

# Backward Raising

Eric Potsdam and Maria Polinsky

**Abstract.** This paper documents and analyzes an instance of covert A-movement, specifically covert subject-to-subject raising, in the Northwest Caucasian language Adyghe. We argue that Adyghe has a subject-to-subject raising construction in which the subject of an unaccusative verb's complement clause undergoes A-movement into the matrix clause, but it does so covertly. We refer to this phenomenon as *backward raising*. True backward raising is distinguished from apparent cases that have similar agreement patterns but do not show any of the other evidence for movement found in the Adyghe construction. We illustrate the contrast between true and apparent backward raising by comparing Adyghe to Greek. The existence of backward raising helps to adjudicate between various theories of covert movement. It supports a theory in which covert movement involves actual phrasal movement. Covert movement cannot be reduced to a long-distance feature-matching relation such as Agree (Chomsky 2000). Linguistic theory thus needs to incorporate both mechanisms.

## 1. Introduction

*Covert movement* (Huang 1982, May 1985, and numerous others) refers to displacement operations in the grammar that have syntactic and semantic consequences but no visible phonological reflex.<sup>1</sup> In the domain of A'-movement, there are covert analogues of most overt movement phenomena: covert *wh*-movement (Srivastav 1991, Pesetsky 2000, Simpson 2001, Richards 2001, among others), covert scrambling (Mahajan 1990, 1997; Saito 1992; Nemoto 1993; Kawamura 2004; Cable 2007, 2008), and covert topicalization (Bayer 1996, Polinsky & Potsdam 2001), to name a few. In the domain of A-movement, however, the picture is rather different. Overt A-movement phenomena such as subject-to-subject raising, passive, and unaccusative advancement are robustly attested crosslinguistically; however, clear cases of covert A-movement are rare. The goal of this paper is to document and analyze an instance of covert A-movement, specifically subject-to-subject raising (SSR), in the Northwest Caucasian language Adyghe. We will argue that the example in (1) is a subject-to-subject raising construction in which the subject of the

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<sup>1</sup> As discussed by Richards (2001:3), movement of phonologically null syntactic objects does not automatically qualify as covert movement. We exclude such operations from consideration here.

complement clause undergoes covert A-movement into the matrix clause, as schematized with the crossed-out copy of movement. We call this *backward raising* (BR). It is the covert analogue to the overt subject-to-subject raising derivation in (2), which is also available.<sup>2</sup>

- (1) a-xe-r [a-xe-me se s-a-š'e-new]  
 DEM-PL-ABS DEM-PL-ERG.PL 1SG.ABS 1SG.ABS-3PL.ERG-lead-INF  
 ø-fjež'a-ke-x.  
 3ABS-begin-PAST-3PL.ABS  
 'They began to lead me.'
- (2) a-xe-r [~~a-xe-me~~ se s-a-š'e-new]  
 DEM-PL-ABS DEM-PL-ERG 1SG.ABS 1SG.ABS-3PL.ERG-lead-INF  
 ø-fjež'a-ke-x  
 3ABS-begin-PAST-3PL.ABS  
 'They began to lead me.'

The paper is organized as follows. Section 2 introduces the basics of Adyghe grammar and the subject-to-subject raising construction. We then present our structural proposal for examples like (1). The central properties of the construction are (i) the relevant verbs are unaccusative, (ii) the verbs select for a complement clause, thus making the construction biclausal, (iii) the overt subject is in the complement clause, and (iv) there is nevertheless a silent copy of the embedded subject in the matrix clause. Section 3 provides evidence for these claims and argues against plausible alternatives. We formalize an analysis of backward raising at the end of section 3 using movement to relate the two subject positions. Section 4 presents an account of the alternation in (1) and (2) and the claim of covert movement. It also discusses the implications of BR for the general modeling of covert movement. Section 5 considers BR in a larger crosslinguistic context. We look at an apparently similar case in Greek and conclude that it is not an instance of BR.

## 2. Raising in Adyghe

Adyghe is a Northwest Caucasian language spoken by approximately 500,000 people in Russia, Turkey, Iraq, and Syria (Lewis 2009). It is most closely related to Kabardian; together the two languages are often called Circassian (Smeets 1984, Colarusso 1992). Typologically, Adyghe is head-final with SOV basic word order. In matrix clauses, constituent order is relatively free; however, embedded clauses are

<sup>2</sup> We use the following abbreviations in glossing: 1/2/3—person, ABS—absolutive, APPL—applicative, DEM—demonstrative, DIR—directional, ERG—ergative, FEM—feminine, IMP—imperative, INF—infinitive, INSTR—instrumental, IO—indirect object, LOC—locative, NEG—negation, NON-SPEC—nonspecific, OBL—oblique, POSS—possessive, PRES—present, REFL—reflexive, SBJV—subjunctive, SG/PL—number. Our transcription follows the convention adopted by Smeets (1984:111), with minor modifications: the subscript *w* indicates labialization, the lowered dot indicates velarization. The same transcription is currently used by Russian researchers working on the language, such as Arkadiev et al. (2009).

normally verb-final. Adyghe has extensive *pro*-drop for both subjects and objects. The dialect described here is Temirgoy, which is close to the standard.

The morphological case system is ergative-absolutive (Smeets 1984; Kumaxov, Vamling & Kumaxova 1996), although, for pronouns, only third-person forms, which are strictly speaking demonstratives, show this distinction. In first and second persons, there is syncretism of the ergative and absolutive. The ergative and absolutive morphemes for nonpronominals are *-m* 'ERG' and *-r* 'ABS'; these are case markers merged with the specificity article *-r*. Ergativity is solely morphological, however, in that the (ergative) subject is structurally superior to the (absolutive) object for purposes of binding, control, and coreference across clauses.

The verbal agreement paradigm is very complex. Verbs show agreement with the ergative and absolutive in person and number (Smeets 1984:chap. 5, Arkadiev et al. 2009; see also Colarusso 1992 for Kabardian, and O'Herin 2002 for Abaza, where the agreement systems are similar). The ergative marker is adjacent to the root/stem, whereas the absolutive occurs on the left edge of the verb complex. There is also optional agreement in number between the verb and the absolutive. This optional agreement suffix is *-ex* '3PL.ABS'. Examples illustrating these morphological patterns are in (3), with the agreement markers boldfaced.

- (3) a. a-xe-me      se      **s-a-š'**e  
       DEM-PL-ERG 1SG.ABS **1SG.ABS-3PL.ERG**-lead  
       'They are leading me.'  
       b. thape-xe-r    ø-pəzə-**κ-(ex)**  
       leaf-PL-ABS **3ABS-fall-PAST-3PL.ABS**  
       '(The) leaves fell down.'

Most two-place verbs take an ergative subject and an absolutive object, but there is also an extensive class of so-called middles that take an absolutive subject and an oblique object (Arkadiev & Letuchiy 2008). The form of the oblique is homophonous with the ergative, but the two forms can be distinguished by their distribution and agreement properties.

For our purposes, a number of Adyghe verbs behave like English SSR predicates: *f(j)ež'en* 'begin', *wəblen* 'begin, start', *wəxən* 'stop, be over' (Say 2004, Kumaxov & Vamling 1998), *χ<sub>w</sub>ən* 'become, turn out to', and *qəčəč'en* 'happen to'.<sup>3</sup> They are unaccusative verbs (4a) and have no transitive or middle uses (4b,c).

- (4) a. aš'            jə-ʔ<sub>w</sub>ef            ø-fjež'aκ  
       DEM.OBL 3SG.POSS-work.ABS 3ABS-began  
       'His work began.'

<sup>3</sup> The two latter verbs project a more complicated picture: according to our consultants, they have properties of BR verbs, but the speakers described by Testelefs (2009) do not show that pattern, so there may be speaker/dialectal variation involved here. The verbs are morphologically defective for all the speakers and do not co-occur with prefixes (Testelefs 2009:687–689). This morphological deficiency may be the reason for the dialectal variation we find, and further work is needed.

- b. \*aš'      ʔ<sub>w</sub>efə-r      ø-ə-fjež'aŋ  
 DEM.ERG work-ABS 3ABS-3SG.ERG-began  
 Intended: 'He began the work.'
- c. \*ar      ʔ<sub>w</sub>efə-m      ø-jə-fjež'aŋ  
 DEM.ABS work-OBL 3ABS-3OBL-began  
 Intended: 'He began (the) work.'

These verbs also take a clausal complement with the embedded verb appearing in a nonfinite form. When the embedded verb is transitive, its subject can be either absolutive or ergative (5). Regardless of case marking, however, the matrix verb shows agreement (boldfaced) with the subject as though it were absolutive. Ergative agreement is impossible, as (5a) shows.

- (5) a. a-xe-me      pjəsmə-r      a-txə-new  
**DEM-PL-ERG** letter-ABS 3PL.ERG-write-INF  
 ø-fjež'a-ŋe-x/\*a-fjež'a-ŋ  
 3ABS-begin-PAST-3PL.ABS/3PL.ERG-begin-PAST
- b. a-xe-r      pjəsmə-r      a-txə-new      ø-fjež'a-ŋe-x  
**DEM-PL-ABS** letter-ABS 3PL.ERG-write-INF 3ABS-begin-PAST-3PL.ABS  
 'They began to write a letter.'

The analysis of (5b) is straightforward. It has a subject-to-subject raising syntax in which the subject raises from the complement clause, as in English. The subject is absolutive because the raising verb is intransitive:

- (6) a-xe-r<sub>i</sub>      [**a-xe-me**<sub>i</sub>      pjəsmə-r      a-txə-new]  
 DEM-PL-ABS DEM-PL-ERG letter-ABS 3PL.ERG-write-INF  
 ø-fjež'a-ŋe-x  
 3ABS-begin-PAST-3PL.ABS  
 'They began to write a letter.'

The analysis of (5a) is the challenge we address in this paper. It is unusual for the fact that the subject is ergative but the matrix verb shows agreement with it as though it were an absolutive matrix subject. We will defend an analysis of (5a) in which the ergative subject is still in the embedded complement clause and has a silent absolutive representation in the matrix clause. Given that the verb is nevertheless unaccusative, the higher representation of the subject is nonthematic and we will maintain that the relationship between the two subjects is one of movement. The embedded subject raises covertly into the matrix clause—a state of affairs that we call *backward raising* (BR).

- (7) **a-xe-r**<sub>i</sub>      [**a-xe-me**<sub>i</sub>      pjəsmə-r      a-txə-new]  
 DEM-PL-ABS DEM-PL-ERG letter-ABS 3PL.ERG-write-INF  
 ø-fjež'a-ŋe-x  
 3ABS-begin-PAST-3PL.ABS  
 'They began to write a letter.'

Because of the raising syntax, the agreement pattern and numerous other facts fall into place, as we will show. The following section supports the main claims of our analysis, which are listed in (8).

- (8) a. The relevant verbs are unaccusative.  
b. The construction is biclausal.  
c. The case of the subject reflects its clause membership.  
d. Both constructions have a syntactic representation of the raised DP in the matrix clause.

First, the relevant verbs are unaccusative (8a). They do not assign an external  $\theta$ -role, which allows them to participate in a raising syntax. Second, the construction is truly biclausal in that the relevant verbs select a complement clause (8b). There is neither clause union nor complex predicate formation. Third, the position of the subject alternates between the matrix clause and the embedded clause, and this is reflected in its case marking (8c). When the subject is ergative, it is in the embedded clause. When the subject is absolutive, it is in the matrix clause.<sup>4</sup> Fourth, regardless of the pronounced position of the subject, there is a syntactic representation of this subject in the matrix clause (8d). This is a crucial component of the BR analysis. Given that the ergative DP is in the embedded clause, we are claiming that there is a second, silent representation of the subject in the higher clause as well.

### 3. Evidence for Backward Raising

### 3.1 Thematic Structure

Evidence that the relevant verbs do not assign an external  $\theta$ -role comes from traditional sources: lack of selectional restrictions, idiom chunks, and lack of imperative formation. Cumulatively, the data indicate that the verbs do not place any semantic restrictions on their surface subject, consistent with there being no  $\theta$ -role coming from these verbs.

The data in (9) and (10) show that the subject may bear a range of semantic roles determined by the embedded verb. In (9), the subject is an experiencer; in (10), the subject is a theme, and in (11), the subject is an expletive. The earlier examples in (5) show that the subject can also be an agent.

- (9) se wered-x-r zexe-s-xə-n-x-ew s-jež'e  
 1SG song-PL-ABS PREVERB-1SG.ERG-hear-INF-PL-INF 1SG.ABS-begin.PRES  
 'I begin to hear (the) songs.'
- (10) thape-xe-r pəzə-new jewəxə-ke-x  
 leaf-PL-ABS fall-INF stop-PAST-3PL  
 '(The) leaves stopped falling.'

<sup>4</sup> If the embedded verb were intransitive, the subject would always be marked absolutive, which would result in a structurally ambiguous string.

- (11) *e wəčəʔə-new jewəble*  
 get\_cold-INF start.PRES  
 ‘It starts getting cold.’

Idiom chunks can also appear as the subject of these verbs. Examples (12a) and (13a) illustrate idioms with an intransitive and a transitive verb, respectively. In the (b) examples, these idioms are embedded under the relevant predicates and retain the idiomatic reading, even with an idiom chunk as the matrix subject.

- (12) a. *ə-pe                      χ<sub>w</sub>əzə-r              qərjexə*  
 3SG.POSS-nose smoke-ABS blows  
 Lit. ‘Smoke is coming out of his/her nose.’  
 ‘S/He is furious.’
- b. *ə-pe                      χ<sub>w</sub>əzə-r              qərjexə-new fježʔaḥ*  
 3SG.POSS-nose smoke-ABS blow-INF began  
 Lit. ‘Smoke began to be coming out of his/her nose.’  
 ‘S/He began to be furious.’
- (13) a. *pčənə-m      šəne                                      q-ə-λfə-r-ep*  
 goat-ERG lamb.ABS.NON-SPEC DIR-3SG.ERG-give\_birth-PRES-NEG  
 Lit. ‘A goat cannot give birth to a lamb.’  
 ‘There are no miracles.’
- b. *pčənə-m/?pčənə-r      šəne              q-ə-mə-λfə-new*  
 goat-ERG/goat-ABS lamb.ABS DIR-3SG.ERG-NEG-give\_birth-INF  
*jəwəble/χ<sub>w</sub>ə-ḫe*  
 start.PRES/turn\_out-PAST  
 Lit. ‘A goat starts/turned out to not give birth to a lamb.’  
 ‘No miracles start happening.’/‘There turned out to be no miracles.’

Perlmutter (1970) uses the inability to form imperatives as a diagnostic for the absence of an external  $\theta$ -role. Imperatives typically require that the external argument be assigned an agent semantic role by the imperative predicate. Verbs that do not assign an external  $\theta$ -role are incompatible with this requirement. As expected, the relevant Adyghe predicates do not form imperatives:<sup>5</sup>

- (14) a. *\*mašjəne p-šəžʔə-new      fježʔ/weble/wexə!*  
 car 2SG.ERG-fix-INF begin/start/stop.IMP  
 ‘Begin/start/stop fixing the car!’
- b. *\*qəčəčʔə/χ<sub>w</sub>ə!*  
 happen/turn\_out.IMP  
 ‘Happen/Turn out!’

<sup>5</sup> Unlike in Adyghe, *begin* in English can be used in an imperative because it is ambiguous between a raising and a control verb (Perlmutter 1970).

We conclude that the relevant Adyghe verbs are raising predicates with no external argument.

### 3.2 Bicausality

The syntax of the relevant predicates that we are defending is repeated in (15). It requires that the subject raise from one clausal domain to another, with a representation in both clauses.

- (15) (a-xe-r) [(a-xe-me) se s-a-š'e-new]  
 DEM-PL-ABS DEM-PL-ERG 1SG.ABS 1SG.ABS-3PL.ERG-lead-INF  
 ø-fjež'aŋe-x  
 3ABS-began-3PL.ABS  
 'They began to lead me.'

An alternative that one might propose, particularly for the ergative case-marked subject, is a clause-union structure in which the raising verb and the embedded verb form a kind of complex predicate. The overt subject would have a single representation, serving as the subject of this complex predicate:

- (16) a-xe-me se [s-a-š'e-new ø-fjež'aŋe-x]  
 DEM-PL-ERG 1SG.ABS 1SG.ABS-3 PL.ERG-lead-INF 3ABS-began-3PL.ABS  
 'They began to lead me.'

We are led to reject this alternative in favor of the clausal organization in (15) given evidence that the embedded verb constitutes its own clausal domain and does not form a single clausal domain with the raising verb. Evidence for bicausality comes from negation and event structure modification, which we take to be properties of clauses. We assume that complex predicates constitute a single negation and event domain (Butt 1995, Wurmbrand 2001, Müller 2002). Further evidence for bicausality comes from clause-bound negative polarity item (NPI) licensing.

The examples in (17) show that the two verbs may be independently negated.

- (17) a. [a-xe-me ?wəf a-ŋe-new] fjež'aŋe-ep  
 DEM-PL-ERG work.ABS 3PL.ERG-do-INF begin-NEG  
 'They did not begin to work.'  
 b. [a-xe-me ?wəf a-mə-ŋe-new] fjež'aŋ(e-x)  
 DEM-PL-ERG work.ABS 3PL.ERG-NEG-do-INF begin-PL  
 'They began to not work.'

Example (18) uses event quantification data to show that each verb represents a distinct event. The adverbial *twice* ‘twice’ can modify the matrix event or the embedded event yielding the two, distinct interpretations.<sup>6</sup>

- (18) a. [mašjəne-r depqə-m jewe-new] **twice** χ<sub>wə</sub>-ke  
 car-ABS wall-OBL hit-INF **twice** turn\_out-PAST  
 ‘The car twice turned out to hit the wall.’  
 b. [mašjəne-r depqə-m **twice** jewe-new] χ<sub>wə</sub>-ke  
 car-ABS wall-OBL **twice** hit-INF turn\_out-PAST  
 ‘The car turned out to twice hit the wall.’
- (19) a. [čale-m pceqəntfə-r xjəza-new] **twice** fjež’aḵ  
 lad-ERG fishing line-ABS throw-INF **twice** began  
 ‘The young man twice began to cast a/the fishing line.’ (two beginnings)  
 b. [čale-m pceqəntfə-r **twice** xjəza-new] fjež’aḵ  
 lad-ERG fishing line-ABS **twice** throw-INF began  
 ‘The young man began to cast a/the fishing line twice.’ (two throws)

Clause-bound phenomena also support the existence of two clauses. Negative polarity item (NPI) licensing is local in Adyghe, to the extent that we have been able to determine. That is, an NPI must appear in the same minimal clause as the negative morpheme. For example, the NPI ‘any answer’ is licensed by clausemate negation in (20a,b). The example in (20c) is ungrammatical because the NPI is in the embedded clause; however, negation is in the matrix clause.<sup>7</sup>

- (20) a. a-š’ zje žewap r-jə-təžə-**κ-ep**  
 DEM-ERG any answer 3SG.IO-3SG.ERG-give\_back-PAST-NEG  
 ‘S/he did not give any answer.’  
 b. a-r [zje žewap r-jə-**mə**-təže-new]  
 DEM-ABS any answer 3SG.IO-3SG.ERG-NEG-give\_back-INF  
 məš’əne  
 be\_afraid.PRES  
 ‘S/he is afraid to not give any answer.’  
 c. \*/?a-r [zje žewap r-jə-təže-new] š’anər-**ep**  
 3SG.ABS any answer 3SG.IO-3SG.ERG-give\_back-INF be\_afraid-NEG  
 ‘S/he is not afraid to give any answer.’

<sup>6</sup> An anonymous reviewer points out that monoclausal complex predicates may still be bi-eventive, as in the analysis of Japanese causatives in Matsumoto 1996 and Manning, Sag & Iida 1996. If this turns out to be correct and appropriate for complex predicates beyond causatives (and beyond Japanese), then this argument may not go through for Adyghe.

<sup>7</sup> Adyghe has indeterminate expressions that combine with different particles to produce NPIs and quantifiers. Arkadiev et al. (2009:14, 86) and Kapitonov (2010) discuss the morphology of NPIs, indefinites, and universal quantifiers, which appear below.



With the raising construction under consideration, negation on either the matrix verb, (21a), or the embedded verb, (21b), licenses an NPI in that clause. In the following examples, the NPI is a locative. The clause containing the NPI is transparently indicated by the predicate that bears the locative applicative marker, which serves to license the locative argument.

- (21) a. [a-xe-me      ?<sub>wəf</sub>      a-ʃe-new]      **zjəmja**  
          DEM-PL-ERG work.ABS 3PL.ERG-do-INF **anywhere**  
          š'ə-fjež'a-ɛ-ep  
          LOC\_APPL-begin-PAST-NEG  
          'They did not begin to work anywhere.'  
          Intended: 'There was no place where they began to be working.'
- b. [a-xe-me      **zjəmja**      ?<sub>wəf</sub>      š'-a-mə-ʃe-new]  
          DEM-PL-ERG.PL **anywhere** work.ABS LOC\_APPL-3PL.ERG-NEG-do-INF  
          fjež'a-ɛ-x  
          begin-PAST-PL  
          'They began to not work anywhere.'

Negation in the embedded clause does not license an NPI in the matrix clause, (22a), and negation in the matrix clause does not license an NPI in the embedded clause, (22b), because of the clause-boundedness of the licensing. The pattern follows if the construction is biclausal, as indicated. If the construction instantiated clause union, the NPI should plausibly be licensed in the single clause regardless of the position of negation.

- (22) a. \*[a-xe-me      ?<sub>wəf</sub>      a-mə-ʃe-new]      **zjəmja**  
          DEM-PL-ERG work.ABS 3PL.ERG-NEG-do-INF **anywhere**  
          š'ə-fjež'a-ɛ-x  
          LOC\_APPL-begin-PAST-PL
- b. \*[a-xe-me      **zjəmja**      ?<sub>wəf</sub>      š'-a-ʃe-new]  
          DEM-PL-ERG **anywhere** work.ABS LOC\_APPL-3PL.ERG-do-INF  
          fjež'a-ɛ-ep  
          begin-PAST-NEG

We conclude that relevant verbs should not be analyzed as involving complex predicate formation. Instead, they select for a clausal complement and yield a biclausal construction.

### 3.3 Structural Organization

In several of the structures shown above, we have assumed that the ergative and absolutive subjects in the raising construction occupy different structural positions, with the absolutive being in the matrix clause and the ergative being in the embedded clause:

- (23) a. [a-xe-me      pjəsmə-r    a-txə-new]      ø-fjež'a-ɤe-x  
           DEM-PL-ERG    letter-ABS    3PL.ERG-write-INF    3ABS-begin-PAST-3PL.ABS  
       b. a-xe-r      [pjəsmə-r    a-txə-new]      ø-fjež'a-ɤe-x  
           DEM-PL-ABS    letter-ABS    3PL.ERG-write-INF    3ABS-begin-PAST-3PL.ABS  
           'They began to write a letter.'

This conclusion is supported by the case-marking pattern as well as subject NPI licensing.

If the clause membership is as shown in (23), we can make sense of the case-marking on the subject. It simply bears the case appropriate for the syntactic domain in which it appears. This is typical of A-movement and structural case. Case is largely a surface phenomenon and elements that undergo A-movement show case morphology compatible with their surface position (Woolford 2006 and references therein).

NPI licensing locality also supports the claimed clausal organization. We saw in (20) that NPI licensing is clause-bound: an NPI must be licensed by clausemate negation. The facts concerning subject NPIs are that the case of the subject NPI correlates with the position of negation. When the subject NPI is ergative, and thus in the embedded clause, the negation that licenses it must also be in the embedded clause, (24). In contrast, when the subject is absolutive, and thus in the matrix clause, the licensing negation must be on the matrix verb, (25). The pattern is accounted for with the clausal organization shown and the clause-boundedness of the licensing.<sup>8</sup>

- (24) a. [zəmjə      kjətajə-bze-r      a-mə-še-new]  
           anyone.ERG    Chinese-language-ABS    3PL.ERG-NEG-do-INF  
           fjež'a-ɤ  
           begin-PAST  
           'Nobody began to speak (know) Chinese.'  
       b. \*[zəmjə      kjətajə-bze-r      a-še-new]  
           anyone.ERG    Chinese-language-ABS    3PL.ERG-know-INF  
           fjež'a-ɤ-ɸp  
           begin-PAST-NEG

<sup>8</sup> The data seem to require the assumption that NPIs be licensed in their surface (pronounced) positions; nonpronounced copies, including LF positions, are not sufficient to license an NPI. This is an oft-cited claim about NPIs in English as well (May 1977, Culicover 1981, Laka 1994, and others) and it could be captured by claiming that NPI licensing takes place at PF. Current minimalist models of grammar, including the one we adopt in section 4, require that licensing principles and grammatical constraints only refer to the two levels of representation PF and LF (Chomsky 1993; Hornstein, Nunes & Grohmann 2005). A PF licensing condition on NPIs would best mimic a surface restriction suggested by the data above.

We will resist this conclusion, however, and do not offer a theoretical account of the distribution of NPIs in Adyghe. The data are certainly more complex in the larger picture, and a full account is beyond the scope of this work. Giannakidou (1998) and others have shown that PF licensing of NPIs is inadequate for English. As far as we have investigated, however, the empirical generalization that we state seems valid and can be used in the above argumentation.

- (25) a. \*zərjə [kjətajə-bze-r a-mə-še-new] fjež'a-κ  
 anyone.ABS Chinese-language-ABS 3PL.ERG-NEG-do-INF begin-PAST  
 b. ?zərjə [kjətajə-bze-r a-še-new] fjež'a-κ-ep  
 anyone.ABS Chinese-language-ABS 3PL.ERG-do-INF begin-PAST-NEG  
 'Nobody began to speak (know) Chinese.'

The syntactic evidence thus strongly supports our differing clausal organizations for the two case-marking patterns.

### 3.4 Evidence for the Raised DP

The final piece of the structural analysis is the dual representation of the subject, in both the matrix and embedded clauses:

- (26) a. a-xe-r<sub>i</sub> [~~a-xe-me<sub>i</sub>~~ pjəsmə-r a-txə-new]  
 DEM-PL-ABS DEM-PL-ERG letter-ABS 3PL.ERG-write-INF  
 ø-fjež'aκe-x  
 3ABS-began-3PL.ABS  
 b. ~~a-xe-r<sub>i</sub>~~ [a-xe-me<sub>i</sub> pjəsmə-r a-txə-new]  
 DEM-PL-ABS DEM-PL-ERG letter-ABS 3PL.ERG-write-INF  
 ø-fjež'aκe-x  
 3ABS-began-3PL.ABS  
 'They began to write a letter.'

This claim is unsurprising in the case of an absolutive subject, (26a), as the subject raises from its thematic domain, the lower clause. We will defend the claim that the embedded ergative subject in (26b) also has a representation in the matrix clause, albeit a silent one. This is the heart of the backward raising analysis and the claim of covert A-movement. The evidence comes from phenomena that are clause-bound or those that require the ergative subject to c-command elements that are apparently structurally higher than it is.

The initial piece of evidence for the unpronounced subject comes from the agreement facts that we began with. The ergative subject in the embedded clause clearly triggers the ergative agreement in that clause. Positing an (absolutive) representation of this subject in the higher clause explains why the matrix verb agrees with the ergative subject, and does so as though the ergative were absolutive. The two agreement relations are highlighted here using underlining and boldfacing:

- (27) ~~a-xe-r~~ [a-xe-me pjəsmə-r a-txə-new]  
DEM-PL-ABS DEM-PL-ERG letter-ABS **3PL.ERG**-write-INF  
 ø-fjež'aκe-x/χ<sub>w</sub>əκe-x  
3ABS-began-3PL.ABS/turned\_out-3PL.ABS  
 'They began/turned out to write a letter.'

It would be entirely unprecedented in the language for the matrix verb to show absolutive agreement morphology triggered by an ergative DP that is not even in its clause. The silent absolutive solves this problem.

Scope facts further support the silent absolutive.<sup>9</sup> In the usual case, scope is clause-bound. An embedded ergative subject does not take scope out of an infinitival, as shown by the three different cases that follow. Thus, (28) has only the meaning where the quantified embedded subject ‘all the boys’ takes narrow scope with respect to the matrix subject ‘a student’. The available interpretation is indicated by the notation  $A > ALL$ . The unavailable reading is  $*ALL > A$ .

- (28) a. *zə st<sub>w</sub>ədentə-r [č’ale-xe-m zeč’emjə angljəjskə-bze-r*  
           one student-ABS boy-PL-ERG all.ERG English-language-ABS  
           a-še-new] faj  
           3PL.ERG-do-INF want.PRES  
       b. *[č’ale-xe-m zeč’emjə angljəjskə-bze-r a-še-new]*  
           boy-PL-ERG all.ERG English-language-ABS 3PL.ERG-do-INF  
           *zə st<sub>w</sub>ədentə-r faj*  
           one student-ABS want.PRES  
           ‘There is a student who wants for all the boys to  
           learn English.’  $A > ALL$   
           \*‘For every boy there is a student who wants for him to  
           learn English.’  $*ALL > A$

Similarly, in (29), the embedded clause subject ‘each student’ must take narrow scope with respect to the matrix subject ‘a teacher’. The wide-scope reading of the embedded ergative DP is impossible.<sup>10</sup>

- (29) *[[č’eleježač’<sub>w</sub>e pepč angljəjskə-bze-r*  
           school.student each(ERG) English-language-ABS  
           zer-jə-še]-m-č’e]  
           that-3SG.ERG-do-OBL-INTR  
       (i) *č’eleježaž-e-r meg<sub>w</sub>əše*  
           one teacher-ABS be<sub>glad</sub> PRES  
           ‘A teacher is happy that each student knows English.’  $A > EACH$   
           \*‘For each student, there is a teacher that is happy that he  
           knows English.’  $*EACH > A$

<sup>9</sup> Scope interpretations were elicited from native speakers in the following way. A speaker was offered a sentence in Adyghe containing quantified expressions and asked to describe what possible scenarios that sentence could describe (additional questions were asked to make the interpretation more explicit, e.g., ‘Could this mean that there was one and the same problem set each student had?’, ‘Did all the students have the same problem set or different ones?’, ‘Could this be uttered if one of the students did not get a problem set at all?’). After the initial elicitation, another speaker was consulted on a different day; that speaker was given a description of a situation (all the students in a class are given the same problem set to solve; every student in a class receives his/her own problem set to solve) and then presented with the elicited sentence. The speaker was asked if the sentence was appropriate for the situation described (according to Matthewson 2004, only this latter elicitation method is a licit one, however, we find the former method also very helpful). Similar elicitation techniques were used with other consultants by Testelefs (2009:681–688), whose results generally match ours.

<sup>10</sup> The quantifier *pepč* ‘each’, although phonologically independent, replaces the relevant case marker (Arkadiev et al. 2009:71). In the glosses, we indicate the case of the relevant DP in parentheses.

Finally, in (30), the embedded subject 'all' cannot scopally interact with matrix negation. It obligatorily takes narrow scope.

- (30) [zeč'emjə ʔ<sub>wef</sub>-ər a-še-new] jane je-λeʔ<sub>wə</sub>-k-ep  
 all.ERG work-ABS 3PL.ERG-do-INF mother OBL-ask-PAST-NEG  
 'Mother did not ask that all do the work.' NEG > ALL  
 \*'Mother didn't ask anyone to do the work.' \*ALL > NEG

The unavailability of the wide-scope reading of the embedded quantifiers is not due to a general ban on inverse scope interpretations. Such readings are permitted in simple clauses, as the following examples show (see also Testelets 2009:684–685):

- (31) č'eleježəč' <sub>wef</sub>-m zadače-xe-r zeč'e ə-šə-k  
 student-ERG problem-PL-ABS all 3SG.ERG-do-PAST  
 'There is a student who did all the problem sets.' A > ALL  
 'All the problem sets were done by some student or other.' ALL > A
- (32) zadače-r pepč zə č'ale-m ə-šə-k<sup>11</sup>  
 problem-ABS each one boy-ERG 3SG.ERG-do-PAST  
 'One (single) boy did each problem set.' ONE > EACH  
 'Each problem set was done by some boy or other.' EACH > ONE
- (33) aš' ʔ<sub>wef</sub> pepč qə-r<sub>wə</sub>-rə-ʔ<sub>wə</sub>-k-ep<sup>12</sup>  
 s/he.ERG work each(ABS) understand-PAST-NEG  
 'S/he understood not every undertaking.' NEG > EACH  
 'She did not understand any undertaking.' EACH > NEG

In the putative backward raising case, (34), the embedded quantificational subject 'each student' may take wide scope with respect to a quantificational adverbial 'twice' in the matrix clause. This is unexpected if it does not have a silent matrix representation because of the clause-boundedness of scope seen above. Note that the unavailability of the reading in (34c) indicates that the object of the embedded clause cannot take scope over the quantificational adverb in the matrix clause. This, too, is expected because scope is clause-bound.

<sup>11</sup> For reasons that we do not yet understand, the inverse scope reading is unavailable here if the ergative subject precedes the object DP.

<sup>12</sup> The verb 'understand' is morphologically complex, composed as follows (see Arkadiev et al. 2009:78):

(i) qə-r<sub>wə</sub>-r-ə-ʔ<sub>wə</sub>-  
 DIR-heart-INTR \_APPL-3SG.ERG-say-

- (34) [st<sub>w</sub>ədentə pepč      zadače-r      q'-a-šə-new]      t<sub>w</sub>e      fjež'aŋ  
 student each(ERG) problem-ABS DIR-3PL.ERG-do-INF twice began  
 a. 'Each student began twice to solve a problem.' EACH > TWICE  
 b. 'It began twice that each student worked on a problem.' TWICE > EACH  
 c. \*'There is a problem that each student twice began to solve.' \*A > EACH/TWICE

Similarly, an embedded quantificational subject in the backward raising configuration can take scope over matrix negation:

- (35) [a      ʔ<sub>w</sub>əfə-r      zeč'emjə a-šə-new]      wəxe-ŋ-ep  
 this work-ABS all.ERG 3PL.ERG-do-INF stop-PAST-NEG  
 'All did not stop doing this work.' ALL > NEG  
 'Not all stopped doing this work.' NEG > ALL

Although not strictly parallel to the above cases, the putative backward raising cases also show a scope interaction between the matrix verb and a focus particle in the embedded clause (see Szabolcsi 2008 for similar data in some other languages). In (36a), the embedded subject 'only she' can take wide scope with respect to the matrix predicate 'stop', which yields the reading annotated as ONLY > STOP. This is the preferred reading in the ordinary raising case as well, (36b). The availability of the wide-scope reading of the ergative subject is allowed under our account by the presence of the unpronounced absolutive subject in (36a).<sup>13</sup>

- (36) a. [a-š'      zəm pjəsmə-r ə-txə-new]      wəxə-ŋ  
 DEM-ERG only letter-ABS 3SG.ERG-write-INF stop-PAST  
 'Only s/he stopped writing a letter.'  
 'It's only s/he who stopped writing a poem.' ONLY > STOP  
 '?It stopped being the case that only s/he was writing a letter.' STOP > ONLY  
 b. [pjəsmə-r ə-txə-new]      a-r      zər wəxə-ŋ  
 letter-ABS 3SG.ERG-write-SUP DEM-ABS only stop-PAST  
 'Only s/he stopped writing a letter.'  
 'It's only s/he who stopped writing a letter.' ONLY > STOP  
 '?It stopped being the case that only s/he was writing a letter.' STOP > ONLY

Reflexive and reciprocal marking also supports our claim. Reflexive/reciprocal in Adyghe is a bound morpheme on the verb, which indicates that two participants are coreferential. Reflexivization is a clause-bound phenomenon (Colarusso 1992:195). In the raising construction under consideration, the matrix verbs can show reflexive morphology, (37) and (38). In (37), the embedded ergative subject is coindexed with a matrix benefactive; the latter triggers reflexivization on the matrix verb. In (38), the

<sup>13</sup> We do not have an explanation for why this reading is preferred when the sentence is given out of context. The narrow-scope reading is not impossible, and we hypothesize that it could be made more prominent in an appropriate context where the pragmatics favored this reading.

embedded ergative subject binds a locative argument in the matrix clause which is introduced by the locative applicative prefix on the raising verb.

- (37) [a-xe-me pjəsmə-r a-txə-new] zə-fjež'a-ke-x  
 DEM-PL-ERG letter-ABS 3PL.ERG-write-INF **REFL**-begin-PAST-PL  
 'They began to write a letter for themselves.'
- (38) [sabəjə-m-jə č'ale-m-jə wəsə-xe-r a-txə-new]  
 child-ERG-and lad-ERG-and poem-PL-ABS 3PL.ERG-write-INF  
 zə-pə-χwə-ke-x  
**REFL-LOC**-turn\_out-PAST-PL  
 'The child and the young man turned out, sitting against each other, to write poetry.'

What is striking about these examples is that the two coindexed participants are apparently not members of the same clause and, further, the ergative subject, the reflexive binder in each case, does not c-command the reflexive morpheme in the matrix clause. The existence of an absolutive representation of the ergative subject in the matrix clause solves both of these problems. The reflexive argument is bound by a clausemate antecedent:

- (39) ~~a-xe-r~~ [a-xe-me pjəsmə-r atxə-new] zə-fjež'a-ke-x  
 DEM-PL-ABS DEM-PL-ERG letter-ABS write-INF **REFL**-begin-PAST-PL

A similar argument comes from the emphatic depictive *jež'ə* 'by him/herself'. We take this to be a secondary predicate with a PRO subject that must be locally bound. It agrees in case with PRO's binder. Not surprisingly, the depictive can appear in the same clause as the overt subject in the raising constructions. If the subject is ergative, the depictive is in embedded clause, (40a); if the subject is absolutive, the depictive is in the matrix clause, (40b).

- (40) a. [a-š' jež'ə-m wəsə-r ə-txə-new] fjež'aκ  
 DEM-ERG **by\_self**-ERG poem-ABS 3SG.ERG-write-INF began  
 'He began to write a poem himself.'
- b. [wəsə-r ə-txə-new] a-r jež'ə-r fjež'aκ  
 poem-ABS DEM-ERG-write-INF **DEM-ABS by\_self**-ABS began  
 'He began to write a poem himself.'

For some speakers, the depictive may be in the matrix clause and be bound by the embedded ergative subject, (41). This is sanctioned if the ergative subject has a null absolutive representation in the matrix clause, as we have claimed.<sup>14</sup>

<sup>14</sup> The acceptability of (41) and similar examples varies by individual speakers. We think that those speakers who find these examples unacceptable may require strict adjacency between the depictive and its host. This adjacency is preserved in the examples in (40), which are accepted by all speakers.

- (41) %[a-š' wəse-r ə-txə-new] jež'ə-r fjež'aš  
 DEM.ERG poem-ABS 3SG.ERG-write-INF **by\_self**-ABS began  
 'He began to write a poem himself.'

In summary, we have shown that both raising constructions involve two syntactic representations of the overt subject, regardless of where it is pronounced. In particular, in the case where the ergative subject appears in the complement clause, it nevertheless has a covert representation in the matrix clause. In what follows, we turn to an analysis of this construction.

### 3.5 Analysis

The raising derivation that we propose for the raising verbs in Adyghe is shown in (42). For now we abstract away from the exact analysis of the covert movement. We return to this issue in detail in the following section.

- (42) a. [a-xe-me pjəsmə-r a-txə-new] fjež'a-ʔe-x  
 DEM-PL-ERG letter-ABS 3PL.ERG-write-INF begin-PAST-PL  
 [ERG, EPP] [AGR]  
 b. a-xe-r [a-xe-me pjəsmə-r a-txə-new] fjež'a-ʔe-x  
 DEM-PL-ABS DEM-PL-ERG letter-ABS 3PL.ERG-write-INF begin-PAST-PL  
 [ABS, EPP] [AGR]  
 'They began to write a letter.'

The subject originates in the embedded clause where it checks ergative Case as the subject of a transitive verb and satisfies the Extended Projection Principle (EPP) in the embedded clause, (42a). Agreement also takes place between the subject and the embedded verb, yielding ergative agreement (see section 4.3 for analytical details). The matrix verb is unaccusative and does not have an external argument. This permits the embedded-clause subject to raise into the matrix clause, which satisfies the EPP in that clause as well. We represent the movement using copies. In the matrix-clause subject position, the DP checks absolutive Case. We assume that the ability of a DP to check Case multiple times is an option available in (at least some) languages. The Case feature is revalued so that the DP only ever has one Case feature value at a time (see Bejar & Massam 1999; Bobaljik & Branigan 2006; Merchant 2009; Boeckx, Hornstein & Nunes 2010). Multiple case checking phenomena clearly exist cross-linguistically (Massam 1985; Belletti 1988; McCreight 1988; Harbert 1989; Yoon 1996, 2004; Nordlinger 1998; Bejar & Massam 1999; Miller 2002; Sigurðsson 2004; Woolford 2006; Merchant 2009) and so this move seems empirically justified.

In the matrix clause, agreement takes place between the absolutive and the raising verb. Syntactically, the derivation is thus little different from its English counterpart. The main difference is that nonfinite supine complement clauses in Adyghe are not syntactically deficient in the way that English infinitival clauses are, so that Case and agreement are checked and realized morphologically. The derivation accounts for the facts introduced above. The agreement patterns follow from the presence of two



copies of the subject, one in the embedded clause that is ergative and one in the matrix clause that is absolutive. Agreement can take place between the verbs and their respective subjects in a local fashion, under Spec-head feature matching. The constituency evidence follows because the ergative subject is in the complement clause. The evidence for a (silent) subject in the matrix clause follows because there is a copy of the subject in that clause.

The question that needs to be addressed to complete the analytical picture is what determines whether the raising is overt or covert. If the higher copy is pronounced we have overt movement, and if the lower copy is pronounced we have covert movement. What permits this alternation? We turn to this now.

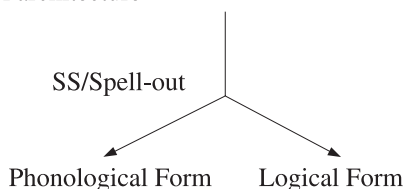
#### 4. Theoretical Implications for the Modeling of Covert Movement

The full formal analysis of the alternation depends on one's theory of covert movement. Section 4.1 first presents four existing theories of covert movement. Section 4.2 then shows that the covert A-movement in backward raising is compatible with only two of these theories. In the final subsection, 4.3, we present an analysis of backward raising within the context of the Phonological Theory of covert movement, in which covert movement results from selectively pronouncing lower copies of movement.

##### 4.1 Theories of Covert Movement

Broadly speaking, there are two families of theories of covert movement: *phrasal theories* and *featural theories*. We discuss instances of each in turn. Phrasal theories of the overt versus covert movement distinction appeal to the idea that both covert and overt movement involve the same syntactic operation—phrasal movement. They differ in where and/or when in the derivation the syntactic phrases are moved and pronounced. One instance of a phrasal theory is the original theory of covert movement, *LF Movement* (Huang 1982, Chomsky 1995, Richards 2001). It was developed within the Y-model of syntax of the 1980s and 1990s (Chomsky & Lasnik 1993, Chomsky 1995, and much other work). The architecture is illustrated in (43).

(43) Y-model architecture



The distinction between overt and covert movement is one of timing with respect to S-structure (SS) or Spell-out. Overt movement takes place prior to SS/Spell-out and thus the phonological consequences can be seen. Covert, LF Movement takes place after SS/Spell-out, on the path of the derivation that branched towards Logical Form (LF). LF movement is understood to be part of the syntax and is expected to be

subject to the same principles and constraints as overt movement. It simply has no phonological consequences because the derivation has already branched to Phonological Form (PF).

More recently, the phrasal theory has been conceptualized as the *Phonological Theory of covert movement* (Bobaljik 1995, 2002; Brody 1995; Groat & O'Neil 1996; Pesetsky 1998; Fox & Nissenbaum 1999; Bošković 2002; Fox 2002; Nunes 2004). This theory makes crucial use of the copy theory of movement (Chomsky 1993, 1995), which states that movement leaves behind full copies of the moved element. All copies are present in the syntactic derivation through to LF. We do not generally see all copies pronounced, however, because of phonological restrictions. Copies need to be selectively deleted at the phonological interface, outside the syntax. Overt movement consists in pronouncing the higher copy (i.e., not deleting the higher copy). Covert movement entails pronouncing a lower copy. Because the choice of which copy to pronounce takes place at the phonological interface, there is no difference between overt and covert movement in the syntax proper. At LF, all copies are present, as with LF movement.

Featural theories of covert movement differ from the above in positing (partially) distinct mechanisms to account for the overt versus covert movement distinction. They arise from recent minimalist attempts to eliminate LF movement entirely. For Chomsky (1995:261ff.), covert movement is replaced with overt movement of formal features only, an operation dubbed *Move F*. The *Move F* theory of covert movement (Chomsky 1995, Pesetsky 2000) models covert movement as overt movement of morphosyntactic features. Given that formal features have no phonological exponent within the syntax, their movement has no phonological consequences. Overt movement, in contrast, consists of formal feature movement plus pied-piping of the phonological material; that is, phrasal movement. The distinction between overt and covert movement, then, is in the amount of material that is moved, not in the timing of the movement.

Most recently, Chomsky (2000, 2004) has proposed what we call the *Agree theory* of covert movement in which covert movement is modeled without movement of any kind. Overt movement is movement of syntactic material as before; however, covert movement is nonmovement. The relationship between the two positions that was created via movement is now created by the independently motivated feature matching or checking relation Agree. The Agree theory of covert movement proposes that any motivation for covert movement can be satisfied by an in-situ feature-checking relation.

## 4.2 *Implications of Covert A-Movement*

Phrasal theories of covert movement can be distinguished from featural theories. In the former, a full representation of the moved element exists at the higher location even though it is not pronounced there. In the latter, only formal features are located at the higher position—either via feature movement or feature sharing/matching. Syntactic phenomena that are sensitive to more than formal features can distinguish between them. With phrasal theories, we expect that the moved element may display

“high” behavior, as though it were syntactically in the higher position. With featural theories, the moved element should show only “low” behavior because the only aspects of the moved element in the higher position are the morphosyntactic features. We believe that scope and binding properties are two such phenomena. Movement of formal morphosyntactic features alone does not create new binding or scope relations, and the absence of high scope and binding behavior is indicative of a lack of A-movement.<sup>15</sup> This claim is clearly seen with the English expletive insertion construction, for which a Move F or Agree analysis is widely accepted (Lasnik 1995, Chomsky 2000, but see Hazout 2004) and an LF movement analysis (Chomsky 1991, 1993) has been persuasively argued against (den Dikken 1995, Hornstein 1999, Schütze 1999, Sobin 2004). Scope and binding diagnostics indicate that the associate is in its surface position. It does not have the scope and binding properties expected if it were in the higher position occupied by the expletive:

- (44) a. Many students don't seem to be here. MANY > NEG  
b. There don't seem to be many students here. NEG > MANY, \*MANY > NEG
- (45) a. Some applicants<sub>i</sub> seem to each other<sub>i</sub> to be eligible for the job.  
b. \*There seem to each other<sub>i</sub> to be some applicants<sub>i</sub> eligible for the job.  
(den Dikken 1995:348)
- (46) a. Someone<sub>i</sub> seems to his<sub>i</sub> mother to be eligible for the job.  
b. \*There seems to his<sub>i</sub> mother to be someone<sub>i</sub> eligible for the job.  
(den Dikken 1995:349)

Backward raising is incompatible with featural theories of covert movement. Such theories incorrectly predict that the embedded subject will show uniformly ‘low’ syntactic and semantic behavior, despite agreement between the raising verb and the embedded subject. Given the Adyghe data in section 3.4 in which the embedded ergative subject showed scope and binding properties as though it were in the matrix clause, it cannot be the case that the covert A-movement argued for here is modeled with formal features only. Such behavior would be unexpected. We conclude that neither the Move F nor Agree theory of covert movement is adequate to account for covert A-movement.<sup>16</sup> Such theories incorrectly predict that the embedded subject will show uniformly low binding and scope behavior despite the agreement between

<sup>15</sup> Bobaljik (2002) argues that covert A-movement can exist even in the absence of scope and binding diagnostics. Long-distance agreement is sufficient evidence to posit movement. He labels such constructions *Lower Right Corner* constructions (LRCs). Such a situation arises in his system if PF and LF both privilege the lower copy of the movement chain. Bobaljik's example of an LRC is expletive insertion. Sobin (2004) questions this analysis based on agreement patterns with coordinated associates and argues that no movement can be involved. Sobin suggests that economy considerations might rule out LRCs even if they are permitted by the theory.

<sup>16</sup> For covert A'-movement, a null operator is often posited near the higher syntactic position so that an Agree/Move F analysis can be maintained. A null operator for A-movement phenomena seems unmotivated. Assuming that a unified theory of covert movement is desirable, this conclusion could be extended to A'-movement in general (see Richards 2001).

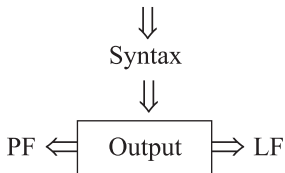
the raising verb and the embedded subject. Backward raising requires a phrasal theory of covert movement in which the moved element has a full syntactic and semantic representation in the displaced position. Such theories give an LF representation to backward raising that does not differ from canonical subject-to-subject raising (SSR). This seems to be the correct result.

#### 4.3 Backward Raising and the Phonological Theory of Covert Movement

Backward raising does not distinguish the phonological and LF movement theories of covert movement because the derivation concludes with the same LF representation under each account. We complete our discussion of backward raising with an analysis within the context of the Phonological Theory. Covert movement under this approach amounts to pronouncing lower copies.

We adopt a Single Output Syntax model (Bobaljik 1995, 2002), shown in (47). The syntax generates a single representation, which is interpreted by the conceptual-intentional (LF) and articulatory-perceptual (PF) components.

(47) Single Output Syntax (Bobaljik 2002:198)



The syntactic representation generated for Adyghe SSR is repeated here:

(48) a-xe-r      [a-xe-me      pjəsmə-r   a-txə-new]      fježʔa-ke-x  
 DEM-PL-ABS   DEM-PL-ERG   letter-ABS   3PL.ERG-write-INF   begin-PAST-PL

We first consider what happens at PF. When this representation is sent to PF, an algorithm determines which copy/copies is/are to be pronounced. It is clear that the desired outcome is that either copy can be pronounced. We adopt the Chain Reduction algorithm (Nunes 2004) to achieve this result and begin by stating some relevant assumptions about copies.

We assume that copies result from an operation *Copy* that simply replicates some syntactic object (Nunes 2004). Copies formed by this operation are nondistinct from each other. Following Nunes (2004:23), we hold that this nondistinctness is formally represented on syntactic labels. A DP such as *the boy* is represented as  $[_{DP^i} \text{ the } [_{NP^k} \text{ boy}]]$ , where *i* and *k* encode distinctness. When the  $DP^i$  is copied, the distinctness markings *i* and *k* are copied as well, which makes it possible to determine whether two elements are copies, and thus (non)distinct, simply by inspection. Two elements are nondistinct if they have the same distinctness marking and are distinct

otherwise. Thus,  $DP^i$  would be nondistinct from  $DP^i$  but distinct from another DP, say  $DP^m$ .<sup>17</sup>

We further assume that feature checking involves features on only single copies—what Nunes calls the “link checking” approach to feature checking. Thus, when a syntactic object X is in a feature-checking relation and some feature F is checked, F is checked only on X. It is not checked on other copies of X that might exist. This contrasts with Chomsky’s (1995:381, n. 12) “chain checking” approach to feature checking, in which checking of a feature F on a copy checks F on all copies. We do not adopt this view, as will be evident in the structures below. Feature checking furthermore only checks features, it does not modify distinctness markings; distinctness is not changed by feature checking. Consequently, two elements that are nondistinct before a feature-checking operation takes place are nondistinct after the operation affects one of the copies. To summarize, let us suppose Copy makes a copy of a syntactic object with an unchecked feature. If the copy subsequently undergoes feature checking, one copy will have a checked feature and the other will have an unchecked feature. The two copies retain the same distinctness markings and will remain nondistinct.

Returning to PF, some of the copies formed in this way must be selectively deleted at PF. The deletion is necessitated by a principle that permits only one copy to be pronounced. Researchers such as Kayne (1994) and Fox & Pesetsky (2005) argue that such a principle is derivable in its simplest form in any architecture in which PF is required to transform a hierarchical structural representation into a linear ordering of the terminals. Such an ordering cannot contain statements that order two nondistinct copies with respect to one another or with respect to some third element.  $X^i$  could not be required to precede or follow  $X^i$  or be required to both precede and follow some other element Y (see Nunes 2004:24–25 for further discussion and illustration). To be linearized, a chain of nondistinct copies must thus be reduced to one phonological member.

Economy considerations then come in to play to dictate that the “best” copy should survive, with all the others being deleted by an operation that Nunes calls *Chain Reduction*. Nunes (2004:30–38) defends the idea that Chain Reduction deletes all but the copy with the fewest unchecked features. Given that movement is driven by feature checking, and that it is upward, this will typically result in the topmost copy in a chain being pronounced, and the nonhighest copies being deleted. Movement does not always check a feature of the moving element however, which means that two copies can have the same number of unchecked features—perhaps none. In such cases, Chain Reduction could leave either copy, resulting in apparent optionality.<sup>18</sup> We will develop an analysis of backward raising that represents this

<sup>17</sup> An alternative way to conceptualize nondistinctness is that two elements are nondistinct if they are instances of the same token(s) from the numeration (Chomsky 1995:227, Nunes 2004:22–23). The distinctness markings thus encode information regarding how lexical items relate to the numeration. See Nunes 2004:165 for discussion of this mechanism with respect to Inclusiveness.

<sup>18</sup> Nunes’s system allows for the possibility that the pronounced copy might itself have an unchecked feature. It does not cause the derivation to crash because of an operation called *FF-Elimination* (Chomsky 1995:230–231; Nunes 2004:31–32, 166–167) that comes through after Chain Reduction has applied and deletes any remaining unchecked features. Because none of our derivations involves the pronunciation of copies with unchecked features, we do not delve into this scenario.

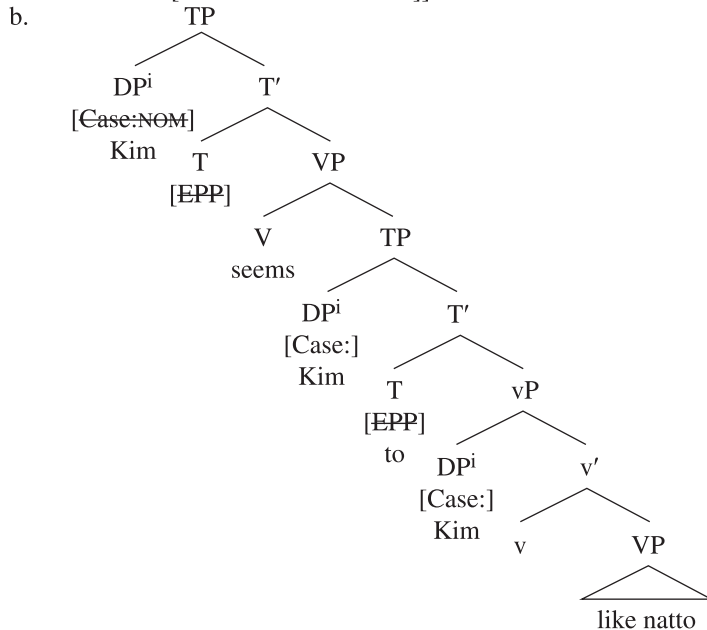
scenario. The relevant principles are repeated here, and we first show how they derive the pattern of English SSR.

(49) Chain Reduction Principles (Nunes 2004)

- a. Only one copy can be pronounced.
- b. Delete all but the copy with the fewest unchecked features.

An English SSR example is given in (50a) with the derivation in (50b). The relevant features in the derivation are the EPP features of the matrix and embedded T and the Case features of the DP. We assume that the Case feature is valued by a Case-assigning head and that this constitutes it being checked as well. Case checking occurs in Spec,T. Checked features are shown with strikethrough.<sup>19</sup>

(50) a. Kim seems [~~Kim~~ to ~~Kim~~ like natto]].

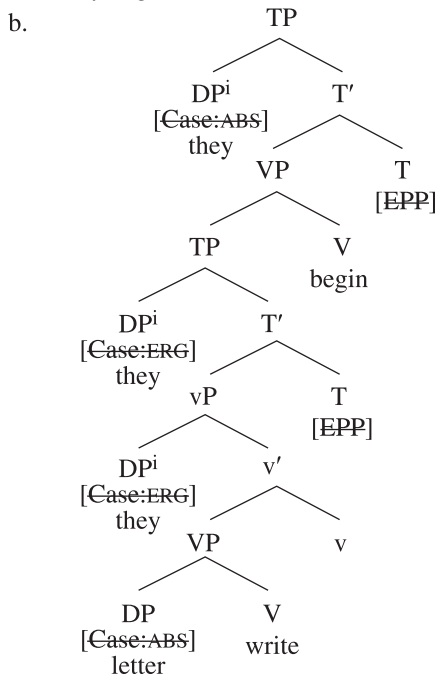


The all-but-highest copies are deleted because they have more unchecked features. The highest copy is thus pronounced, as expected. The pronunciation of any of the other copies would be less economical. This explains why English does not have backward raising.

Chain Reduction at PF in the Adyghe case proceeds similarly. The syntactic output is as in (51a) with the structure in (51b) (English words substituted).

<sup>19</sup> Locality of movement issues do not arise here; we assume that unaccusative verbs do not have a vP shell.

- (51) a. a-xe-r [a-xe-me pjəsmə-r a-txə-new] fjež'a-ke-x  
 DEM-PL-ABS DEM-PL-ERG letter-ABS 3PL.ERG-write-INF begin-PAST-PL  
 'They began to write a letter.'



We assume, following Aldridge (2004, 2008) and Legate (2008), that the checking of absolutive Case on the object depends on transitivity. In a transitive clause such as the one in (51), the object remains in its base position inside the VP and checks its Case with *v*. In an intransitive clause (not shown), the absolutive DP would have its Case checked by T, not *v*. The ergative DP is merged in Spec,v, where ergative Case is also checked.

Given that neither of the two highest copies of the subject, either in the ergative or in the absolutive case, has any unchecked features, either one can be pronounced. Neither is less economical. This correctly captures the alternation between ordinary SSR and backward raising.<sup>20</sup>

The Chain Reduction Principle (49a) correctly predicts that one cannot pronounce both copies simultaneously:

<sup>20</sup> Under the Phonological Theory of covert movement, pronunciation of nonhighest copies of A-movement occurs in backward raising. Such copies must clearly thus exist at PF. This is not compatible with Lasnik's (1999) conclusion that there are no traces of A-movement. One could maintain the no-A-traces account within the LF movement theory as the lower subject is not a trace at the point at which it is pronounced. It is not until LF that the subject moves, leaving a putative trace.

- (52) \*a-xe-r      a-xe-me      pjəsmə-r      a-txə-new      fježʔa-ɪ(e-x)  
 DEM-PL-ABS   DEM-PL-ERG   letter-ABS   3PL.ERG-write-INF   begin-PAST-PL  
 Intended: 'They began to write a letter.'

Turning now to the interpretive side of the derivation, the LFs for the English and Adyghe raising cases are (50b) and (51b), respectively. There is no difference between the LF of ordinary raising and backward raising. In contrast to PF, there is no operation at LF that selectively deletes copies; all copies are present there. This raises the question of why the unchecked features, at least in the English case, do not cause the derivation to crash as a violation of Full Interpretation. This concern does not arise in the Adyghe case because there are no unchecked features on any of the copies. Nunes (2004:chap. 2) answers this question in detail, and we refer the reader to that discussion. The essence of the answer is the two principles in (53) and (54).

- (53) Feature Uniformity Condition (Nunes 2004:70)  
Given a chain CH =  $(a_1, \dots, a_n)$ , every  $a_i$  ( $1 \leq i \leq n$ ) must have the same set of features visible at LF.
- (54) Chain Uniformization (Nunes 2004:71)  
Delete the minimal number of features of a nontrivial chain CH in order for CH to satisfy the Feature Uniformity Condition.

The Feature Uniformity Condition requires that all copies have the same set of visible features at LF. The Chain Uniformization principle ensures this by deleting the minimum number of features on copies such that the Feature Uniformity Condition is satisfied. For the case at hand, these two principles will result in the deletion of the unchecked Case features on the two lower copies in the English LF, (50b). No unchecked features are now present, and the derivation will not crash. There are no unchecked features in the Adyghe LF in (51b) so Chain Uniformization will not delete anything.

It is these LFs that then get interpreted. The scope facts in particular are explained under the assumption that either copy can be interpreted by the semantic component (Chomsky 1993, Fox 2000, Bobaljik 2002:201–202, and references therein). To illustrate, consider the example, repeated from (35), showing an interaction between negation and an embedded ergative subject:

- (55) [a   ʔ<sub>w</sub>əfə-r     zeč'emjə a-ŝə-new]       wəxe-k-ep  
this work-ABS all.ERG 3PL.ERG-do-INF stop-PAST-NEG  
'All did not stop doing this work.'  
'Not all stopped doing this work.'
- ALL > NEG  
NEG > ALL

The LF for this example under the BR analysis is (56). The wide-scope reading of the universal quantifier over negation is achieved by interpreting the absolute copy in the matrix clause. The narrow-scope reading results when the lower,



ergative copy is interpreted. The other scope facts in section 3.4 are accounted for similarly.

- (56) zeč'erjə [a ʔ<sub>w</sub>əfə-r zeč'emjə a-šə-new] wəxe-ɣ-ep  
all.ABS this work-ABS all.ERG 3PL.ERG-do-INF stop-PAST-NEG

## 5. Crosslinguistic Observations

Covert A-movement has not appeared widely in the literature, but other cases are claimed to exist. Space precludes us from considering them (see Potsdam & Polinsky 2011 for discussion of one instance); however, we would like to present one putative case of covert SSR, in Greek, which constitutes a minimal pair with the Adyghe construction. It does not involve covert A-movement, but it raises interesting issues of crosslinguistic variation that we address here.

### 5.1 False Backward Raising

The salient diagnostic of covert A-movement in Adyghe was agreement between a matrix SSR verb and the subject of its complement clause:

- (57) a. [a-xe-me pjəsmə-r a-txə-new] ø-fjež'a-ɣe-x  
DEM-PL-ERG letter-ABS 3PL.ERG-write-INF 3ABS-begin-PAST-3PL.ABS  
'They began to write a letter.'

Such an agreement pattern exists in other languages, notably the Balkan languages (Alexiadou & Anagnostopoulou 1999; Rivero & Geber 2004, 2008; Alexiadou et al. 2008, to appear; Potsdam & Polinsky 2008, and references therein). The sentence in (58) presents an example from Greek.

- (58) Stamatisan [na malonun i dhaskali tus mathites].  
stopped.3PL SBJV scold.3PL the teachers.PL the students  
'The teachers stopped scolding the students.'

Alexiadou & Anagnostopoulou (1999) and Alexiadou et al. (to appear) show that the Greek aspectual verbs *arxizo* 'start' and *stamatao* 'stop' are raising verbs and that they participate in a raising syntax. Ordinary SSR is observed, as shown in (59), and evidence from selectional restrictions, idiom chunks, nominative anaphors, and weak crossover supports an unaccusative argument structure.

- (59) a. Ta pedhia arxisan na trehun.  
the children start.3PL SBJV run.3PL  
'The children started to run.'  
b. I dhaskali stamatisan na malonun tus mathites.  
the teacher.PL stop.3PL SBJV scold.3PL the students  
'The teachers stopped scolding the students.'

Despite the agreement pattern in (58), there is good evidence that unlike Adyghe, the boldfaced embedded subjects in Greek do not covertly raise into the matrix clause (Alexiadou et al. 2008, to appear; Potsdam & Polinsky 2008). We will repeat some of the arguments to support this claim. They directly contrast with the Adyghe facts.<sup>21</sup>

In the Adyghe data in (41), we saw that the embedded subject licenses a secondary predicate in the matrix clause. In Greek, however, the low subject does not license a secondary predicate in the matrix clause, (60a) (Alexiadou et al. 2008:(52)). The secondary predicate is licensed only in the embedded clause, (60b).

- (60) a. \*Stamatisē aproetimasti pros to telos tis hronias  
 stopped.3SG **unprepared.FEM** toward the end the year  
 [na erhete i Maria sto mathima].  
 SBJV come.3SG **the Maria** to.the lesson
- b. Stamatisē pros to telos tis hronias [na erhete i Maria  
 stopped.3SG toward the end the year SBJV come.3SG **the Maria**  
 aproetimasti sto mathima].  
**unprepared.FEM** to.the lesson  
 ‘It stopped toward the end of the year being the case that Maria came  
 unprepared to class.’

Scope facts also support a low subject in Greek. Example (61) shows that subjects scopally interact with clausemate negation. In particular, they can be interpreted as taking wide scope with respect to clausemate negation.

- (61) **Oli i fitites dhen** dhiavasan afto to vivlio.  
 all the students.PL NEG read.3PL this the book  
 ‘All the students didn’t read this book.’ ALL > NEG  
 ‘Not all the students read this book.’ NEG > ALL

In SSR, the raised subject also scopally interacts with matrix negation:

- (62) **Oli i fitites dhen** arxisan [na dhiavazun afto to vivlio].  
 all the students.PL NEG begin.3PL SBJV read.3PL this the book  
 ‘All the students didn’t begin to read this book.’ ALL > NEG  
 ‘Not all the students began to read this book.’ NEG > ALL

In contrast, the low subject can only take narrow scope with respect to matrix negation, (63). This fact is not predicted by the BR analysis. If the embedded subject were to raise into the matrix clause covertly, the LF would be identical to (62) and an ambiguity would still be expected.

<sup>21</sup> Much of the data show that the low subject is in fact in the complement clause and does not reach its position as a result of a series of rightward scrambling operations in the matrix clause. Potsdam & Polinsky 2008 provides a further argument from case marking to support this conclusion.

- (63) **Dhen** arxisan [na dhiavazun **oli i fitites** afto to vivlio].  
 NEG stop.3PL SBJV read.3PL all the students.PL this the book  
 \*‘All the students didn’t begin to read this book.’ \*ALL > NEG  
 ‘Not all the students began to read this book.’ NEG > ALL

A similar scope contrast arises with a scope ambiguity between the raising verb and a focused subject, (64). When the subject raises, it can take scope over the raising verb, (64a). When the subject is low, this is not possible, (64b).

- (64) a. **Mono i Maria** stamatise [na perni kakus vathmus].  
 only the Maria stopped.3SG SBJV get.3SG bad grades  
 ‘It is only Maria who stopped getting bad grades.’ ONLY > STOP  
 b. Stamatise [na perni **mono i Maria** kakus vathmus].  
 stopped.3SG SBJV get.3SG only the Maria bad grades  
 ‘It stopped being the case that only Maria got bad grades.’ STOP > ONLY

Finally, floating quantifiers complete the picture for a low subject. Like English, Greek has a floating quantifier ‘all’ that can float away from its associate:

- (65) a. **Ola ta pedhia** irthan.  
 all the children came  
 ‘All the children came.’  
 b. **Ta pedhia** irthan **ola**.  
 the children came all  
 ‘The children all came.’/‘The children have all come.’

The raised subject can license a floated quantifier in the matrix clause, (66); however, an embedded subject does not license a matrix floated quantifier, (67).

- (66) a. **Oli i dhaskali** stamatisan [na malonun tus mathites].  
 all the teachers stop.3PL SBJV scold.3PL the students  
 ‘All the teachers stopped scolding the students.’  
 b. **I dhaskali** stamatisan **oli** [na malonun tus mathites].  
 the teachers stop.3PL all SBJV scold.3PL the students  
 ‘The teachers all stopped scolding the students.’  
 (67) a. Stamatisan [na malonun **oli i dhaskali** tus mathites].  
 stop.3PL SBJV scold.3PL all the teacher.PL the students  
 ‘All the teachers stopped scolding the students.’  
 b. \*Stamatisan **oli** [na malonun **i dhaskali** tus mathites].  
 stop.3PL all SBJV scold.3PL the teachers the students

As with the scope data, this last fact is unexpected under a BR derivation. The embedded subject in (67b) would raise into the matrix clause, resulting in an LF

identical to the grammatical (66b). The fact that (67b) is ungrammatical strongly suggests that this derivation does not occur.

These facts indicate that the embedded subject in Greek shows uniformly low behavior and never has a representation in the matrix clause. A BR analysis is thus not appropriate. Potsdam & Polinsky (2008) and Alexiadou et al. (to appear) argue that a long-distance in-situ agreement mechanism such as Agree is necessary to account for the Greek pattern:

- (68)
- 
- Stamatisan [TP na malonun [i dhaskali] tus mathites].  
 stop.3PL SBJV scold.3PL the teacher.PL the students  
 'The teachers stopped scolding the students.'

In contrast to Adyghe, a covert movement analysis implemented with a phrasal theory of covert movement cannot and should not be invoked.<sup>22</sup>

## 5.2 *On the Greek/Adyghe contrast*

Before concluding, we present a tentative account of the parametric difference between Adyghe- and Greek-type languages, which builds on the analysis of Alexiadou et al. (to appear). As Alexiadou et al. discuss, Greek has certain syntactic characteristics that make the Agree analysis available. We assume the following definition of Agree (see Alexiadou et al., to appear; Chomsky 2004; Baker 2008).

- (69) Agree occurs between a probe P and a goal G iff
- P c-commands G.
  - There is no X such that X intervenes between P and G and has the relevant feature that is being checked.
  - P and G are in the same phase.<sup>23</sup>

As a result of Agree, the relevant features on P and G are valued with the same feature values and any uninterpretable features are checked. The agreement between the raising verb and the embedded nominative satisfies the conditions on Agree, which indicates that the desired Agree relation can be formed. First, the higher verb, the probe, c-commands the embedded nominative subject, the goal. Second, no phase intervenes between the probe and goal, as we accept that the complement to the raising verb is a semantically and morphologically tenseless TP and not a CP. It is thus not a phase (Alexiadou et al. 2008, to appear; Alboiu 2007; Rivero & Geber

<sup>22</sup> A featural theory of covert movement would be suitable for the Greek facts; however, we argued above that such theories are untenable because of the Adyghe pattern.

<sup>23</sup> We do not assume an Activation Condition on Agree that requires that the goal have an unchecked Case feature to participate in an Agree relation (see also Bhatt 2005 and Bošković 2007a,b for the same conclusion). In particular, for Greek, we assume that nominative Case is available in the lower clause, contra Alexiadou et al., to appear. It would thus not satisfy such an Activation Condition.

2008). This Agree relation results in the checking of the raising verb's uninterpretable agreement features. Further, we assume, following Alexiadou & Anagnostopoulou 1998, that the EPP in Greek can be satisfied by movement of the verb to T. This obviates the need for the embedded subject to raise, either overtly or covertly, into the matrix clause for EPP purposes. Nothing would drive the movement.<sup>24</sup>

Adyghe, in contrast, cannot satisfy the EPP with verb movement to T so the EPP must be satisfied by phrasal movement to Spec,T. This precludes an analysis that uses long-distance Agree alone for Adyghe. At the same time, because Case is available in the embedded clause, as discussed earlier, the alternation between backward and ordinary raising appears.

The Greek/Adyghe contrast raises questions about possible correlations between the availability of BR and headedness or the type of case system in a language. If such correlations existed, they would help us identify the relevant languages in which to search for BR. Headedness may indeed be a correlated cue, given our analysis. If head-final languages are less likely to have V-to-T head movement, then they are less likely to satisfy the EPP with verb movement and more likely to use XP movement. Consequently, we expect that BR is more likely to be found in these languages and false BR should be better represented in head-initial languages. The sample of languages showing BR and false BR is not yet big enough to evaluate this expectation. As far as case is concerned, we believe that there will be no correlations. Case marking on embedded-clause subjects, either the same or different from corresponding matrix subjects, is neither a necessary nor sufficient condition for BR. Case marking may very well be a useful diagnostic of syntactic structure, as it was in Adyghe; however, we believe that the morphologically ergative case marking, such as is seen in Adyghe, is tangential to the existence of backward raising.

## 6. Conclusions

The Greek/Adyghe picture yields a number of clear conclusions as well as several questions for further investigation. Most importantly, Adyghe provides support for the existence of covert A-movement. In some sense, this is a desirable result. The distinction between A- and A'-movement should be epiphenomenal—a consequence of independently interacting properties and not primitives in the theory. If this is the case, then there should be no covert A'-movement without covert A-movement. There should be only covert movement, and Adyghe supports this result. Such a conclusion indicates that both covert movement and Agree are needed. Neither can be reduced to the other. This raises the question of what the division of labor is between the two.

Nevertheless, covert A-movement, and BR in particular, seems quite rare. We are aware of a number of potential false BR cases like Greek in which we would claim there is no covert movement: Icelandic (Holmberg & Hróarsdóttir 2003), Hungarian (Szabolcsi 2008), Finnish (Szabolcsi 2008), Romanian (Rivero & Geber 2004, 2008;

<sup>24</sup> The apparent raising that yields SVO word order in (59) is a result of movement to a clause-initial A'-position (Alexiadou & Anagnostopoulou 1998).

Alexiadou et al., to appear), Spanish (Alexiadou et al., to appear), and possibly Italian (Szabolcsi 2008). In contrast, only one other case of true BR involving covert movement has been proposed, Standard Arabic (Haddad 2011). This raises the questions of why BR is so rare and what distinguishes languages like Greek from those like Adyghe.

In part, our lack of awareness of covert A-movement may be hiding many cases. We generally see only what we are looking for. More concretely, BR is difficult to identify. The salient morphosyntactic characteristic is agreement between a raising verb and an embedded subject; however, this requires both overt agreement and a subject that is unambiguously in the embedded clause. The agreement must be distinct from what one expects to appear with a null expletive. The Greek/Adyghe contrast indicates that, even if agreement suggests the presence of BR, that may be a false start because there may still not be covert movement.

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*Eric Potsdam*  
*University of Florida*  
*Linguistics Department*  
*P.O. Box 115454*  
*Gainesville, FL 32611*  
*USA*

*potsdam@ufl.edu*

*Maria Polinsky*  
*Harvard University*  
*Department of Linguistics*  
*Boylston Hall*  
*Cambridge, MA 02138*  
*USA*

*polinsky@fas.harvard.edu*