Long-distance scrambling in Balkar and the nature of edges[*]

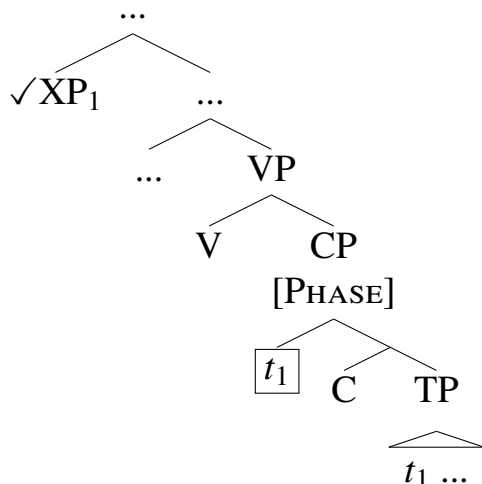Tanya Bondarenko & Colin Davis / MIT / {tbond, colind}@mit.edu

WCCFL 38 / University of British Columbia

1 Introduction

- In this project, we use fieldwork data about cross-clausal scrambling in Balkar (Turkic) to argue for several concepts about the constraints on movement.

- A great deal of research has argued that certain constituents, in current terms *phases* (Chomsky 2000, 2001, 2008, a.o.), are unique in only allowing constituents in their edge to be accessible by later syntactic operations.

- Generally, CP, vP, and sometimes DP are taken to be phases. If so, we expect that movement from these constituents will generally have to pass through their edge.

  ▷ The trees in (1) below illustrate this expectation for movement from CP, since movement from embedded clauses is our focus here:

  (1)   *General expectation: Must exit a phase via its edge*

     a. *Legal exit via edge*   b. *Illegal exit from below edge*
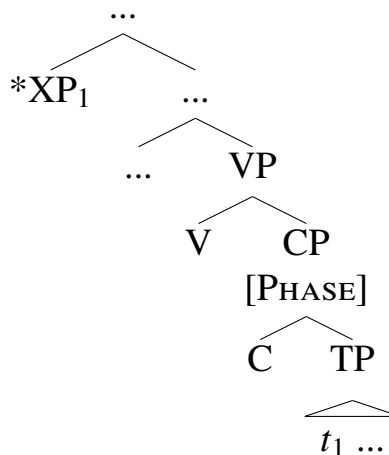
- We argue that the way in which long-distance scrambling interacts with the different embedded clause types in Balkar reveals insight into what happens at phase edges.

- Balkar has three types of embedded (nominalized) clause, which are differentiated based on the case of their subject—nominative (NOM), accusative (ACC), or genitive (GEN).

    (2) *Three possibilities for embedded subjects: NOM, GEN or ACC*

    Ustaz   [Clause [fatima-nɨ   sabij-i-∅   /sabij-i-**ni**   /sabij-i-**n**]   alma-nɨ
    teacher.NOM   Fatima-GEN child-3-**NOM** /child-3-**GEN** /child-3-**ACC** apple-ACC
    aša-ʁan-ɨ-n   ] ešit-ti.
    eat-NFUT-3-ACC   hear-PST

    'The teacher heard [that Fatima's child ate her apple].'

    ▷ In (2) and throughout this presentation we used possessed subjects in embedded clauses, since in the absence of possessive marking accusative and genitive are syncretic.

- Based on differences in how each variety of subject interacts with cross-clausal scrambling, we argue for the following general concepts about phases and their edges:

    ▷ #1: That CP is a phase which allows multiple specifiers provided that *tucking-in* applies (Richards 1997, 1999).

    ▷ #2: That the highest phrase in a multiple specifier structure is privileged, such that a higher specifier must move before a lower one can be accessed (Bošković 2016, a.o.).

    ▷ #3: That DP is a phase which (at least in this context) does not allow A′-movement through its edge (Bosque & Gallego 2014, Reeve 2018, van Urk 2019).

- We will show that these general ideas make sense of a variety of facts about cross-clausal scrambling in Balkar, and facilitate an understanding of several related patterns.

- First we consider scrambling of objects in detail, before turning to the properties of subject movement later on.

1.1   Contents of this presentation

- §2 - The main scrambling facts and the puzzle they present.

- §3 - Background on Balkar embedded clauses.

- §4 - Analysis of the constraints on object scrambling.

- §5 - Locality and subject scrambling.

- §6 - Conclusion, followed by the appendices.

2 Subject case and constraints on scrambling

- Each variety of embedded subject interacts with cross-clausal scrambling differently.

- First, note that scrambling to position immediately preceding the embedded subject is possible only if that subject is nominative:

  (3) *No clause-internal scrambling over ACC/GEN subject, ok over NOM subject*

  Ustaz   [_{CLAUSE} [tauuš et-dir-ip]   **alma-n**ɨ_k [bala-sɨ   /*bala-sɨ-**nɨ**
  teacher.NOM   noise make-CAUS-CONV **apple-ACC** child-3.**NOM** /child-3-**GEN**
  /*bala-sɨ-**n**] t_k aša-ʁan-ɨ]-n   ešit-ti
  /child-3-**ACC**   eat-NFUT-3-ACC hear-PST

  'The teacher heard that her child ate the apple loudly (lit. 'while making noise').'

  ▷ In (3), an adverb is used as a signpost for the embedded clause's edge, clarifying that we are attempting clause-internal scrambling here.[1]

- If scrambling to an edge position above only nominative subjects is possible, then given the hypothesis that embedded clauses are phases, it is unsurprising that only with a nominative subject is scrambling into the matrix clause permitted:

  (4) *No long-distance scrambling over ACC/GEN subject, ok over NOM subject*

  Alma-nɨ_k ustaz   [_{CLAUSE} t_k [fatima-nɨ   sabij-i-∅/*-ni/*-n] t_k
  apple-ACC teacher.NOM   Fatima-GEN child-3-<u>NOM/*GEN/*ACC</u>
  aša-ʁan-ɨ-n   ] ešit-ti.
  eat-NFUT-3-ACC   hear-PST

  'The teacher heard [that Fatima's child ate her apple].'

  ▷ Thus accusative/genitive subjects uniquely 'plug' the edge of the embedded clause, preventing scrambling from reaching the matrix clause by passing through that position.

- Another trait of accusative and genitive subjects is that they themselves can scramble into the matrix clause:

  (5) *Long-distance scrambling of ACC/GEN subject*

  [**Fatima-nɨ bala-sɨ-nɨ/n**]_k   ustaz   [_{CLAUSE} t_k alma-nɨ   aša-ʁan-ɨ-n   ]
  Fatima-GEN child-3-**GEN/ACC** teacher.NOM   apple-ACC eat-NFUT-3-ACC
  ešt-gen-di.
  hear-PART-3

---

[1]See appendix A for evidence that this adverb can only occur within the embedded clause.

'The teacher heard that Fatima's child ate an apple.'

! **Importantly**, when the accusative subject moves from the embedded clause, that clause's object can do so as well (6a). The final order S < O is necessary in this situation (6a vs. 6b):

(6) *Accusative subject scrambling feeds long object scrambling*

a. [**Fatima-nɨ sabij-i-n**]$_k$ tünene **alma-nɨ**$_j$ ustaz [$_{\text{CLAUSE}}$ t_k t_j
Fatima-GEN child-3-**ACC** yesterday apple-ACC teacher.NOM
aša-ʁan-ɨn] ešit-ti.
eat-NFUT-3-ACC hear-PST

'The teacher heard that Fatima's child ate the apple yesterday.'

b. *****Alma-nɨ**$_j$ tünene [**fatima-nɨ sabij-i-n**]$_k$ ustaz [$_{\text{CLAUSE}}$ t_k t_j
apple-ACC yesterday Fatima-GEN child-3-**ACC** teacher.NOM
aša-ʁan-ɨn] ešit-ti.
eat-NFUT-3-ACC hear-PST

'The teacher heard that Fatima's child ate the apple yesterday.'

- But in contrast, genitive subject movement does not feed object scrambling of any form:

(7) *Genitive subject scrambling does not feed object scrambling*

a. *****[**Fatima-nɨ sabij-i-nɨ**]$_k$ tünene **alma-nɨ**$_j$ ustaz [$_{\text{CLAUSE}}$ t_k t_j
Fatima-GEN child-3-**GEN** yesterday apple-ACC teacher.NOM
aša-ʁan-ɨn] ešit-ti.
eat-NFUT-3-ACC hear-PST

'The teacher heard that Fatima's child ate the apple yesterday.'

b. *****Alma-nɨ**$_j$ tünene [**fatima-nɨ sabij-i-nɨ**]$_k$ ustaz [$_{\text{CLAUSE}}$ t_k t_j
apple-ACC yesterday Fatima-GEN child-3-**GEN** teacher.NOM
aša-ʁan-ɨn] ešit-ti
eat-NFUT-3-ACC hear-PST

'The teacher heard that Fatima's child ate the apple yesterday.'

★ These are the patterns we focus on deriving in this presentation. In summary:

▷ Scrambling the embedded clause's object across a nominative embedded subject is licit.

▷ Accusative subjects block such object scrambling, unless they scramble as well.

▷ Genitive subject scrambling, though possible, never feeds object scrambling.

3 Background: Characteristics of Balkar embedded clauses

- In this section, we provide an understanding of the structure of each embedded clause type, which will serve as our foundation for an analysis of the patterns just described.

3.1 Embedded clause structure

- All the clauses we consider behave like nominals: they have agreement marking matching that seen in nominal phrases (specifically possessive constructions), appear in argument positions, and carry case morphology.

- But all also have some verbal properties. We hypothesize the following structures:

  (8) *Embedded clause contents (building from Bondarenko 2018)*

Case of the subject	Nominal structure	Verbal structure
NOM, ACC	NP	CP-TP-AspP-vP-VP
GEN	DP-NP	AspP-vP-VP

- All three clause types have at least enough verbal structure to host VP-level adverbs, as (9) below shows with a manner adverb:

  (9) *VP-level adverb in all clause types*

  Ustaz [[bala-sɨ /bala-sɨ-nɨ /bala-sɨ-n] **tauuš et-dir-ip**
  teacher.NOM child-3.NOM /child-3-GEN /child-3-ACC **noise make-CAUS-CONV**
  alma-nɨ aša-ʁan-ɨ-n] ešit-ti.
  apple-ACC eat-NFUT-3-ACC hear-PST

  'The teacher heard that her child ate the apple loudly.'

- All clause types also permit negation:

  (10) *Negation in all clause types*

  Ustaz [[fatima-nɨ sabij-i /sabij-i-ni /sabij-i-n] alma
  teacher.NOM fatima-GEN child-3.NOM /child-3-GEN /child-3-ACC apple
  aša-**ma**-ʁan-ɨ-n] kör-dö.
  eat-**NEG**-NFUT-3-ACC see-PST

  'The teacher saw that Fatima's child did not eat an apple.'

- All three also plausibly contain some degree of functional material relating to tense/aspect, since all can be built from either a non-future participle (*-ʁan* 'NFUT') or a future-oriented one (*-rɨq* 'FUT').

- Most examples shown so far use -ʁ*an*. Example (11) below illustrates -rɨq:

  (11) *Future marking -rɨq allowed in all clause types*

  Ol   [bala-sɨ   /bala-sɨ-nɨ /bala-sɨ-n] (tambla) alma-sɨ-n
  (s)he.NOM child-3.**NOM** /child-3-**GEN** /child-3-**ACC** (tomorrow) apple-3-ACC
  aša-<u>riʁ</u>-ɨ-n   ajt-a-dɨ.
  eat-FUT-3-ACC say-IPFV-3SG

  '(S)he is saying that (someone's) child will be eating his/her apple (tomorrow).'

  ▷ Unlike nominalizations with ACC and NOM subjects, nominalizations with GEN subjects cannot have temporal modification that is in contradiction with that of the matrix clause:

  (12) *Tense of GEN subject clause must match that of matrix clause*
  a. Kerim   tünene   [[fatima-nɨ bala-sɨ   /bala-sɨ-n] tambla
  Kerim.NOM yesterday Fatima-GEN child-3.**NOM** /child-3-**ACC** tomorrow
  alim-ni   kištig-i-n baʁar-lɨq-ɨ-n]   bil-<u>di</u>.
  Alim-GEN cat-3-ACC <u>feed-FUT</u>-3-ACC know-PST

  'Kerim found out yesterday that Fatima's child will feed Alim's cat tomorrow.'
  b. *Kerim   tünene   [[fatima-nɨ bala-sɨ-nɨ] tambla   alim-ni
  Kerim.NOM yesterday Fatima-GEN child-3-**GEN** tomorrow Alim-GEN
  kištig-i-n baʁar-lɨq-ɨ-n]   bil-<u>di</u>.
  cat-3-ACC <u>feed-FUT</u>-3-ACC know-PST

  'Kerim found out yesterday that Fatima's child will feed Alim's cat tomorrow.'

  ▷ We therefore hypothesize that embedded clauses with genitive subjects uniquely lack T (or perhaps have one that is in some sense 'defective' and thus semantically deficient).

- We also suggest that embedded clauses with genitive subjects may be in a sense 'more nominal' than the others, since they can more easily be used with elements like quantifiers and numerals (though this is not an absolute contrast):

  (13) *Quantifier*
  a. ?Tünene ustaz [[fatima-nɨ bala-sɨ   /bala-sɨ-n] alma-nɨ **xar**
  yesterday teacher Fatima-GEN child-3.NOM /child-3-ACC apple-ACC **EVERY**
  aša-ʁan-ɨ-n]   ešt-gen-di
  eat-NFUT-3-ACC hear-NFUT-3SG
  'The teacher heard every eating of the apple by Fatima's child yesterday.'
  b. Tünene   ustaz [[fatima-nɨ bala-sɨ-nɨ] alma-nɨ **xar**   aša-ʁan-ɨ-n]
  yesterday teacher Fatima-GEN child-3-GEN apple-ACC **EVERY** eat-NFUT-3-ACC
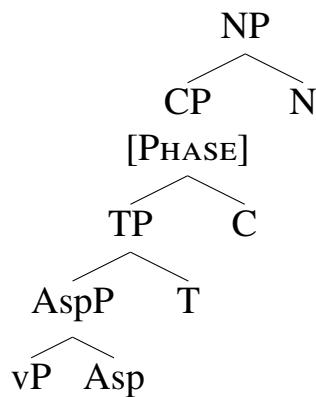 ešt-gen-di
  hear-NFUT-3SG
  'The teacher heard every eating of the apple by Fatima's child yesterday.'

(14) *Numeral*

    a. ?Tünene ustaz [[fatima-nɨ bala-sɨ   /bala-sɨ-n] alma-nɨ **eki**
       yesterday teacher Fatima-GEN child-3.NOM /child-3-ACC apple-ACC **TWO**
       aša-ʁan-i-n]   ešt-gen-di
       eat-NFUT-3-ACC hear-NFUT-3SG
       'The teacher heard two eatings of the apple by Fatima's child yesterday.'

    b. Tünene   ustaz [[fatima-nɨ bala-sɨ-nɨ] alma-nɨ **eki** aša-ʁan-i-n]
       yesterday teacher Fatima-GEN child-3-GEN apple-ACC **TWO** eat-NFUT-3-ACC
       ešt-gen-di
       hear-NFUT-3SG
       'The teacher heard two eatings of the apple by Fatima's child yesterday.'

- We hypothesize that genitive subject clauses are unique in containing the DP layer, while those with nominative and accusative subjects contain a more minimal amount of nominal structure, perhaps just NP.

- This thus leaves us with the following split between clause types, which will expand to a three-way distinction once we consider the properties of each subject type:

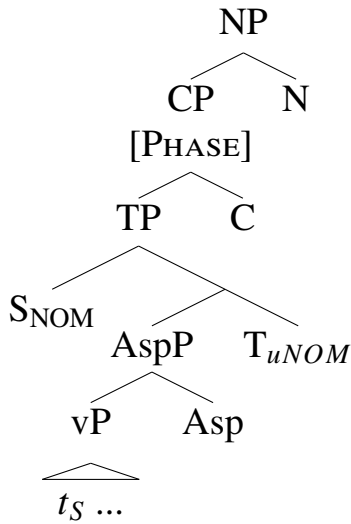(15)   a. *Clause with NOM/ACC subject*   b. *Clause with GEN subject*
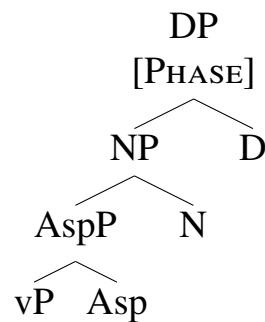
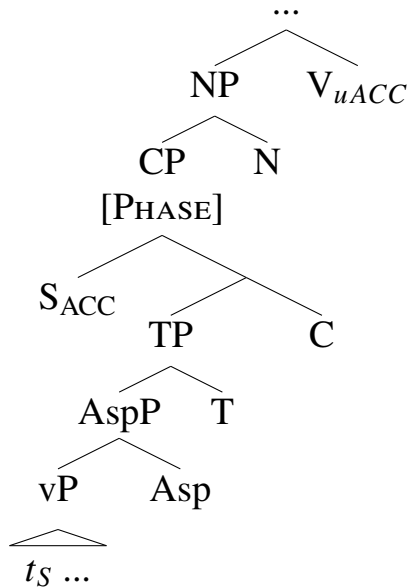## 3.2 Subject positions and case assignment

- We posit a distinct position for each type of subject, based on which their interaction with scrambling, and additional related facts, will be derived.

- First, we hypothesize that when the embedded clause's subject is nominative, the subject is assigned case by and thus moves to the specifier of TP:

(16)   *Nominalized clause with nominative subject in spec-TP*

```
                    NP
                  /    \
                CP      N
              [PHASE]
              /    \
            TP      C
          /    \
      S_NOM     \
            AspP    T_uNOM
           /    \
         vP     Asp
        /  \
      t_S ...
```

- Second, we hypothesize that what distinguishes embedded clauses with nominative and accusative subjects is that in the latter type, T lacks the ability to assign nominative case.

- We thus assume that a subject gains accusative case marking by bypassing TP and landing in the edge of CP, where it is accessible for case assignment by the matrix V:

(17)   *Nominalized clause with accusative subject in spec-CP*

```
                    ...
                  /    \
                NP      V_uACC
              /    \
            CP      N
          [PHASE]
          /    \
      S_ACC     \
              TP      C
            /    \
        AspP      T
        /  \
      vP    Asp
     /  \
   t_S ...
```

▷ That accusative case on the subject is assigned by matrix V is supported by the fact that accusative subjects are banned in clauses that are subjects (18), and the fact that when the matrix V cannot assign accusative case, an accusative subject is impossible (19):

8

(18) *No ACC subject within a clausal subject*

[[Fatima-nɨ sabij-i /sabij-i-ni /*sabij-i-n] alma aša-ʁan-ɨ]
Fatima-GEN child-3.NOM /child-3-GEN /child-3-ACC apple eat-NFUT-3.NOM
igi-di.
good-3

'That Fatima's child ate an apple is good.'

(19) *No ACC subject if matrix V does not independently assign ACC*

Alim [[fatima-nɨ sabij-i /sabij-i-ni /*sabij-i-**n**] mašina
Alim Fatima-GEN child-3.**NOM** /child-3-**GEN** /child-3-**ACC** car
buz-ʁan-**dan**] qurqu-ruq-du.
break-NFUT-**ABL** be.afraid-FUT-3

'Alim will be afraid of Fatima's child breaking a car.'

- Finally, we assume that in embedded clauses with genitive subjects, an absence of T (or presence of a highly defective one) is compensated for by merge of D, which assigns case to and triggers movement of the subject:

(20) *Nominalized clause with GEN subject in spec-DP*
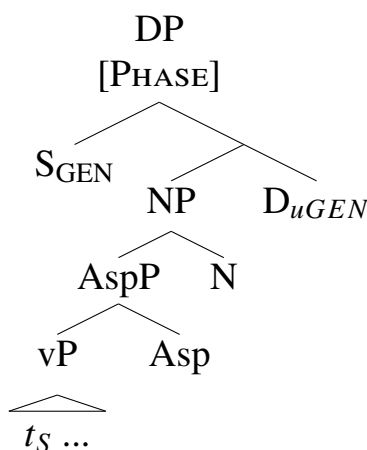
4 Analyzing the scrambling facts

- Here we will argue that the facts about scrambling from embedded clauses are accurately predicted, given what we've proposed above about the properties of each clause type.

  ▷ Following the assumptions of much current work, we take CP and DP to be phases, but not NP and TP, as marked in many of the diagrams shown above.[2]

- We begin with nominative subjects, whose interaction with object scrambling is very simple.

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[2]This analysis has no bearing on the phasehood of vP.

4.1 Object scrambling in clauses with nominative subjects

- If nominative subjects sit in the specifier of a TP dominated by CP, such subjects are not expected to have any interaction with scrambling of an object from the embedded clause.

  (21) *Nominative subject in spec-TP*
        [$_{NP}$ [$_{CP}$ [$_{TP}$ **S$_{NOM}$** [$_{vP}$ t_S O V-v] T] C] N] V ...

- And indeed, scrambling across nominative subjects, presumably via spec-CP, is acceptable:

  (22) *NOM subject does not interact with long-distance object scrambling*
        [$_{CP}$ O ... [$_{VP}$ [$_{NP}$ [$_{CP}$ t_O [$_{TP}$ S$_{NOM}$ [$_{vP}$ t_S t_O V-v] T] C] N] V] C]

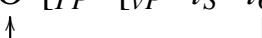## 4.2 Object scrambling in clauses with accusative subjects

- In contrast, we have seen that object scrambling from a clause with an accusative subject is unacceptable under normal circumstances.

- We have hypothesized that accusative subjects skip spec-TP and instead land in spec-CP, where they are assigned case by the matrix V.

  (23) *Accusative subject in spec-CP*
        [$_{NP}$ [$_{CP}$ **S$_{ACC}$** [$_{TP}$ [$_{vP}$ t_S O V-v] T] C] N] V ...

  ▷ If CP is a phase, any object scrambling from a clause with an accusative subject will have to pass through the CP edge, which in this context the subject also inhabits.

  ▷ Furthermore, following Richards (1997, 1999, a.o.), secondary specifiers formed by movement to a given head should be required to tuck-in to a lower specifier of that head:

    (24) *Predicted tucking-in below ACC subject prior to further object scrambling*
          ... [$_{NP}$ [$_{CP}$ S$_{ACC}$ O [$_{TP}$ [$_{vP}$ t_S t_O ...] T] C] N]]

- If such a structure is in fact the input to attempted scrambling across an accusative subject, we correctly predict the unacceptability of such scrambling with one additional concept.

- Specifically, if in a multiple specifier configuration the outer specifier must move before the inner one can be accessed, then we indeed expect scrambling of the object to fail here, since this would require illegally extracting the object from a lower specifier of CP:

  (25) *No scrambling object from spec-CP below ACC subject*
        * [$_{CP}$ O ... [$_{VP}$ [$_{NP}$ [$_{CP}$ S$_{ACC}$ t_O [$_{TP}$ [$_{vP}$ t_S t_O V-v] T] C] N] V] C]

★ Importantly, this understanding accurately predicts that if the accusative subject is moved into the matrix clause, then such movement of the object becomes possible as well:

(26) *Object scrambling fed by ACC subject movement*
   ✓ [$_{CP}$ S$_{ACC}$ O .... [$_{VP}$ [$_{NP}$ [$_{CP}$ t_S t_O [$_{TP}$ [$_{vP}$ t_S t_O V-v] T] C] N] V] C]

- That movement of an inner specifier requires movement of the one above it as well is predicted by at least two theories:

  ▷ Bošković (2016) argues that this is simply how phase impenetrability is calculated: if there are two edge constituents, only the highest (modulo traces) is visible.

  ▷ The same prediction is made by the *Cyclic Linearization* theory (Fox & Pesetsky 2005, a.o.), for which movement of a lower specifier of a phase will also require movement of any higher ones, in order to ensure that their linearization is kept consistent.[3]

- The Cyclic Linearization account accurately predicts that only the final order S < O is permitted here, as shown once more below:

(27) *Accusative subject scrambling feeds long object scrambling with S < O order*
   a. [**Fatima-n**ɨ **sabij-i-n**]$_k$ tünene **alma-n**ɨ$_j$ ustaz [$_{CLAUSE}$ t_k t_j
      Fatima-GEN child-3-ACC yesterday apple-ACC teacher.NOM
      aša-ʁan-ɨn] ešit-ti.
      eat-NFUT-3-ACC hear-PST
      'The teacher heard that Fatima's child ate the apple yesterday.'
   b. ***Alma-n**ɨ$_j$ tünene [**fatima-n**ɨ **sabij-i-n**]$_k$ ustaz [$_{CLAUSE}$ t_k t_j
      apple-ACC yesterday Fatima-GEN child-3-ACC teacher.NOM
      aša-ʁan-ɨn] ešit-ti.
      eat-NFUT-3-ACC hear-PST
      'The teacher heard that Fatima's child ate the apple yesterday.'

- Bošković (2016) will also predict this ordering fact if the two moving phrases necessarily tuck-in through all subsequent phases they pass through.

  ▷ We will not adjudicate between these two possibilities here, since both appear plausible.

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[3]See Davis (2020) for detail on why the Cyclic Linearization theory predicts that the order derived in a phase edge position will be preserved by subsequent movement.

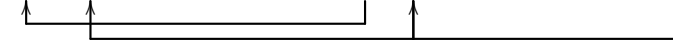## 4.3 Object scrambling in clauses with genitive subjects

- Above we hypothesized that embedded clauses with genitive subjects include DP, to whose specifier the subject moves for case-related reasons, as shown once more below:
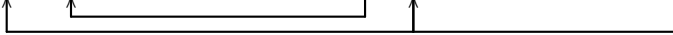
  (28) *Movement of GEN subject to spec-DP*
        $[_{DP}$ **S$_{\text{GEN}}$** $[_{NP}$ $[_{vP}$ t_S O V-v] N] D] V ...

- We have seen that the genitive subject can scramble into the matrix clause, which is unsurprising if it occupies the edge of the DP phase prior to the application of any A′-movement.

- But more surprising is the fact that, as section 2 showed, object scrambling from such an embedded clause is impossible whether the genitive subject scrambles out or not:

  (29) *GEN subject movement never feeds long-distance object scrambling*
        a. * $[_{CP}$ O .... $[_{VP}$ $[_{DP}$ S$_{\text{GEN}}$ t_O $[_{NP}$ $[_{vP}$ t_S t_O V-v] N] D] V] C]
        b. * $[_{CP}$ S$_{\text{GEN}}$ O .... $[_{VP}$ $[_{DP}$ t_S t_O $[_{NP}$ $[_{vP}$ t_S t_O V-v] N] D] V] C]
        c. * $[_{CP}$ O S$_{\text{GEN}}$ .... $[_{VP}$ $[_{DP}$ t_S t_O $[_{NP}$ $[_{vP}$ t_S t_O V-v] N] D] V] C]

- ★ This fact will be accurately predicted if A′-extraction cannot pass through spec-DP. In this situation, the behavior of the genitive subject is simply irrelevant.

- While it is not abundantly clear why this should be so, a few works have made this suggestion.

  ▷ Bosque & Gallego (2014) argue that extraction from Spanish DPs cannot occur, and that when it appears to have, reanalysis is involved.

  ▷ Reeve (2018) argues that nominal phrases are phases that uniquely lack edges, and proposes that apparent extraction from them involves base generation in a higher position.

  ▷ van Urk (2019) recently points out that while nominal phrases have many of the hallmarks of phase-hood, it remains unclear if there is solid evidence for successive-cyclic movement through them.[4]

- For the purposes of this presentation, we will leave a solution for this unique property of the DP to future work.

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[4]Rackowski & Richards (2005) and several works following argue that extraction from a phase can bypass its edge if and only if that phase is first agreed-with. If DP uniquely lacks an edge position for A′-extraction, then it could be the case that all extraction from DP requires agreement in this way. If so, this would entail that part of why extraction from DP seems relatively constrained is because, unlike extraction from CP or vP, it is contingent on the availability of an independent agreement process. Such agreement would apparently be null in many cases, for instance, in English sentences like *Who did you see a picture of?*.

5   Extension: Locality and subject scrambling

- Here we extend the above concepts to account for some additional properties of embedded subjects.

- First, on binding: If the principles of binding theory are evaluated at the phase level (Charnavel & Sportiche 2016, Bošković 2016, a.o.), then an anaphoric subject should have to inhabit the edge of its local clause if it is to be bound by an antecedent in the matrix clause.

  ▷ Recall that our analysis in the previous section used the idea that accusative and genitive subjects inhabit the edge of their embedded clause (respectively in CP and DP), while nominative subjects remain in TP, below CP.

- These concepts together accurately predict the fact that only accusative and genitive subjects can be anaphors bound by an antecedent in the matrix clause:

  (30)   *Matrix subject can bind only ACC/GEN subject anaphor*[5]

   Ustaz$_k$ [$_\text{CLAUSE}$ [**kesi-kes**-i-<u>ni/n/*∅</u>]$_k$ alma aša-ʁan-ɨ-n   ] ešit-ti
   teacher.NOM   self-self-3-<u>GEN/ACC/*NOM</u> apple eat-NFUT-3-ACC   hear-PST

   'The teacher heard herself eating an apple.'

  ▷ This connection between binding and phase edges is also evident in English, in which an anaphor originating in an embedded clause must move to the clause edge to be bound by a phrase in the matrix clause (Nissenbaum 2000):

  (31)   *Binding into embedded clause must take advantage of clause edge*
      a.   *Mary$_1$ said [$_{CP}$ that we should keep [this picture of herself$_1$]].
      b.   Mary$_1$ said [$_{CP}$ [which picture of herself$_1$]$_2$ we should keep t_2].
      c.   *He$_2$ knows [$_{CP}$ (that) [this picture of himself2] is probably the best].
      d.   He$_3$ knows [$_{CP}$ [which picture of himself3]$_4$ t_4 is probably the best].

- **Related fact**: Nominative subjects in Balkar are frozen in place, and thus unlike accusative and genitive ones, cannot move from the embedded clause:[6]

---

[5]Note that the unacceptability of the nominative anaphor here cannot be attributed to an anaphor agreement effect, since these three subject types are all targeted for agreement by the embedded clause.

[6]For some speakers, while scrambling of the nominative subject is usually illegal, it becomes licit if and only if the object also scrambles, provided that O < S word order holds. At the moment, we have only speculations about this interesting pattern.

  i   a.   *[**Fatima-n**ɨ **sabij-**i]$_k$ **alma-n**ɨ$_j$ tünene   ustaz t_k t_j aša-ʁan-ɨn   ešit-ti.
          Fatima-GEN   child-3.NOM apple-ACC yesterday teacher.NOM   eat-NFUT-3-ACC hear-PST

      'The teacher heard that Fatima's child ate the apple yesterday.'
     b.   **Alma-n**ɨ$_j$ tünene   [**fatima-n**ɨ   **sabij-**i]$_k$ ustaz t_k t_j aša-ʁan-ɨn   ešit-ti.
          apple-ACC yesterday Fatima-GEN child-3.NOM teacher.NOM   eat-NFUT-3-ACC hear-PST

<div align="center">13</div>

(32) *No scrambling of* NOM *subject*

*[**Fatima-nɨ bala-sɨ**]$_k$ (tünene)   ustaz   [t_k alma-nɨ   aša-ʁan-ɨ-n]
Fatima-GEN   child-3.NOM (yesterday) teacher.NOM   apple-ACC eat-NFUT-3-ACC
ešt-gen-di.
hear-NFUT-3

'The teacher heard that Fatima's child ate an apple (yesterday).[7]

- The impossibility of both the binding of the nominative subject in (30), and its scrambling from the embedded clause in (32), would be predicted if there were an independent reason to expect the unavailability of movement from spec-TP to spec-CP.

  ▷ If this movement is banned, the nominative subject cannot reach the edge of its local phase and thus would not be accessible for dependencies relating to the higher clause.

(33) *To be ruled out: Movement from spec-TP to spec-CP*
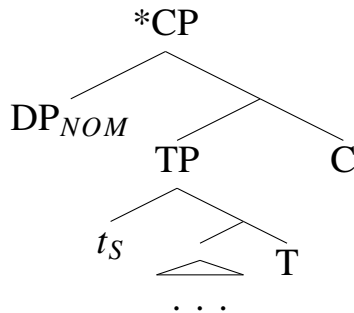
  ▷ Movement of precisely this sort is ruled out by the formulation of anti-locality in Brillman & Hirsch (2016) and Erlewine (2016), who argue for a ban on movement from a specifier of a given phrase to one of the next highest phrase:[8,9]

'The teacher heard that Fatima's child ate the apple yesterday.'
(Also OK: Fatima's child heard that the teacher ate the apple yesterday.)

[7]This sentence is possible under an interpretation that does not involve scrambling: "Fatima's child heard that the teacher ate an apple (yesterday)."

[8]If such anti-locality is a real constraint, we might ask why many languages do allow cross-clausal scrambling of nominative subjects. English is, of course, such a language. Brillman & Hirsch (2016) suggest following Doherty (1997) that embedded clauses in English may lack a CP layer and thus involve extraction of subjects directly from spec-TP (yielding the *that*-trace effect):

(i)   Who$_1$ does Bill think [$_{TP}$ t_1 saw John]?

Another account consistent with the version of anti-locality used here comes from McCloskey (2000), who suggests based on facts about stranding in West Ulster English that subject extraction may proceed directly from spec-vP to spec-CP. We thus have two potential ways of understanding why languages like English permit the movement in (i). Correspondingly, we expect such derivations to be unavailable in Balkar (though see the footnote in 6 above for a puzzle which might be relevant on this note).

[9]An alternative account of the ban on nominative subject scrambling might come from processing: perhaps pressure to parse the scrambled nominative subject as the subject of the matrix clause causes a garden path effect. Under such an analysis, it is not obvious why English speakers would not have comparable trouble with a sentence like the following:

(i)   John$_1$, Mary thinks [t_1 likes this kind of food].

Yet another alternative account would be that nominative subjects are not frozen, but rather, simply gain accusative case marking if they

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(34) *Spec-to-spec anti-locality*

```
              *XP
           ╱      ╲
       ZP₁     ╱    ╲
            X       YP
                  ╱    ╲
                t₁    ╱  ╲
                     Y   ...
```
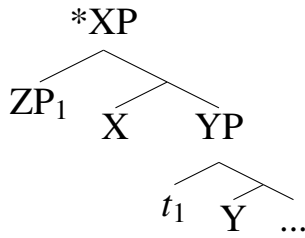
- In contrast, the fact that accusative and genitive subjects can both be bound by the matrix subject, and can both scramble out of their local clause, are predicted if these subjects bypass spec-TP and instead A-move to the edge of their local phase, as argued above.

5.1 Supporting evidence that nominative subjects are frozen

5.1.1 QR

- Baseline: in a simple clause, both direct and inverse scopes are available:

(35) Eki qɨz xar   žaš-nɨ   kör-gen-di-le.
      two girl every boy-ACC see-NFUT-3-PL

   1. *Two >every*: 'There were two girls such that they saw every boy.'
   2. *Every >two*: 'For every boy, two (potentially different) girls saw him.'

- When an embedded subject is a quantifier phrase, its case matters for possible scopes with respect to the matrix subject.

- When the embedded subject is genitive, both scopes are available; and that is independent of whether the genitive subject undergoes scrambling.

(36) Eki qɨz **fatima-nɨ xar žaš-ɨ-nɨ**   šaxar-ʁa bar-ʁan-ɨ-n   ešit-ti-le.
      two girl Fatima-GEN every boy-3-GEN city-DAT go-NFUT-3-ACC hear-PST-PL

   1. *Two >every*: 'There were two girls such that they heard that Fatima's every boy went to the city.'
   2. *Every >two*: 'For Fatima's every boy, there were two (potentially different) girls that heard that he went to the city.'

(37) **Fatima-nɨ xar žaš-ɨ-nɨ**ₖ eki qɨz **t**ₖ šaxar-ʁa bar-ʁan-ɨ-n   ešit-ti-le.
      Fatima-GEN every boy-3-GEN two girl   city-DAT go-NFUT-3-ACC hear-PST-PL

   1. *Two >every*: 'There were two girls such that they heard that Fatima's every boy went to the city.'
   2. *Every >two*: 'For Fatima's every boy, there were two (potentially different) girls that heard that he went to the city.'

---

move through spec-CP in order to exit the clause. If nominative subjects are thus perfectly mobile modulo a morphological confound, then the facts in section 5.1, which shows that nominative subjects cannot undergo covert movement either, would be mysterious.

- The same pattern is observed for when the embedded subject is accusative: both scopes are available independent of scrambling.

(38) Eki qɨz **fatima-nɨ xar žaš-i-n**   šaxar-ʁa bar-ʁan-i-n   ešit-ti-le.
      two girl Fatima-GEN every boy-3-ACC city-DAT go-NFUT-3-ACC hear-PST-PL
      1. *Two >every*: 'There were two girls such that they heard that Fatima's every boy went to the city.'
      2. *Every >two*: 'For Fatima's every boy, there were two (potentially different) girls that heard that he went to the city.'

(39) **Fatima-nɨ xar žaš-i-n**$_k$ eki qɨz **t**$_k$ šaxar-ʁa bar-ʁan-i-n   ešit-ti-le.
      Fatima-GEN every boy-3-ACC two girl   city-DAT go-NFUT-3-ACC hear-PST-PL
      1. *Two >every*: 'There were two girls such that they heard that Fatima's every boy went to the city.'
      2. *Every >two*: 'For Fatima's every boy, there were two (potentially different) girls that heard that he went to the city.'

  - When the embedded subject is nominative, only the direct scope is available. The correlation with overt scrambling holds: nominative subjects cannot be scrambled.

(40) Eki qɨz **xar žaš**   šaxar-ʁa bar-ʁan-i-n   ešit-ti-le.
      two girl every boy-3.**NOM** city-DAT go-NFUT-3-ACC hear-PST-PL
      1. *Two >every*: 'There were two girls such that they heard that every boy went to the city.'
      2. **Every >two*: *'For every boy, there were two (potentially different) girls that heard that he went to the city.'

(41) ****Xar žaš**$_k$ (tünene)   eki qɨz **t**$_k$ šaxar-ʁa bar-ʁan-i-n   ešit-ti-le.
      every boy-3.**NOM** (yesterday) two girl   city-DAT go-NFUT-3-ACC hear-PST-PL
      'Two girls heard that every boy went to the city.' (ungrammatical under both scopes)

5.1.2 NPI licensing

- Due to syncretism of genitive and accusative pronouns, here and in the next section we will not be able to show genitive and accusative subjects separately. But will show that a form that is genitive/accusative has different properties compared to the nominative one.

- Basic facts about NPIs:

  ◦ *Kiši-da* (man-PTCL) is an NPI pronoun:
  ◦ It cannot be used in upward entailing contexts;

    (42) a. *Kiši-da alma aša-ʁan-dɨ.
             man-PTCL apple eat-NFUT-3
             Exp.: 'Someone ate an apple.'

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b. *Alim kiši-ni-da   kör-gen-di.
   Alim man-ACC-PTCL see-NFUT-3
   Exp.: 'Alim saw someone.'[10]

- ○ but it can be used when, e.g., negation is present.

   (43) a. **Kiši-da** alma aša-**ma**-ʁan-dɨ.
           man-PTCL apple eat-NEG-NFUT-3
           'Nobody ate an apple.'
        b. Alim **kiši-ni-da**   kör-**me**-gen-di.
           Alim man-ACC-PTCL see-NEG-NFUT-3
           'Alim didn't see anyone.'

- When the embedded subject is an NPI of a GEN/ACC form, it can get licensed either my embedded or by matrix negation:

(44) a. Ustaz **kiši-ni-da**   alma aša-**ma**-ʁan-i-n   kör-gen-di.
        teacher man-GEN/ACC-PTCL apple eat-NEG-NFUT-3-ACC see-NFUT-3
        'The teacher saw that no one ate an apple.'
     b. Ustaz **kiši-ni-da**   alma aša-ʁan-i-n   kör-**me**-gen-di.
        teacher man-GEN/ACC-PTCL apple eat-NFUT-3-ACC see-NEG-NFUT-3
        'The teacher didn't see of any x that x ate an apple.'

- However when an embedded subject NPI is NOM, it can get licensed only by the embedded negation:

(45) a. Ustaz **kiši-da**   alma aša-**ma**-ʁan-i-n   kör-gen-di.
        teacher man.NOM-PTCL apple eat-NEG-NFUT-3-ACC see-NFUT-3
        'The teacher saw that no one ate an apple.'
     b. *Ustaz **kiši-da**   alma aša-ʁan-i-n   kör-**me**-gen-di.
        teacher man.NOM-PTCL apple eat-NFUT-3-ACC see-NEG-NFUT-3
        Expected: 'The teacher didn't see of any x that x ate an apple.'

5.1.3 Wide-scope indefinites

- *Kim ese da* is a wide-scope indefinite: e.g., it normally takes high scope negation w.r.t. negation in a simple clause.

- When this indefinite is an embedded subject of the nominalization, its scope with respect to matrix negation is determined by its case.

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[10]This sentence however is possible under a reading where *kiši* is interpreted literally, as meaning 'man': 'Alim saw a man too.'

- When *kim ese da* is in the genitive/accusative form, it obligatorily takes wide scope with respect to matrix negation.

(46) Ustaz **kim-ni-ese-da** alma aša-ʁan-i-n ešit-**me**-gen-di.
teacher who-GEN/ACC-PTCL-PTCL apple eat-NFUT-3-ACC hear-NEG-NFUT-3
'The teacher didn't hear that someone ate an apple.'
∃ >¬*:* 'There exists someone about whom the teacher didn't hear that they ate an apple.'
¬ >∃*:* *'The teacher didn't hear that anyone ate an apple.'

- When *kim ese da* is in the nominative form, it obligatorily takes narrow scope with respect to matrix negation.

(47) Ustaz **kim-ese-da** alma aša-ʁan-i-n ešit-**me**-gen-di.
teacher who.NOM-PTCL-PTCL apple eat-NFUT-3-ACC hear-NEG-NFUT-3
'The teacher didn't hear that someone ate an apple.'
∃ >¬*:* *'There exists someone about whom the teacher didn't hear that they ate an apple.'
¬ >∃*:* 'The teacher didn't hear that anyone ate an apple.'

6 Conclusion

- To recap, in this presentation we have argued that Balkar reveals the following principles about movement:

  ▷ #1: That CP is a phase which allows multiple specifiers provided that *tucking-in* applies (Richards 1997, 1999).

  ▷ #2: That the highest phrase in a multiple specifier structure is privileged, such that a higher specifier must move before a lower one can be accessed. (Bošković 2016, a.o.).

  ▷ #3: That DP is a phase which (at least in this context) does not allow A′-movement through its edge (Bosque & Gallego 2014, Reeve 2018, van Urk 2019).

- These proposals stem from an understanding whereby accusative and genitive subjects, but not nominative ones, inhabit the edge of their local nominalized clause.

- We also related this proposal to asymmetries in the bind-ability and mobility of subjects, which we argued additionally supplied evidence for the influence of anti-locality.

- **A puzzle:** We predict that any variety of non-subject scrambling should in principle behave exactly the same as object scrambling as described here. Our data on this is incomplete, but some speakers indeed fit this prediction, while others showed more variability.

7 Appendix A: Adverbs as a diagnostic for clause-internal scrambling

- Temporal adverbs cannot be used as a diagnostic because of nominalizations with genitive subjects: they cannot have adverbial modification that contradicts adverbial modification of the matrix clause.

- Lower adverbs can be used, because they are present in all the three nominalizations.

- (48) shows that adverbs like 'loudly' (lit. 'while causing the making of noise') can occur at the edge of the embedded clause, but cannot scramble outside the embedded clause.

(48) **Long-distant adjunct scrambling**

   a. ustaz   bala-sɨ   **tauuš et-dir-ip**   alma-nɨ aša-ʁan-ɨ-n
      teacher.NOM child-3.NOM **noise make-CAUS-CONV** apple-ACC eat-NFUT-3-ACC
      ešit-ti
      hear-PST
      'The teacher heard that her child ate the apple loudly.'

   b. ustaz   **tauuš et-dir-ip**   bala-sɨ   alma-nɨ aša-ʁan-ɨ-n
      teacher.NOM **noise make-CAUS-CONV** child-3.NOM apple-ACC eat-NFUT-3-ACC
      ešit-ti
      hear-PST
      'The teacher heard that her child ate the apple loudly.'

   c. *__tauuš et-dir-ip__   ustaz   bala-sɨ   alma-nɨ aša-ʁan-ɨ-n
      noise make-CAUS-CONV teacher.NOM child-3.NOM apple-ACC eat-NFUT-3-ACC
      ešit-ti
      hear-PST
      Expected: 'The teacher heard that her child ate the apple loudly.'
      (But possible under the interpretation where the teacher is the one making noise.)

⇒ These indicates that these adverbs can be used as a marker of the embedded clause boundary.

8 Appendix B: Possessors of embedded subjects can move

- Scrambling of the possessor of the NMN subject is possible irrespective of the case of the NMN's subject.

   (49)   Scrambling of the possessor of the NMN subject

fatima-nɨ$_k$ tünene ustaz [t_k sabij-i /sabij-i-ni /sabij-i-n]
Fatima-GEN yesterday teacher child-3.NOM /child-3-GEN /child-3-ACC

alma-sɨ-n aša-ʁan-in ešit-ti
apple-3-ACC eat-NFUT-3-ACC hear-PST

'The teacher heard that Fatima's child ate his apple yesterday.'

- The same movement is possible from regular NPs as well: possessors of GEN possessors of NPs can scramble out, (50).

(50) Scrambling of a possessor of an NP's possessor

fatima-nɨ$_k$ tünene asiat t_k **sabij-i-ni** tatɨulu alma-sɨ-n aša-dɨ
Fatima-GEN yesterday Asiat.NOM **child-3-GEN** tasty apple-3-ACC eat-PST

'Asiat ate Fatima's child's tasty apple yesterday.'

- Ability of possessors of the NMN's subject to scramble correlates with them being able to QR and take wide scope with respect to the matrix subject, (51)-(52).

(51) Baseline

eki qɨz xar oquc-u-nu nöger-ler-i-n kör-gen-di-le
two girl.NOM every student-3-GEN friend-PL-3-ACC see-NFUT-3-PL

'Two girls saw a friend of every student.'
1. 2 >∀: There were two girls such that they saw a friend of every student.
2. ∀ > 2: For every student, there were two girls who saw a friend of theirs.

(52) Target

eki qɨz xar oquc-u-nu nöger-i /nöger-i-ni /nöger-i-n
two girl.NOM every student-3-GEN friend-3.NOM /friend-3-GEN /friend-3-ACC

alma aša-ʁan-i-n ešit-ti
apple eat-NFUT-3-ACC hear-PST

'Two girls heard that a friend of every student ate an apple.'
1. 2 >∀: There were two girls such that they heard that a friend of every student ate an apple.
2. ∀ > 2: For every student$_k$, there were two girls$_j$ such that they$_j$ heard that their$_k$ friend ate an apple.

- Moreover, possessors of all three nominalizations can be anaphors bound by the matrix subject, (53).[11]

---

[11]Unfortunately, NPI and wide-scope indefinites could not be tested: making possessors out of those pronominal items has failed.

(53) Binding

kerim   kesi kes-i-ni   bala-sï   /bala-sï-ni /bala-sï-n   kitab
Kerim.NOM self self-3-GEN child-3.NOM /child-3-GEN /child-3-ACC book
oqu-ʁan-ï-n   ešit-gen-di
read-NFUT-3-ACC hear-NFUT-3

'Kerim$_k$ heard that his$_k$ child read a book.'

- All these properties indicate that possessors of embedded subjects can occupy the edge of the nominalization and get out of it.

⇒ The fact that possessors of NOM subjects can get to the edge suggests that they, unlike the nominative subjects themselves, are not subject to the antilocality restrictions.

⇒ Perhaps this is so because movement from within the nominative subject, given that it takes off from a more deeply embedded position, is effectively 'longer' than movement of the subject itself.

9   Appendix C: Similiar patterns in Turkish & Buryat

- Patterns similiar to Balkar are also observed in other languages.

- In Turkish scrambling of the object is possible from CPs with nominative subjects, but not from the ones with accusative subjects.

(54) **Nominative Subject (CP)**

    a. Ahmet   [Ali   kitab-ı   oku-du] biliyor
       Ahmet.NOM Ali.NOM book-ACC read-PST knows
       'Ahmet believes that Ali read the book.'

    b. Ahmet   [**kitab-ı**$_k$ Ali   **t**$_k$ oku-du] biliyor
       Ahmet.NOM book-ACC Ali.**NOM**   read-PST knows
       'Ahmet believes that Ali read the book.'

    c. **kitab-ı**$_k$ Ahmet   [Ali   **t**$_k$ oku-du] biliyor
       book-ACC Ahmet.NOM Ali.**NOM**   read-PST knows
       'Ahmet believes that Ali read the book.'

(55) **Accusative Subject (CP)**

    a. Ahmet   [Ali-yi kitab-ı   oku-du] biliyor
       Ahmet.NOM Ali-ACC book-ACC read-PST knows
       'Ahmet believes that Ali read the book.'

    b. *Ahmet   [**kitab-ı**$_k$ Ali-**yi** **t**$_k$ oku-du] biliyor
       Ahmet.NOM book-ACC Ali-**ACC**   read-PST knows
       'Ahmet believes that Ali read the book.'

c. *__kitab-ı__$_k$ Ahmet   [Ali-__yi__ __t__$_k$ oku-du] biliyor
book-ACC Ahmet.NOM Ali-__ACC__   read-PST knows
'Ahmet believes that Ali read the book.'

- In Buryat (Mongolic), object scrambling out of finite CPs is possible only if the embedded subject is nominative (but not accusative).

(56) **Nominative Subject (CP)**

    a. badma   [sajana   tumən-ijə   xara-xa gəžə] han-a:
          Badma.NOM Sajana.NOM Tumen-ACC see-FUT COMP think-PST
          'Badma thought that Sajana will see Tumen.'

    b. badma   [__tumən-ij__ə$_k$ sajana   __t__$_k$ xara-xa gəžə] han-a:
          Badma.NOM Tumen-ACC Sajana.__NOM__   see-FUT COMP think-PST
          'Badma thought that Sajana will see Tumen.'

    c. __tumən-ij__ə$_k$ badma   [sajana   __t__$_k$ xara-xa gəžə] han-a:
          Tumen-ACC Badma.NOM Sajana.__NOM__   see-FUT COMP think-PST
          'Badma thought that Sajana will see Tumen.'

(57) **Accusative Subject (CP)**

    a. badma   [sajan-i:jə tumən-ijə   xara-xa gəžə] han-a:
          Badma.NOM Sajana-ACC Tumen-ACC see-FUT COMP think-PST
          'Badma thought that Sajana will see Tumen.'

    b. *badma   [__tumən-ij__ə$_k$ sajan-__i:j__ə   __t__$_k$ xara-xa gəžə] han-a:
          Badma.__NOM__ Tumen-ACC Sajana-__ACC__   see-FUT COMP think-PST
          'Badma thought that Sajana will see Tumen.'[12]

    c. *__tumən-ij__ə$_k$ badma   [sajan-__i:j__ə __t__$_k$ xara-xa gəžə] han-a:
          Tumen-ACC   Badma.__NOM__ Sajana-__ACC__   see-FUT COMP think-PST
          'Badma thought that Sajana will see Tumen.'[13]

- Similar restrictions hold for nominalized clauses: objects cannot scramble over accusative subjects, which are on the edge of the embedded clause, but can scramble over genitive subjects, which occupy position lower than the edge (Bondarenko 2017).

(58) **Genitive Subject (NMN)**

    a. badma   [sajan-i:n tumən-ijə xar-a:ʃ-i:jə]   han-a:
          Badma.NOM Sajana-GEN Tumen-ACC see-PART-ACC think-PST
          'Badma remembered that Sajana saw Tumen.'

    b. badma   [__tumən-ij__ə$_k$ sajan-__i:n__   __t__$_k$ xar-a:ʃ-i:jə]   han-a:
          Badma.NOM Tumen-ACC Sajana-__GEN__   see-PART-ACC think-PST
          'Badma remembered that Sajana saw Tumen.'

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[12]This sentence is grammatical under a different reading: Badma thought that Tumen will see Sajana.
[13]This sentence is grammatical under a different reading: Badma thought that Tumen will see Sajana.

c. **tumən-ij**ə*k* badma   [sajan-**i:n** **t***k* xar-a:ʃ-i:jə] han-a:
   Tumen-ACC Badma.NOM Sajana-**GEN**   see-PART-ACC think-PST
   'Badma remembered that Sajana saw Tumen.'

(59) **Accusative Subject (NMN)**

   a. badma   [sajan-i:jə tumən-ijə xar-a:ʃ-i:jə] han-a:
      Badma.NOM Sajana-ACC Tumen-ACC see-PART-ACC think-PST
      'Badma remembered that Sajana saw Tumen.'

   b. *badma   [**tumən-ij**ə*k* sajan-**i:j**ə **t***k* xar-a:ʃ-i:jə] han-a:
      Badma.NOM Tumen-ACC Sajana-**ACC**   see-PART-ACC think-PST
      'Badma remembered that Sajana saw Tumen.'

   c. ***tumən-ij**ə*k* badma   [sajan-**i:j**ə **t***k* xar-a:ʃ-i:jə] han-a:
      Tumen-ACC Badma.NOM Sajana-**ACC**   see-PART-ACC think-PST
      'Badma remembered that Sajana saw Tumen.'

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