Backward Control in Tsez

Maria Polinsky and Eric Potsdam
University of California at San Diego and University of Florida

1. Introduction

In a well-known paper, Perlmutter (1970) documents two uses of the English verb *begin*. In the first, *begin* is a raising verb with a non-thematic subject, participating in derivations exemplified by (1a, b). In the second use, *begin* is a transitive verb with an external argument, (2).

(1) a. There$_i$ began [t$_i$ to be a riot]
     b. The shit$_i$ began [t$_i$ to hit the fan]

(2)   Sam began the job.

In this paper, we will examine the corresponding verb in Tsez, a minority language of the Caucasus. The Tsez aspectual verb *-oqa* 'begin' also evidences two uses. The first is as a raising verb:[1]

(3)   kid$_i$ [t$_i$ ziya   bišra]   yoqsi
         girl.**ABS**   cow.ABS feed.INF began
         'The girl began to feed the cow.'

This use of *-oqa* shows all the expected properties of a raising verb with a non-thematic subject and English-like derivation and we will not be concerned with it here (see Polinsky to appear). (4a) illustrates a second use of *-oqa*. Superficially, (4a) differs from (3) only in that the subject is in the ergative case, not the absolutive case.

(4) a. kidbā   ziya   bišra   yoqsi
         girl.**ERG** cow.ABS   feed.INF began
         'The girl began to feed the cow.'
     b. EC$_i$ [kidbā$_i$ ziya   bišra]   yoqsi
             girl.**ERG** cow.ABS   feed.INF began

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1.   Here and below, the following abbreviations are used: ABS—absolutive, BC—Backward Control, DAT—dative, ERG—ergative, EVID—evidential, INF—infinitive, INTERR—interrogative, OC—Obligatory Control, REFL—reflexive, VAL—validator.

A closer examination of (4a) reveals that it has a number of intriguing properties. We will argue that it represents a control construction and not a raising construction. More surprisingly, we argue that (4a) exhibits an unusual pattern of BACKWARD CONTROL (BC): a biclausal configuration in which the subject of the embedded clause is pronounced and the matrix subject is a thematic coindexed empty category (EC), as schematized in (4b).[2] This phenomenon has important consequences for current theories of Obligatory Control (OC).

The paper is structured as follows. Section 2 introduces our analysis of (4) and Sections 3 through 5 present syntactic evidence for the structure. Section 6 summarizes our finding that -*oqa* is a Backward Subject Control verb. Sections 7 and 8 then consider analyses of BC within the Principles and Parameters (P&P) and Minimalist frameworks. We argue that BC is ruled out in a PRO-based P&P approach but can be accommodated under Minimalist assumptions with Hornstein's (1999) movement analysis of Control. Section 9 summarizes the main issues.

2.   Morphosyntactic preliminaries

Tsez is an unwritten language of the Nakh-Daghestanian family, spoken in the northeast Caucasus. The language is head-final and the preferred word order is SOV. Tsez is morphologically ergative: the subjects of transitive verbs are in the ergative case and subjects of intransitive verbs and direct objects are in the absolutive case. A verb obligatorily agrees in noun class with its absolutive argument. The noun class of the absolutive NP (glossed by a Roman numeral) is marked by one of the agreement prefixes in (5).

(5)   <u>class</u>   <u>singular</u>   <u>plural</u>
       I   ø-   b-   male human
       II   y   r-   female human and some inanimates
       III   b-   r-   animals and some inanimates
       IV   r-   r-   inanimates including clauses

With this morphosyntactic background, let us now return to the example in (4), glossed more fully in (6).

(6)   kid-bā   ziya   b-išr-a   y-oq-si
          girl.**II**-ERG   cow.III.ABS   III-feed-INF   **II**-begin-PAST.EVID
          'The girl began to feed the cow.'

Given that Tsez verbs agree only with absolutive NPs, the bold-faced agreement in (6) between the verb *yoqsi* 'began' and the ergative argument *kidbā* 'girl' is surprising. This unusual agreement pattern can have two analyses: i) the Tsez verb -*oqa* is exceptional in that it shows agreement with an ergative NP or ii) the ergative NP is not the actual agreement trigger, rather, -*oqa* is agreeing with a silent absolutive argument in its own clause. Under the first account, the structure is (7a) and we require the apparently unmotivated stipulation that -*oqa* agrees with its ergative subject. Under the second account, -*oqa* shows the canonical absolutive

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2.   The verb –*iča* 'continue' has the same syntax as -*oqa*.

agreement pattern but takes an empty category subject which is coindexed with the ergative NP in the embedded clause. This is schematized in (7b).

(7) a. kidbā$_i$ [EC$_i$ ziya   bišra]   y-oqsi
         girl.II.ERG   cow.ABS   feed.INF   II-began
     b. EC$_i$ [kidbā$_i$ ziya   bišra]   y-oqsi
         EC.II   girl.ERG   cow.ABS   feed.INF   II-began
         'The girl began to feed the cow.'

The central claims of the second analysis, (7b), are in (8). Sections 3 through 5 show that each has independent empirical support. We thus conclude that the empty category proposal is preferable independent of the agreement pattern that motivates it.

(8) a. *-oqa* has a thematic subject
     b. the logical subject of complement verb remains in lower clause
     c. the subject of *-oqa* is a coindexed empty category

3. Thematic subject

Two general observations support the claim in (8a) that the subject of *-oqa* is thematic. First, the overt NP cannot be an idiom chunk. Example (9a) illustrates an idiomatic expression with an ergative subject. As (9b) shows, the ergative idiom chunk is ungrammatical with *-oqa*.

(9) a. t'ont'oħā   buq   bac'xo
         darkness.ERG   sun.ABS   eat.PRESENT
         'The sun has eclipsed.' (lit. "Darkness eats the sun.")
     b. * t'ont'oħā   buq   bac'a   bāq
         darkness.ERG   sun.ABS   eat.INF   begin.FUTURE
         ('The sun will begin to eclipse.')

Second, *-oqa* is incompatible with inanimate subjects, as shown by (10b). This incompatibility follows on the assumption that *-oqa* has a thematic subject and imposes selectional restrictions.

(10) a. ħacā   nesis   xot'o   žek'si
         door.ERG   his   foot.ABS   hit.PAST.EVID
         'The door hit his foot.'
     b. *ħacā   nesis   xot'o   žek'a   yāq
         door.ERG   his   foot   hit.INF   begin.FUTURE
         ('The door will begin to hit his foot.')

Polinsky (to appear) discusses additional straightforward restrictions of this sort and we thus conclude that *-oqa* 'begin' assigns a semantic role to its subject.

4. Position of the overt subject

The second and most interesting claim of our analysis, (8b), is that the overt subject in (6) is actually in the embedded clause. In this way, (6) differs markedly from the more familiar control construction. Four arguments support this claim.

First, the case of the overt subject is determined by the embedded predicate. If the embedded verb is intransitive, only absolutive case appears. With two-place verbs, the case of the subject is lexically governed and can be ergative, (11a), or, for some verbs, dative, (11b):

(11) a.   [kidbā   ziya   bišra]   yoqsi
          girl.**ERG**   cow.ABS   feed.INF   began
          'The girl began to feed the cow.'
     b.   [kidber   hisab   bič'zi boqa] yoqsi
          girl.**DAT**   math.ABS   understand.INF began
          'The girl began to understand math.'

The second argument comes from scrambling. We have proposed elsewhere that Tsez scrambling is clause-bound (Polinsky and Potsdam to appear). In particular, NPs cannot scramble out of infinitival clauses. This correctly predicts that the ergative NP in (12a) cannot scramble into the matrix clause. (12b) is ungrammatical.

(12) a.   ħuλ   [kidbā   ziya   bišra]   yoqsi
          yesterday   girl.ERG   cow.ABS   feed.INF   began
          'Yesterday the girl began to feed the cow.'
     b.   * kidbā   ħuλ   [ziya   bišra]   yoqsi
          girl.ERG   yesterday   cow.ABS   feed.INF   began

Furthermore, as (13b, c) show, the entire infinitival clause can scramble as a unit, indicating that it is a single constituent containing the overt subject.

(13) a.   ħuλ   [kidbā   ziya   bišra]   yoqsi
          yesterday   girl.ERG   cow.ABS   feed.INF   began
     b.   ħuλ   yoqsi   [kidbā   ziya   bišra]
          yesterday   began   girl.ERG   cow.ABS   feed.INF
     c.   [kidbā   ziya   bišra]   ħuλ   yoqsi
          girl.ERG   cow.ABS   feed.INF   yesterday   began
          'Yesterday the girl began to feed the cow.'

The third argument showing that the logical subject of the complement clause is in that clause comes from the interpretation of temporal adverbials such as *uyrax* 'four times'. When following the overt subject, such an adverbial has an unambiguous interpretation modifying the embedded verb. Thus, (14a) can only mean that the girl started four feedings of the cow—in other words, *uyrax* 'four times' must be interpreted with the feeding event. In contrast, (14b) is structurally ambiguous and could either mean that there were four feedings (the adverbial is interpreted with the embedded verb) or four beginnings (the adverbial is interpreted with -*oqa* 'begin').

(14) a.   [kidbā   **uyrax**   ziya   bišra]   yoqsi
          girl   four times   cow   feed   began
          'The girl began to feed the cow four times.'   (four feedings)
          *'The girl began four times to feed the cow.'   (four beginnings)
     b.   **uyrax**   kidbā   ziya   bišra   yoqsi
          four times   girl   cow   feed   began
          'The girl began to feed the cow four times.'   (four feedings)
          'The girl began four times to feed the cow.'   (four beginnings)

The final argument comes from clitic placement. Tsez has a second-position validator clitic -*uy* which agrees with the absolute NP:

(15)   (*buy)   kidbā   b-uy   ziya   (*buy)   bišersi
        VAL   girl.ERG III-VAL   cow.III.ABS   VAL   III.fed
        'The girl did indeed feed the cow.'

Crucially, -*uy* is limited to root clauses, accounting for the ungrammaticality of (16a) in which (15) is embedded. Example (16b) shows that, even when -*uy* is superficially in second position, the placement of the clitic in an embedded clause still renders the sentence ungrammatical.

(16) a.   enir   [kidbā   (*buy)   ziya   bišra]   retix
          mother   girl   VAL   cow   feed   wants
          'The mother wants the girl to (*indeed) feed the cow.'
     b.   [papɾus   (*ruy)   λisa]   žuka   yoλ
          cigarette VAL   smoke.INF   bad   is
          'To (*indeed) smoke is harmful.'

If the overt subject in our structure is in the embedded clause, it should not be able to precede the validator clitic. This prediction is confirmed by (17a). In addition, the entire infinitival clause can be followed by -*uy* as long as the second-position constraint is met, (17b). The data confirm that the overt subject is in the infinitival clause, which is a single constituent. Based on this evidence, we conclude that the logical subject of the embedded clause remains in that clause.

(17) a.   [kidbā   (*buy/*yuy)   ziya   bišra]   yoqsi
          girl   VAL   cow   feed   began
          'The girl began to (*indeed) feed the cow.'
     b.   [kidbā   ziya   bišra]   yuy   yoqsi
          girl   cow   feed   VAL   began
          'The girl indeed began to feed the cow.'

5.   Empty category subject of -*oqa*

Let us now turn to the third component of our proposal, (8c), that -*oqa* 'begin' has an empty category subject:

(18) EC_i [kidbā$_i$ ziya   bišra]   yoqsi
        EC.II.ABS   girl.II.ERG   cow   feed   II.began
        'The girl began to feed the cow.'

There are also several compelling arguments in support of this conclusion. The first comes from agreement, which motivated the proposal in (8). As we said earlier, agreement in Tsez is invariably with the absolutive NP. If there is an absolutive empty category in the matrix clause, the agreement is straightforwardly accounted for.

The second argument in favor of an empty category subject comes from reflexive binding. (19a, b) illustrate that Tsez reflexives are strictly local and cannot be bound from a lower clause (see also Comrie 2000).

(19) a.   enir   etin   [užā$_i$ nesā nesir$_i$ γutku   roda]
          mother   wanted   boy.I.ERG   REFL.I.DAT   house   build.INF
          'The mother wanted the boy to build a house for himself.'
     b.   *enir   nesā nesir$_i$ etin   [užā$_i$ γutku   roda]
          mother   REFL.I.DAT   wanted   boy.I.ERG   house   build.INF

If there were no empty category subject, the reflexive in the grammatical example in (20) should also be illicit, parallel to (19b). The well-formedness of (20) thus supports the existence of the empty category.

(20)   EC$_i$ nesā nesir$_i$ ø-oqsi   [yesi žek'ā$_i$ γutku   roda]
                    REFL.I.DAT   I-began   this   man.I.ERG   house   make
          'The man began for himself to build a house.'

The third argument for the presence of an empty category comes from question formation. As shown by (21a, b), objects and adjuncts in the infinitival complement of -*oqa* can be questioned:

(21) a.   kidbā   šebi   bišra   yoq-ā
          girl   **what**.ABS feed   begin-PAST.INTERR
          'What did the girl begin to feed?'
     b.   kidbā   ziya   neti   bišra   yoq-ā
          girl   cow   **when** feed   begin-PAST.INTERR
          'When did the girl begin to feed the cow?'

The embedded subject cannot be questioned however, (22a). This contrast can be accounted for by the presence of an empty category as follows. The Logical Form of the subject question in (22a) is (22b) after covert movement of the ergative *wh*-subject to a clause-peripheral scope position. (22b) is a strong crossover configuration (Condition C violation) in which the variable left behind by *wh*-movement is illicitly bound by the empty category. Consequently, (22a) is correctly predicted to be ungrammatical.

(22) a.   *λu   ziya   bišra   yoq-ā
          who.ERG cow   feed   begin-PAST.INTERR
          ('Who began to feed the cow?')
     b.   [$_{CP}$ λu$_i$ [$_{IP}$ EC$_i$ [t$_i$ ziya   bišra]   yoqā]]
              who.ERG   cow   feed   began

A final argument comes from the interpretation of depictives. Depictives such as *sisxoli* 'alone' restrict an NP which must be to the left of the depictive. (23a) is ambiguous because there are two NPs to the left of the depictive that it could modify. (23b) in contrast is unambiguous. Crucially, (23c) is ungrammatical because there is no NP to the left of the depictive for it to restrict.

(23) a. kidbā   ziya   sisxoli   bišersi
          girl.ERG   cow.ABS   alone   fed
          'The girl$_i$ alone$_i$ fed the cow.'
          'The girl fed the cow$_i$ alone$_i$.'
     b. kidbā   sisxoli   ziya   bišersi
          girl.ERG   alone   cow.ABS   fed
          'The girl$_i$ alone$_i$ fed the cow.'
          'The girl fed the cow$_i$ alone$_i$.'
     c. *sisxoli   kidbā   ziya   bišersi
          alone   girl.ERG cow.ABS   fed

Unlike (23c), (24) with -*oqa* and a clause-initial depictive is well-formed.
The contrast between (23c) and (24) follows if we recognize an empty
category to the left of the depictive, as shown. This empty category
supports the depictive. As a result, the sentence is grammatical and the
depictive is interpreted as modifying only the coindexed embedded subject
kidbā 'girl'.[3]

(24)   EC$_i$ sisxoli [kidbā   ziya   bišra]   yoqsi
                 alone   girl.ERG   cow.ABS   feed.INF   began
         'The girl alone began to feed the cow.'

        To conclude, agreement, reflexive binding, depictive orientation, and
question formation facts argue for the presence of an empty category subject
of -*oqa* 'begin' (see Polinsky to appear for additional argumentation).

6. Backward Subject Control

        The structure that we have argued for is repeated in (25):

(25)   EC$_i$ [kidbā$_i$ ziya   bišra]   yoqsi
         EC.II.ABS   girl.II.ERG   cow   feed   II.began
         'The girl began to feed the cow.'

(25) resembles the English Obligatory Control (OC) structure in (26) in
that it is a biclausal structure in which the two subject arguments are
coindexed and one is non-overt.

(26)   John$_i$ tried [EC$_i$ to leave]

Indeed, the parallel is remarkably complete in that the -*oqa* 'begin' structure
evidences two further characteristics of OC: i) the coindexed interpretation
is obligatory, and ii) the empty category does not alternate with an overt
NP. The options in (27) are ungrammatical, supporting characteristic i):

(27)   *pro/uži/užā$_k$ [kidbā$_i$ ziya bišra] oqsi
         pro/boy.ABS/boy.ERG   girl   cow   feed   began
         ('He/the boy began to have the girl feed the cow.')

In addition, the empty category of (25) does not alternate with an overt NP:

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3.   The limits of the paper do not allow us to discuss whether or not the empty
category might be an expletive. The depictive facts suggest that this proposal is
untenable since expletives do not support a depictive.

(28)   *ža/kid$_i$ [neλā$_i$ ziya   bišra]   yoqsi
         3SG.ABS/girl.ABS   she. ERG `cow   feed   began
         ('The girl began to feed the cow.')

The non-canonical property of *-oqa* is that the hierarchical relationship
between the overt NP and the empty category is reversed in comparison to
the OC structure in (26). The higher NP controller is obligatorily non-
overt. For this reason, we refer to this structure as Backward Control, in
contrast to Forward Control. Thus, *-oqa* is a Backward Subject Control
verb.[4]

     In the next two sections we explore possible analyses of BC within
Principles and Parameters theory (section 6) and the Minimalist Program
(section 7).

7.   A Principles and Parameters analysis

     The fundamental theory-internal question in the analysis of BC
concerns the identity of the empty category. Within P&P, the empty
category subject in Control structures is PRO, as illustrated in (29).
Accordingly, the Tsez BC structure in (25) receives the analysis in (30).

(29)   John$_i$ tried [PRO$_i$ to leave]

(30)   PRO$_i$ [kidbā$_i$ ziya   bišra]   yoqsi
                   girl.ERG   cow.ABS   feed   began

     The PRO analysis of OC is driven and regulated by the following
theoretical assumptions (following Chomsky and Lasnik 1993):

(31) a.   each contentful NP receives exactly one θ-role and each θ-role is
           assigned to exactly one contentful NP (Theta Criterion)
      b.   PRO must be bound for a referential interpretation
      c.   PRO is assigned Null Case

The presence of PRO is required by the Theta Criterion, (31a). Since the
number of contentful NPs must equal the number of θ-roles, a distinct NP
is required in the embedded clause to receive the external θ-role of the
embedded verb. Control Theory governs the interpretation of PRO. PRO
must have a c-commanding antecedent to receive a referential interpretation.
Thus (31b) accounts for the interpretation of (29) in which John is the agent
of both *try* and *leave*. We assume that when PRO has no c-commanding
antecedent the arbitrary interpretation of PRO occurs (PRO$_{arb}$). Finally,
Case Theory restricts the distribution of PRO. According to (31c), PRO
bears Null Case. PRO does not alternate with an overt NP and occurs in
limited positions because only it is capable of bearing Null Case.

     The structure in (30) is incompatible with these assumptions. First, the
agreement facts discussed above indicate that the empty category in (30) is
assigned absolute Case, not Null Case. Maintaining assumption (31c)

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4.   Kuroda (1965: 178-193) documents Backward Subject Control (so-called
Counter-Equi) in Japanese potential constructions and constructions with some
psych-verbs. Backward Object Control has been documented for Brazilian
Portuguese (Farrell 1995) and Japanese (Harada 1973; Kuroda 1965, 1978).

would deprive the analysis of the ability to account for the basic agreement pattern. The second problem concerns (31b). PRO is not bound in (30) but it nevertheless requires the coindexed interpretation. The arbitrary interpretation (*Someone began to have the girl feed the cow*) is impossible for (30). (32) illustrates that the arbitrary interpretation of PRO is otherwise available in Tsez:

(32)   [PRO$_{arb}$ paprus   λis-a]   žuka   yoλ
                        cigarette   smoke-INF   bad   is
         'To smoke is harmful.'

A final difficulty with the structure in (30) is that it instantiates a Condition C violation. The r-expression *kidbā* 'girl' is not free. Nonetheless, the example is grammatical.

These arguments indicate that the PRO analysis of BC is untenable. Since none of the arguments is particular to Tsez, they indicate that P&P theory quite generally rules out the possibility of BC, predicting that BC should not exist in natural language. At this point, there are two possibilities. First, we could admit that we have misanalyzed the Tsez construction. Although this is always a possibility, we believe that our interpretation of the facts in sections 3 through 6 is too compelling and cohesive to discount. The second possibility is to modify the theoretical apparatus. A number of researchers working within the Minimalist paradigm have taken up this task quite independently of our concerns. In the next section we explore Hornstein's (1999) Minimalist reinterpretation of OC and suggest that it more readily permits the existence of BC.

8.   A Minimalist analysis

8.1.   Forward Control

Hornstein 1999 rejects the P&P analysis of OC inherent in (31) on conceptual and empirical grounds. In its place he develops a Minimalist alternative which reduces OC to movement (see also the proposals in O'Neil 1995 and Manzini and Roussou 1999). His analysis, which we lay out here, relies on the Minimalist assumptions in (33).

(33) a.   movement is driven by feature checking
      b.   features can be strong or weak
      c.   θ-roles are features
      d.   an NP "receives" a θ-role by checking the θ-feature of a verb that it merges with
      e.   there is no upper bound on the number of θ-roles a chain can have (no Theta Criterion)

(33a, b) follow Chomsky 1995 and much Minimalist Program work in taking feature checking as the force behind movement. Movement operations are driven by the need to check grammatical features. Since languages differ with respect to whether movement takes place overtly or covertly, Chomsky divides features into two types: strong and weak. Strong features must be checked prior to Spell-Out because they are illegitimate PF objects and cause a derivation to crash. Elements bearing

strong features thus move overtly. Weak features are in some sense "invisible" at the PF interface and do not cause the derivation to crash. The economy principle Procrastinate thus demands that weak features will be checked as late as possible in the derivation and elements bearing weak features move covertly (Chomsky 1995:chapter 3, and Lasnik 1999 for insightful discussion).

In order to implement θ-role assignment, Hornstein 1999 adopts the proposal that θ-roles are features, (33c). A noun phrase is assigned a θ-role by checking the corresponding θ-feature of the predicate, (33d). In part following other work (Brody 1993, Bošković 1994, Chomsky 1995), Hornstein eliminates the P&P Theta Criterion, (31a), as non-Minimalist. Eliminating the Theta Criterion removes the stipulation that a contentful NP bears exactly one θ-role. Under Minimalist assumptions, an NP is now permitted to bear more than one θ-role. This can be achieved by movement into a θ-position, an operation that was also impossible under P&P assumptions. Under Hornstein's analysis, the English Forward Control example in (34) receives the derivation in (35), where traces are shown as copies. Relevant checked features are shown below the DPs.

(34)   Sue hopes to leave.

(35) $[_{TP}$ Sue $[_{VP}$ Sue hopes $[_{TP}$ Sue to $[_{VP}$ Sue leave]]]]
          CASE/EPP θ_{hope} EPP θ_{leave}

The derivation in (35) proceeds from right to left as follows. First the NP *Sue* merges with the embedded verb *leave* and checks its external θ-role feature. *Sue* then moves to the embedded subject position to check the strong D-feature of infinitival T°, satisfying the EPP. The novel part of Hornstein's analysis is that the NP then moves into the matrix clause, first to the specifier of the matrix VP to check *hope*'s external θ-role feature, and then to the matrix spec,TP to satisfy the EPP there and to check Case.

8.2.   Backward Control

The movement analysis of OC provides an interesting account of the pattern that we have documented. The BC structure that we need to account for is repeated in (36).

(36)   EC$_i$ [kidbā$_i$ ziya   bišra]   yoqsi
          EC.II.ABS   girl.II.ERG   cow   feed   II.began
          'The girl began to feed the cow.'

Our crucial assumption for obtaining the BC pattern is given in (37). The distinction between Forward Control and Backward Control reduces to whether the control verb's external θ-role is checked overtly or covertly.

(37)   *-oqa* 'begin' has a weak external θ-role feature

The proposed derivation consists of two parts, the overt, pre-Spell-Out derivation in (38) and the covert, post-Spell-Out derivation in (39) below. The structures are shown with head-final projections and English words.

(38) $[_{TP}$ $[_{VP}$ $[_{TP}$ girl $[_{VP}$ girl cow   feed]] begin]]
                              EPP/CASE θ_{feed}

In the overt derivation, (38), the NP *girl* merges with the embedded V' *feed the cow* and checks the external θ-role feature of *feed*. It then moves to the embedded spec,TP to satisfy the EPP and check its ergative Case feature. There is no overt movement after this point. The infinitival clause then merges with the verb *begin* as its complement. Finally, T° merges with the VP. Spell-Out applies (we will return to the unfilled matrix subject position, an apparent violation of the EPP, in the next section).

The covert derivation continues in (39).

(39)   [$_{TP}$ girl [$_{VP}$ [$_{TP}$ girl [$_{VP}$ girl cow feed]] girl begin]]
              CASE/EPP   CASE/EPP   θ$_{feed}$ θ$_{begin}$

Post-Spell-Out, the NP *girl* moves into the matrix clause. It first moves into the specifier of VP to check *begin*'s external θ-role feature. It then moves to spec,TP to satisfy the EPP. Given the agreement facts, it also checks absolute Case (we discuss the apparent multiple Case checking in the next section). Assuming a copy theory of movement, we arrive at the LF in (40).

(40)   kidbā$_i$ [kidbā$_i$ ziya   bišra]   yoqsi
         girl.II.ABS   girl.II.ERG   cow   feed   II.began

This is fundamentally the desired structure in (36). Forward Control and Backward Control structures are identical at LF and differ only in where the overt NP is at Spell-Out. This suggests why the Tsez construction has all the properties of OC: it has the same derivation under Hornstein's analysis once LF is taken into account. In the next subsection we more carefully step through the desirable consequences of the analysis.

8.3.   Consequences

The movement analysis of BC accounts for the construction's characteristics, repeated in (41). These properties are a consequence of -*oqa*'s weak θ-role.

(41) a.   -*oqa* has a thematic subject
      b.   the logical subject of complement verb remains in lower clause
      c.   the subject of -*oqa* is a coindexed empty category

Oqa has a thematic subject, (41a), because it has an external θ-role feature, even though it is weak. This accounts for the idiom facts and selectional restrictions in section 3. At Spell-Out, however, -*oqa* has no structural subject. The NP that will come to check the external θ-role feature remains in the complement clause, (41b). This derives the surface-oriented syntactic observations in section 4 that show that the complement clause contains the overt subject at Spell-Out. At LF, -*oqa* does have a syntactic subject which can participate in LF syntax. This captures the additional syntactic facts in section 5: agreement, licensing of reflexives, and depictive interpretation are done at LF.[5] The weak θ-role feature also accounts for the OC properties from section 6. First, an overt subject of -*oqa* and Forward Control are

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5.   Dominque Sportiche points out that the strong crossover fact receives no explanation under this account.

impossible, (28), because a weak θ-role feature must not be checked pre-Spell-Out according to Procrastinate. The subject of *-oqa* will thus never be overt. Second, the coindexed, control interpretation in (27) is required because no lexical material can be introduced during the covert derivation (Chomsky 1995: chapter 3). The weak θ-role feature must be checked in the covert syntax by an NP that was merged into the derivation overtly. Lastly, the Condition C violation that was problematic for the PRO analysis in P&P does not arise because Condition C does not govern the distribution of members of a movement chain. We thus conclude that, despite other potential difficulties (Brody 1999), the movement analysis of Control is surprisingly successful in handling Tsez BC.

8.4.   Unresolved issues

Two analytical issues remain unresolved from the movement analysis of BC: the apparent EPP violation in the subject position of *-oqa* and multiple Case checking on the raised NP. While we cannot solve these problems here, we would like to mention some potential approaches.

First, it is evident from the overt portion of the BC derivation that the subject position in the *-oqa* clause is unfilled at Spell-Out. This translates into an EPP violation, an unchecked strong D-feature of T°. In order for the derivation to converge, this feature must be checked by some other means or a principled reason for why it is not strong, and need not be checked overtly, needs to be found. We will simply suggest a number of alternatives and leave the issue for future research: 1) following McCloskey 1996 and Alexiadou and Anagnostopoulou 1998, the verb *-oqa* is exceptional in being able to check the strong feature via movement to T° and so no XP movement to spec,TP is necessary, 2) if movement is a copy-and-delete strategy, then BC may have exactly the same derivation as Forward Control and differ only in that the lower rather than the higher copy is pronounced, 3) the specifier of TP position of the *-oqa* clause is filled by an expletive (but see footnote 3), and 4) there is no EPP in Tsez.

The second complication in the above derivation is that the overt NP checks Case twice. It checks Case appropriate for the lower clause subject position, as is evidenced by the morphology, and then raises to the *-oqa* clause where it checks absolutive Case and triggers agreement on *-oqa*. Multiple Case checking is not a phenomenon particular to the Tsez BC construction. Assuming that infinitivals in Tsez check Case on their subject, the Tsez raising and Forward Control constructions in (42) illustrate the same problem.

(42) a.   kid$_i$ [t$_i$ ziya   bišra]   y-oqsi
            girl.II.ABS   cow.ABS feed.INF   II-began
            'The girl began to feed the cow.'
     b.   kidbā   [PRO   ziya   bišra]   roži   roys
            girl.ERG   cow.ABS feed.INF   word   made
            'The girl promised to feed the cow.'

Furthermore, multiple Case checking is documented in numerous other languages (see Bejar and Massam 1999 for an overview and analysis). We conclude that multiple Case checking is an orthogonal problem.

9.   Conclusion

In this paper, we have argued that the Tsez verb -*oqa* 'begin' participates in a Backward Subject Control structure repeated in (43).

(43) EC_i [kidbā$_i$ ziya bišra] yoqsi
          EC.II.ABS   girl.II.ERG   cow   feed   II.began
          'The girl began to feed the cow.'

A series of empirical arguments support the central claims of this structure: the subject of the embedded clause is overt and the subject of the verb -*oqa* 'begin' is a coindexed thematic empty category.

A central question raised by our proposal is whether syntactic theory should allow BC. If no, we suggested the Principles and Parameters framework (Chomsky and Lasnik 1993) rules it out. On the other hand, if our analysis of Tsez is on the right track then it argues for a syntactic theory that permits BC. We suggested that a Minimalist-based movement analysis of OC (Hornstein 1999) allows the construction. This is desirable if Tsez indeed instantiates the BC possibility.

Given that a Minimalist analysis permits Backward Control, a question arises as to why this pattern does not occur more often in natural languages. Although more work is needed to answer this question in full, we have two considerations to offer. First, a weak external θ-role feature (as in (37)) is ostensibly a marked option, which should limit BC's cross-linguistic occurrence. Second, it is possible that other languages do have BC and it simply has not been documented. Aside from Tsez, we are aware of at least one other Nakh-Daghestanian language where BC is attested, Tsaxur (Kibrik 1999: 492-514). It is possible that the recognition of BC as a theoretical option would lead to its discovery in other languages.

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