)
 joo ‘what’ – joon -d ‘what -DAT’

- (77) joo ‘what’ – joo -taanⁱ ‘what -2PL.POSS’

In fact, POSS suffixes almost never trigger true lexical allomorphy (that is, allomorphy that is phonologically unpredictable) on the stem. In contrast, CASE suffixes do trigger such

stem allomorphy in some contexts, such as the one in (76), and on personal pronouns.¹² Thus, the pattern that emerges is that compared to the POSS suffix, the CASE suffix seems to have a closer relationship with the stem because it can trigger stem allomorphy in some contexts and always participate in vowel harmony. In other words, CASE morphemes show the properties of what is traditionally classified as affixes, whereas POSS morphemes behave more like clitics.¹³

As previously mentioned, there are diachronic reasons to regard POSS as being recently grammaticalized from post-posed pronominal particles or enclitics. This might provide some intuition for us as to why POSS appears to be morphologically and phonologically less associated with the stem compared to CASE, which has been affixal since very early stages. However, it does not seem to be the case that such diachronic development simply imposes pressure on the linear structure by forcing POSS to linearly attach outside of CASE. As demonstrated in Section 4.3, the analysis that is solely based on linear operations like Local Dislocation makes incorrect predictions about the suspended affixation data. Therefore, there should be other ways to encode the different morphophonological properties between CASE and POSS.

In the next section, I will argue that the morphophonological differences between CASE and POSS are derived from a rebracketing process (i.e., some sort of string-vacuous Local Dislocation) that applies to the structure after linearization. Specifically, K undergoes string-vacuous rebracketing which affixes it onto its host. In contrast, Poss does not undergo this process. It should be emphasized that the discussion so far has shown that Local Dislocation cannot be the *sole* factor that is causing the linear morpheme order mismatches. However it is reasonable to expect that after Lowering, some sort of linear morphological operations applies and further manipulates the structure. The order of the relevant postsyntactic operations is represented in (78). Due to this order, Lowering feeds rebracketing whenever the relevant context is met, and if Lowering fails to apply, rebracketing will be bled as well.

- (78) Order of postsyntactic operations
 Lowering → Linearization → Local Dislocation, rebracketing...

5.2 Linear morphological operations

This component of the analysis utilizes some representations and formalism proposed in Embick & Noyer (2001) and Embick (2007b; 2015). In particular, it distinguishes the following:

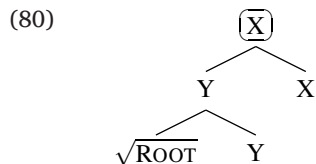
- (79) Definitions (based on Embick 2015)
- a. M-Word: (Potentially complex) head not dominated by a further head-projection.
 - b. Subword: A terminal node within an M-Word (either a functional morpheme, or a Root).

Based on these definitions, the complex head (\overline{X}) in (80) is an M-Word, while $\sqrt{\text{ROOT}}$, the terminal nodes Y and X are subwords. Complex head (i.e., M-Words) of this sort can be created mainly via two ways, head movement (assumed here to be part of syntax), and post-syntactic operations which affixes morphemes to each other at PF. I suggest that CASE morpheme, depending on the given structural condition, is affixed onto its host via either head movement or postsyntactic affixation. Thus, CASE always gets integrated with its M-Word host. However, POSS morpheme does not undergo such process. Therefore, POSS is not part of the same M-Word as its host, and simply leans onto the host and be pronounced together with it.

¹² Using the first person singular pronoun as an example, the nominative form of it is *bi*. The stem *nam-* is used when first person singular pronoun is marked with accusative, dative, instrumental, comitative, and some other oblique cases. The stem *nam-* to which the cases are attached is a bound morpheme that cannot stand alone.

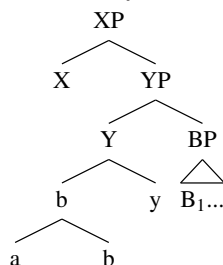
NOM	ACC	DAT	INST	
1SG	<i>bi</i>	<i>nam-ii</i>	<i>nam-d</i>	<i>nam-aar.</i>

¹³ While previous research suggests that in Khalkha Mongolian, the postnominal possessive particles are best treated as clitics, based on the fact that those particles do not participate in vowel harmony (Janhunen 2006), the prosodic status of the Dagur pronominal agreement marker has not yet been thoroughly investigated in the literature.



Before moving on to the analysis, some additional assumptions need to be laid out. It is assumed in Embick (2010) and related work that syntactic structures contain only hierarchical information, and an independent linearization procedure is responsible for producing linear representations from the hierarchical structure. As briefly mentioned in previous sections, the binary $*$ -operator indicates linear precedence and adjacency. Therefore, the statement $a * b$ could be read as ‘ a is left-adjacent to b ’. The \frown -operator is another binary operator that represents concatenation of M-Words, indicating immediate precedence. For example, the statement $a \frown b$ could be read as ‘ a immediately precedes b ’. The \oplus -operator represents the concatenation of subwords, and finally, a general “chaining” process of concatenated elements is assumed, in order to produce the actual linear representation. An illustration of how different levels of constituents are linearized using these operators is given in (81)–(83).

(81) Structure: syntax



(82) Linearization: Larger

- a. [X [Y BP ...
- b. (X* (Y*BP ...
- c. (X \frown Y), (Y \frown B₁)...

(83) Linearization: Smaller

- a. [[a b]y]
- b. ((a*b)*y)
- c. (a \oplus b), (b \oplus y) (Embick 2007b)

In addition to the mechanism of linearization, I further assume that a relevant rule applies wherever its structural description is met.

(84) Rules Apply (Bobaljik 2017)

A rule applies wherever its structural description is met.

We are now ready to discuss possible ways to encode the morphophonological differences between CASE and POSS in the Dagur nominal domain. To give an overview, I take M-Word to delineate the locality domain for the type of allomorphy observed in (76)–(77). CASE morpheme, depending on the given structural condition, is affixed onto its host via either head movement or postsyntactic affixation. Thus, CASE always gets integrated with its M-Word host. However, the POSS morpheme does not undergo either process, and is therefore not part of the same M-Word as its host, and simply leans onto the host and be pronounced together with it. Under this analysis, the complex M-Word containing the stem and the CASE suffix is the domain of allomorphy, which is also relevant to the domain of vowel harmony.

(85) $\underbrace{[{}_{Mwd} \text{ stem} - \text{CASE}]}_{\text{domain of allomorphy, vowel harmony}} - \text{POSS}$

M-Word has been suggested to be special for both morphological interactions and phonological processes. With respect to morphological interaction, Bobaljik (2012) suggests that for one morpheme to condition allomorphy for another morpheme, it is necessary for the two to be in the same morphological “word” (i.e., complex X^0). Meanwhile, Embick (2010) argues that there are further locality domains delineated by cyclic heads within an M-Word, which may further affect word-internal allomorphy. If POSS is treated as a non-cyclic head, then CASE and POSS should be present in the same cycle, and their different behavior in terms of allomorphy might not be straightforwardly reflected in this regard. However, another way to encode this is that the CASE suffix is treated as within the same M-Word as its stem, excluding POSS. In this way the difference between CASE and POSS becomes structurally transparent. In addition, since CASE participates in vowel harmony while POSS does not, the M-Word domain in (85) seems to be relevant for vowel harmony as well. This connection could be established by relating the M-Word to the phonological word, which in Dagur nominals corresponds to the domain of vowel harmony. Embick raises the generalization that complex heads seem to behave like phonological words or show close phonological connections. This idea is further developed in Shwayder (2015), who argues that non-minimal M-Words (i.e., M-Words that are complex heads instead of terminals) can be related to phonological words in systematic ways. If we take the M-word in (85) to be a phonological word, it would not be surprising that this word delineates the domain for vowel harmony.¹⁴

What is important for the current discussion is that the morphophonological closeness between CASE and its stem suggests some sort of locality domain at play. In particular, CASE seems to belong to a locality domain in which it can condition the stem allomorphy, which also happens to be the domain for vowel harmony. I take these facts as an indication that the relevant locality domain in these contexts is the M-Word. Thus, for example, I will take (86a) and (86b) as M-Words.

- (86) a. $[\text{Mwd } \check{\text{c}}\text{aas } \text{-aar}]$
 paper -INST
- b. $[\text{Mwd } \text{joo}\text{n } \text{-d}]$
 what -DAT

I propose that CASE belongs to the same M-Word as the stem, however, POSS does not belong to that M-Word, but instead loosely attaches, or leans onto the M-Word and be pronounced together with it. This distinction can be derived directly in syntax. Due to the head-final and agglutinative nature of Dagur, it is difficult to determine from the surface form whether the sequence of morphemes collected on the right side are (morpho)syntactically combined into complex heads (either by head movement or postsyntactic operations) or are simply linearly adjacent.¹⁵ According to Shwayder (2015), in a head-final language (assuming right-headedness), the two structures (87) and (88) could have identical surface orders, but distinct morphological structures. The structure in (88) consists of one single M-Word, with the terminals X, Y, Z all being subwords. In contrast, in (87) each head is its own morphological unit.

- (87)
-
- ```

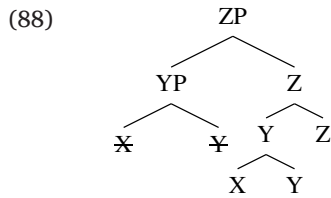
graph TD
 ZP --- YP
 ZP --- Z
 YP --- X
 YP --- Y

```
- a. Linear order: X Y Z
- b. Morphological structure:  $X \sim Y \sim Z$

<sup>14</sup> It should be noted that cross-linguistically there are many cases where vowel harmony domains do not correspond of phonological words (they can be bigger or smaller than a word). The vowel harmony domain is related to the phonological word in the case under discussion, but it should not be taken as a claim that phonological word must always correspond to vowel harmony domain.

Additionally, there are other ways to further encode the harmonizing properties of CASE and POSS. For example, the CASE morphemes can be lexically specified to undergo vowel harmony, but POSS morphemes do not have such specification. I will leave this area of investigation for future research.

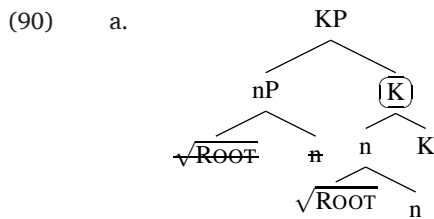
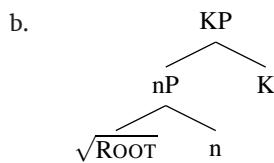
<sup>15</sup> This issue has been discussed in e.g., Harley (2011), who suggests that in head-final languages, all the ingredients in the extended (verbal) projection, even without head-movement, are straightforwardly adjacent to each other and correctly ordered. Harley (2008) suggests that the head-movement is not necessary to get all the morphemes in the correct order; the terminal morphemes could remain in situ but simply merge under adjacency. The challenge to determine whether head movement has taken place or not in head-final languages has also been discussed in Shwayder (2015) for Turkish.



- a. Linear order: X Y Z
- b. Morphological structure:  $[_{Mwd} X\oplus Y\oplus Z]$

I suggest that in the derivation of the surface form of a Dagur nominal phrase, both (87) and complex head creation (either through head movement (88) or postsyntactically) take place. Within a single noun phrase, head movement, which creates M-Words, may apply all the way through K, if there is no Poss in the way. Let us first consider a single KP as in (89b). Head movement can create the complex head in (90a), which is ultimately linearized as a single M-Word  $[_{Mwd} \text{Root}\oplus n\oplus K]$  as in (90b).

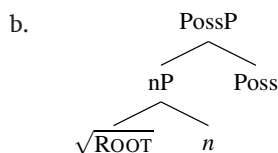
- (89) a.  $[_{Mwd} \text{čaas -aar}]$   
 paper -INST  
 ‘with paper’



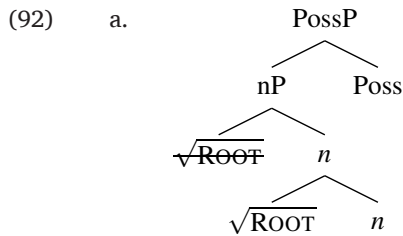
- b. Linearization
  - i.  $[[\text{Root } n] K]$
  - ii.  $((\text{Root} * n) * K)$
  - iii.  $(\text{Root}\oplus n), (n\oplus K),$   
 or  $[_{Mwd} \text{Root}\oplus n\oplus K]$

Next, consider a bare PossP (91b). I suggest that the POSS element appears to display a certain degree of morphophonological dissociation from its host, because it does not belong to the same M-Word as the host. Suppose head movement does not take place through Poss head in syntax, and simply stops at the head below it (here *n*). At this point, essentially Poss is simultaneously an M-Word and a Subword. It is an M-Word because it is a head not dominated by any further head-projection. It is a Subword because it is a terminal element, i.e., a morpheme. By these criteria, Poss should be linearized as an M-Word which is also subjected to Vocabulary Insertion. After linearization, the Poss is attached outside of the M-Word containing the Root and *n*. Vocabulary insertion directly takes place on (92b), and while POSS is ultimately pronounced together with the host, it does not belong to that host M-Word.

- (91) a.  $[\text{ekee -min}']$   
 sister -1SG.POSS  
 ‘my sister’



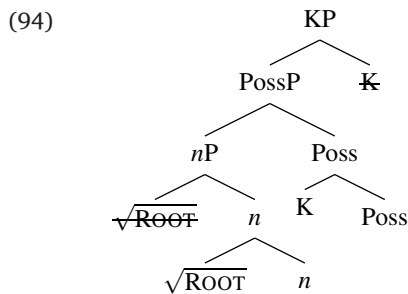
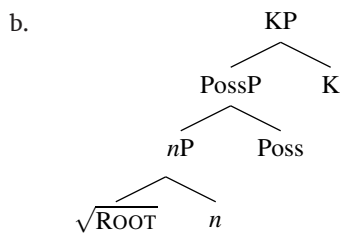




b. Linearization:  $[_{mwd} \text{Root} \oplus n] \frown \text{Poss}$

Finally, consider the case where both K and Poss are present (93a). Since head movement does not take place through Poss, it stops at *n* in (94). Here the condition for K-to-Poss Lowering is met, thus K lowers onto Poss postsyntactically, forming one complex head.

(93) a. [tery -eer -maan]  
 [vehicle -INST-1PL.POSS]  
 ‘with our vehicle’



The linearization process of (94) creates the statement in (95a). At this point, I suggest that (95a) undergoes string-vacuous rebracketing, that is, free rebracketing that does not have any impact on the linear order, giving rise to (95b).

(95) a. Linearization: [ Root \* n ] \* [ K \* Poss ]  
 b. String-vacuous rebracketing: [ Root \* n \* K ] \* Poss

There are certain constraints on the structural condition under which two adjacent elements can be exchanged via linear operations such as Local Dislocation. For example, if *X* is an element peripheral in some constituent *C*, *X* will not be able to invert with an element *Y* that is outside of the constituent *C*. However, rebracketing or leaning such as (96b), without disrupting the linear order, is possible (Marantz 1988; Embick & Noyer 2001).

(96) a. [... Y] \* [<sub>C</sub> X \* Z]  
 b. [... Y + X] \* [<sub>C</sub> Z] possible leaning

Since the linear order in (95) is not altered in any way, *K*, as the left-peripheral element in the constituent [*K*\**Poss*], may be affixed onto the constituent [*Root*\**n*] that is left-adjacent to it, via string-vacuous rebracketing. The result is that *K* joins the [*Root*\**n*] constituent, while linearly still follows the originally right-peripheral element *n*. (95b) can be rewritten using the concatenation statement as follows:

(97)  $[_{mwd} \text{Root} \oplus n \oplus K] \frown \text{Poss}$

In this way, K is sufficiently close to the stem and can trigger allomorphy. The facts on vowel harmony also naturally follows. Note that the context for string-vacuous rebracketing is created by Lowering. Suppose Lowering does not apply to the hierarchical structure, the scenario would be that POSS intervenes between CASE and its host as in (98). Since free rebracketing may not disrupt the linear order, it would not be able to derive the correct structure in (97). This directly falls out from the general order of postsyntactic operations outlined in (78). Lowering, which applies to hierarchical structure, takes place before linearization. Thus, it will apply to K and Poss whenever the structural context is met, before any other linear morphological rules apply. In other words, due to the general order of postsyntactic operations, Lowering feeds linear rebracketing.

(98) [[ Root \* n ] \* Poss ] \* K ]

To sum up the discussion so far, the morphological differences between CASE and POSS morphemes are encoded in their linear relations. Specifically, through further manipulation of the structure after linearization, CASE ends up being within the same M-Word as the host, whereas POSS does not belong to that domain.

## 6 Conclusions

The current analysis provides a case study of the interactions of postsyntactic operations that relates syntactic derivation to surface morphological patterns. The discussion has centered on the Dagur nominal domain, in particular two morphemes CASE and POSS, which exhibit unexpected surface order. The first empirical task of this paper was to determine the morphological and syntactic status of the two morphemes in question. Through investigating the syntactic traits of Dagur nominal phrases, I conclude that Dagur does not project DP. Instead, the noun phrase involves an NP with some functional projections above it. The second empirical task of this paper was to investigate the morphosyntactic traits of the NPs with the exceptional CASE-POSS suffix order, through the lens of suspended affixation. It turns out that coordinated nominals with these suffixes display surprising patterns under suspended affixation. In particular, POSS cannot be suspended to the exclusion of CASE, even though such surface form conforms to the widely observed right edge condition in languages with suspended affixation.

Utilizing the fact that Dagur overt coordinators are sensitive to whether the conjuncts are arguments or not, I have shown that Dagur suspended affixation is most adequately analyzed as a base-generated structure, instead of morpheme ellipsis. Given this, I have proposed that the exceptional morpheme suspension patterns are due to K lowering to Poss postsyntactically. I have also examined further data on the morphophonological distinctions between the CASE morpheme and the POSS morpheme. These surface distinctions are derived by the combination of complex head creation and string-vacuous rebracketing, which places K inside the host M-Word, while excludes POSS from that M-Word. The fact that the postsyntactic operations discussed in this paper are sensitive to different types of structure directly falls out from the general architecture of postsyntactic operations. Specifically, Lowering applies in terms of hierarchical structure. Thus, it must precede linearization. The proposed rebracketing operation only applies to linearized structure, not to syntactic hierarchy. Thus, it is ordered after linearization.

## Abbreviations

Abbreviations in glosses are as follows: 1/2/3 = first/second/third person, ACC = accusative, COMIT = comitative, CONJ1 = the coordinator *boloor*, CONJ2 = the coordinator *beitleen*, DAT = dative, EXCL = exclusive, GEN = genitive, INST = instrumental, INESS = inessive, NOM = nominative, PL = plural, POSS = possessive, PST = past tense, Q = question particle, SG = singular. Dagur does not have its own writing system. Historically, many Dagur documents have been transcribed using the Manchu or Mongolian script. Currently, the Dagur community often uses a Pinyin-based transcription system (*Jiyin Fuhao*) for everyday literary use. In this paper, examples are transcribed based on such practical orthography with revisions. Symbols have their usual IPA values, except that: č = [tʃ]; š = [ʃ]; e = [ə] or [e]; j̥ = [tʃ̥]; ng = [ŋ]; two consecutive identical vowels = long vowel, e.g., ii = [i:]; C<sup>l</sup> = palatalized consonant; C<sup>v</sup> = labialized consonant.

I am grateful to the Dagur speakers I have had the opportunity to work with. The Dagur data was collected during the summers of 2018 and 2019, in Morin Dawa (Hulun Buir), Hailar (Hulun Buir), and Hohhot of Inner Mongolia, China, with 14 native speaker consultants in total. The consultants' profiles are as follows.

- Morin Dawa Dagur Autonomous Banner, central banner (Muoqi): 4 male speakers, average age 70–80; 1 male speaker, age 50–60; 1 female speaker, age 45–50
- Arla, Morin Dawa: 4 female speakers, average age 50
- Tengke, Morin Dawa: 2 male speakers, average age 70–80
- Hohhot: 1 female speaker, age 45–50
- Hailar: 1 male speaker, age 80

Due to the endangered status of the Dagur language, all consultants are bilingual in or have good command of Mandarin Chinese (all educated in Mandarin at school). The female speaker from Hohhot and the male speaker from Hailar are multilingual in Dagur (native), Mongolian (learned from community during childhood), Mandarin Chinese (learned at school). Due to practical concerns such as geographical locations, transportation, speaker's age, schedule, and willingness to cooperate, the author did not have consistent collaboration with all 14 speakers. Nevertheless, each judgment has been checked with at least 2 speakers within this 14-people group. The initial stages of this work benefited from the support of the Mario Einaudi International Research Travel Grants at Cornell University.

For valuable feedback on this work, I thank Miloje Despić, John Whitman, Sarah Murray, Draga Zec, two anonymous reviewers, and audiences at the 50th Annual Meeting of the North East Linguistic Society, the 15th Workshop on Altaic Formal Linguistics, the 2019 LSA Linguistic Institute, and Cornell University. I would especially like to thank Miloje Despić for helpful discussions at various stages of this work. All remaining errors are mine.

## Competing interests

The author has no competing interests to declare.

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## References

- Baker, Mark. 1985. The mirror principle and morphosyntactic explanation. *Linguistic Inquiry* 16(3). 371–415.
- Bittner, Maria & Ken Hale. 1996. The structural determination of case and agreement. *Linguistic Inquiry* 27. 1–68.
- Bobaljik, Jonathan David. 2012. *Universals in Comparative Morphology: Suppletion, Superlatives, and the Structure of Words*. Cambridge, MA: MIT Press. DOI: <https://doi.org/10.7551/mitpress/9069.001.0001>
- Bobaljik, Jonathan David. 2017. Distributed morphology. In *Oxford Research Encyclopedia of Linguistics*, Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acrefore/9780199384655.013.131>
- Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59(1). 1–45. DOI: <https://doi.org/10.1111/j.1467-9582.2005.00118.x>
- Bošković, Željko. 2008. What will you have, DP or NP? In *Proceedings of the Northeast Linguistic Society* 37. 101–114.
- Bošković, Željko. 2009. More on the no-DP analysis of article-less languages. *Studia Linguistica* 63(2). 187–203. DOI: <https://doi.org/10.1111/j.1467-9582.2009.01158.x>
- Bošković, Željko. 2010a. On NPs and clauses. Ms. University of Connecticut.
- Bošković, Željko. 2010b. Phases beyond clauses. Ms. University of Connecticut.
- Bowers, John. 1993. The syntax of predication. *Linguistic Inquiry* 24(4). 591–656.
- Bruening, Benjamin. 2009. Selectional asymmetries between CP and DP suggest that the DP hypothesis is wrong. *University of Pennsylvania Working Papers in Linguistics* 15(1). 27–35.

- Bruening, Benjamin. 2020. The head of the nominal is N, not D: N-to-D movement, hybrid agreement, and conventionalized expressions. *Glossa: A Journal of General Linguistics* 5(1). 15. DOI: <https://doi.org/10.5334/gjgl.1031>
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Roger Martin, David Michaels & Juan Uriagereka (eds.), *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, 89–156. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In Michael Kenstowicz (ed.), *Ken Hale: A Life in Language*, 1–52. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2020. The UCLA lectures.
- Despić, Miloje. 2011. *Syntax in the Absence of Determiner Phrase*. University of Connecticut dissertation.
- Despić, Miloje. 2017. Suspended morphology in Serbian: clitics vs. affixes. *Glossa: A Journal of General Linguistics* 2(1). 1–43. DOI: <https://doi.org/10.5334/gjgl.130>
- Embick, David. 2007a. Blocking effects and analytic/synthetic alternations. *Natural Language & Linguistic Theory* 25(1). 1–37. DOI: <https://doi.org/10.1007/s11049-006-9002-9>
- Embick, David. 2007b. Linearization and local dislocation: Derivational mechanics and interactions. *Linguistic Analysis* 33(3-4). 303–336.
- Embick, David. 2010. *Localism Versus Globalism in Morphology and Phonology*. Cambridge, MA: MIT Press. DOI: <https://doi.org/10.7551/mitpress/9780262014229.001.0001>
- Embick, David. 2015. *The Morpheme: A Theoretical Introduction*. Berlin: De Gruyter Mouton. DOI: <https://doi.org/10.1515/9781501502569>
- Embick, David & Alec Marantz. 2008. Architecture and blocking. *Linguistic Inquiry* 39(1). 1–53. DOI: <https://doi.org/10.1162/ling.2008.39.1.1>
- Embick, David & Rolf Noyer. 2001. Movement operations after syntax. *Linguistic Inquiry* 32(4). 555–595. DOI: <https://doi.org/10.1162/002438901753373005>
- Embick, David & Rolf Noyer. 2007. Distributed morphology and the syntax–morphology interface. In Gillian Ramchand & Charles Reiss (eds.), *The Oxford Handbook of Linguistic Interfaces*, vol. 289, 324. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/oxfordhb/9780199247455.013.0010>
- Engkebatu. 1985. *Dawo'eryu Huayu Cailiao [Dagur Language Material]*. Hohhot: Inner Mongolia People's Publishing House.
- Engkebatu. 1988. *Dawo'eryu he Mengguyu [Dagur and Mongolian]*. Hohhot: Inner Mongolia People's Publishing House.
- Erschler, David. 2018. Suspended affixation as morpheme ellipsis: Evidence from Ossetic alternative questions. *Glossa: A Journal of General Linguistics* 3(1). 12. DOI: <https://doi.org/10.5334/gjgl.501>
- Erschler, David. 2019. A new argument for existence of the DP in languages without articles. *Journal of Linguistics* 55(4). 879–887. DOI: <https://doi.org/10.1017/S0022226719000288>
- Giusti, Giuliana & Rossella Iovino. 2016. Latin as a split-DP language. *Studia Linguistica* 70(3). 221–249. DOI: <https://doi.org/10.1111/stul.12045>
- Good, Jeff & Alan Yu. 2005. Morphosyntax of two Turkish subject pronominal paradigms. In Lorie Heggie & Francisco Ordóñez (eds.), *Clitic and Affix Combinations: Theoretical Perspectives*, 315–341. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/la.74.13goo>
- Guseva, Elina & Philipp Weisser. 2018. Postsyntactic reordering in the Mari nominal domain. *Natural Language & Linguistic Theory* 36(4). 1089–1127. DOI: <https://doi.org/10.1007/s11049-018-9403-6>
- Harley, Heidi. 2008. On the causative construction. In Shigeru Miyagawa & Mamoru Saito (eds.), *The Oxford Handbook of Japanese Linguistics*, 20–53. Oxford: Oxford University Press.
- Harley, Heidi. 2011. Affixation and the mirror principle. In Raffaella Folli & Christiane Ulbrich (eds.), *Interfaces in Linguistics*, 166–186. Oxford: Oxford University Press.
- Hofherr, Patricia Cabredo. 2010. Adjectives – an introduction. In Patricia Cabredo Hofherr & Ora Matushansky (eds.), *Adjectives: Formal Analyses in Syntax and Semantics*, Amsterdam: John Benjamins.
- Janhunen, Juha. 2003. Proto-Mongolic. In Juha Janhunen (ed.), *The Mongolic Languages*, London: Routledge.
- Janhunen, Juha. 2006. *The Mongolic Languages*. London: Routledge. DOI: <https://doi.org/10.4324/9780203987919>
- Kabak, Bari.s. 2007. Turkish suspended affixation. *Linguistics* 45. 311–347. DOI: <https://doi.org/10.1515/LING.2007.010>
- Ko, Seongyeon. 2018. *Tongue Root Harmony and Vowel Contrast in Northeast Asian Languages*. Wiesbaden: Harrassowitz. DOI: <https://doi.org/10.2307/j.ctvckq52c>
- Kornfilt, Jaklin. 1996. On copular clitics in Turkish. *ZAS Papers in Linguistics* 96–114.
- Kornfilt, Jaklin. 2012. Revisiting “suspended affixation” and other coordinate mysteries. In Laura Brugé, Anna Cardinaletti, Giuliana Giusti, Nicola Munaro & Cecilia Poletto (eds.), *Functional Heads: The Cartography of Syntactic Structures*, Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780199746736.003.0014>
- Lamontagne, Greg & Lisa Travis. 1987. The syntax of adjacency. In *The Proceedings of the Sixth West Coast Conference on Formal Linguistics*. 173–186.

- Levin, Theodore Frank. 2015. *Licensing without Case*. Massachusetts Institute of Technology dissertation.
- Lewis, Geoffrey. 1967. *Turkish Grammar*. Oxford: Clarendon.
- Lyutikova, Ekaterina & Asya Pereltsvaig. 2015. The Tatar DP. *The Canadian Journal of Linguistics* 60(3). 289–325. DOI: <https://doi.org/10.1017/S0008413100026232>
- Manlove, Kathleen. 2015. Evidence for a DP-projection in West Greenlandic Inuit. *The Canadian Journal of Linguistics* 60(3). 327–360. DOI: <https://doi.org/10.1353/cjl.2015.0024>
- Marantz, Alec. 1988. Clitics, morphological merger, and the mapping to phonological structure. In Michael Hammond & Michael Noonan (eds.), *Theoretical Morphology*, 253–270. San Diego: Academic Press.
- McFadden, Thomas. 2004. *The Position of Morphological Case in the Derivation*. University of Pennsylvania dissertation.
- Norris, Mark. 2018. Nominal structure in a language without articles: the case of Estonian. *Glossa: A Journal of General Linguistics* 3(1). 41. DOI: <https://doi.org/10.5334/gjgl.384>
- Preminger, Omer. 2020. Functional structure in the noun phrase: revisiting Hebrew nominals. *Glossa: A Journal of General Linguistics* 5(1). 68. DOI: <https://doi.org/10.5334/gjgl.1244>
- Salzmann, Martin. 2020. The NP vs. DP debate. Why previous arguments are inconclusive and what a good argument could look like. Evidence from agreement with hybrid nouns. *Glossa: A Journal of General Linguistics* 5(1). 83. DOI: <https://doi.org/10.5334/gjgl.1123>
- Shwayder, Kobey. 2015. *Words and Subwords: Phonology in a Piece-Based Syntactic Morphology*. University of Pennsylvania dissertation.
- Siegel, Dorothy Carla. 1974. *Topics in English Morphology*. Massachusetts Institute of Technology dissertation.
- Sproat, Richard William. 1985. *On Deriving the Lexicon*. Massachusetts Institute of Technology dissertation.
- Stanković, Branimir. 2017. DP and mandatory determiners in article-less Serbo-Croatian. *Acta Linguistica Academica* 64(2). 257–279. DOI: <https://doi.org/10.1556/2062.2017.64.2.5>
- Syed, Saurov & Andrew Simpson. 2017. On the DP/NP status of nominal projections in Bangla: consequences for the theory of phases. *Glossa: A Journal of General Linguistics* 2(1). 68. DOI: <https://doi.org/10.5334/gjgl.186>
- Tsumagari, Toshiro. 2003. Dagur. In Juha Janhunen (ed.), *The Mongolic Languages*, London: Routledge.
- Valois, Daniel. 2008. Adjectives: Order within DP and attributive APs. In Martin Everaert & Henk C. Van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, Wiley.
- Yoon, James. 2017. Lexical integrity and suspended affixation in two types of denominal predicates in Korean. *Glossa: A Journal of General Linguistics* 2(1). 1–45. DOI: <https://doi.org/10.5334/gjgl.248>
- Zhong, Suchun. 1982. *Dawo'eryu Jian Zhi [Brief History of the Dagur Language]*. Beijing: Publishing House of Minority Nationalities.
- Zlatic, Larisa. 1997. *The Structure of the Serbian Noun Phrase*. University of Texas at Austin dissertation.

Gong  
*Glossa: a journal of  
 general linguistics*  
 DOI: 10.5334/gjgl.1397

TO CITE THIS ARTICLE:

Gong, Zhiyu Mia. 2021. Postsyntactic Lowering and linear relations in Dagur noun phrases. *Glossa: a journal of general linguistics* 6(1): 42. 1–29. DOI: <https://doi.org/10.5334/gjgl.1397>

Submitted: 27 July 2020

Accepted: 22 February 2021

Published: 08 April 2021

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