

What a polysynthetic language can tell us about wh-movement and Phase Theory: Possessor extraction in West Circassian*

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UC Santa Cruz, 4 June 2021

1 Introduction

Cross-linguistically, two types of nominal arguments tend to be islands for subextraction:

1. subjects (Ross 1967; Chomsky 1973, *et seq.*)
2. oblique case-marked nominals, including ergative agents (Bošković 2018; Branen 2018)

Main claim: islandhood of nominal arguments is best analyzed with a combination of:

- Agree-based theory of phasehood (Rackowski & Richards 2005; Van Urk & Richards 2015; Halpert 2019)
- opacity of phase edges (= the Edge Condition¹; Chomsky 2000, 2001)
- Combined via a revised definition of locality for Agree operations.

Phase opacity is a consequence of failure to Agree with the phase head, i.e. phasehood is variable and contextually determined.²

*Data for this project was collected through elicitation with speakers of the Temirgoy dialect in the Khatazhukaj rural settlement and Maykop (Adygea, Russia). The author is grateful to Svetlana K. Al-ishaeva, Saida Gisheva, Susana K. Khatkova, and Zarema Meretukova for sharing their language. A manuscript on this topic is in revision for resubmission; link to current version: <https://ling.auf.net/lingbuzz/005469>. The author thanks Karlos Arregi, Vera Gribanova, and Boris Harizanov and three anonymous reviewers for helpful discussion and feedback. This work was funded by the NSF DDRIG #1749299. All mistakes and shortcomings are solely mine.

¹Term coined by Gallego & Uriagereka (2007), but they do not ultimately endorse this as a standalone constraint on extraction.

²The idea of dynamic phasehood, although different in assumptions and implementation, has been proposed by den Dikken (2007); Gallego (2010); Bošković (2014).

Phasehood of a constituent is the result of syntactic intervention for Agree, not transfer to the interfaces; cf. Chomsky (2000, 2001, 2008); Richards (2011); Bošković (2016), a.o.

The Edge Condition is accounted for via locality and intervention, not constraints on computational complexity; cf. Chomsky (2008:147-148).

The evidence: constraints on possessor extraction in West Circassian

West Circassian (or Adyghe; Northwest Caucasian):

- polysynthetic, with multiple verbal ϕ -probes and high degree of synthesis
- syntactically ergative: the absolutive argument moves to c-command the ergative agent (Ershova 2019, 2020b, 2021a)

Possessor extraction:

- ungrammatical out of ergative and applied argument DPs in matrix clauses
- grammatical out absolutive DPs
- in long-distance wh-movement from embedded clauses, grammatical out of all types of arguments, including ergative and applied arguments

Desiderata for a successful analysis:

- explain the contrast between absolutive and non-absolutive arguments
- explain the contrast between islandhood effects in matrix and embedded contexts
- connect the analysis to other properties of the language

The analysis in a nutshell:

- Wh-movement out of a phase is possible if that phase has independently entered Agree with the wh-movement triggering head (C^0) *prior* to wh-probing.
- Otherwise, the phase and its edge are opaque for subextraction.
- Ergative and applied argument DPs are merged and licensed at phase edges: Spec, v P and Spec,ApplP; the absolutive argument is not.
- Contrast between matrix and embedded clauses:

- polypersonal agreement and polysynthetic word-formation are licensed by Agree with C³
- the wh-feature on matrix C⁰ probes *prior* to the polysynthetic agreement feature, triggering an intervention effect
⇒ phase edges are opaque for subextraction
- in long-distance wh-movement, movement to embedded Spec,CP is triggered last resort for successive cyclic movement *after* the polysynthetic agreement feature
⇒ the lower phase heads do not trigger an intervention effect

Roadmap:

- 2 Background on West Circassian wh-movement
- 3 Constraints on possessor extraction
- 4 The analysis: Agree-based phasehood
- 5 Conclusion

2 Background on West Circassian wh-movement

2.1 Basic clause structure

- polysynthesis (Kumakhov 1964; Kumakhov & Vamling 2009; Testelelets 2009; Korotkova & Lander 2010; Lander & Letuchiy 2010; Lander 2017; Lander & Testelelets 2017, *inter alia*):

- (1) sə- qə- p- f- a- r- jə- be- λeβ^{wə} -β
 1SG.ABS- DIR- 2SG.IO- BEN- 3PL.IO- DAT- 3SG.ERG- CAUS- see -PST
 ‘He showed me to them for your sake.’ (Korotkova & Lander 2010:301)

- ergativity in verbal indexing

- (2) | Absolutive- | Applied object- Applicative- | Ergative- |

- possessors are cross-referenced on the noun:

- (3) s-šəpχ^{wə}xer
 1SG.POSS-sister.PL.ABS
 ‘my sisters’

- (4) **t-jə-ɸ^wəneɸ^wəxem**
1PL.POSS-ALIEN-neighbor.PL.OBL
 ‘our neighbors’

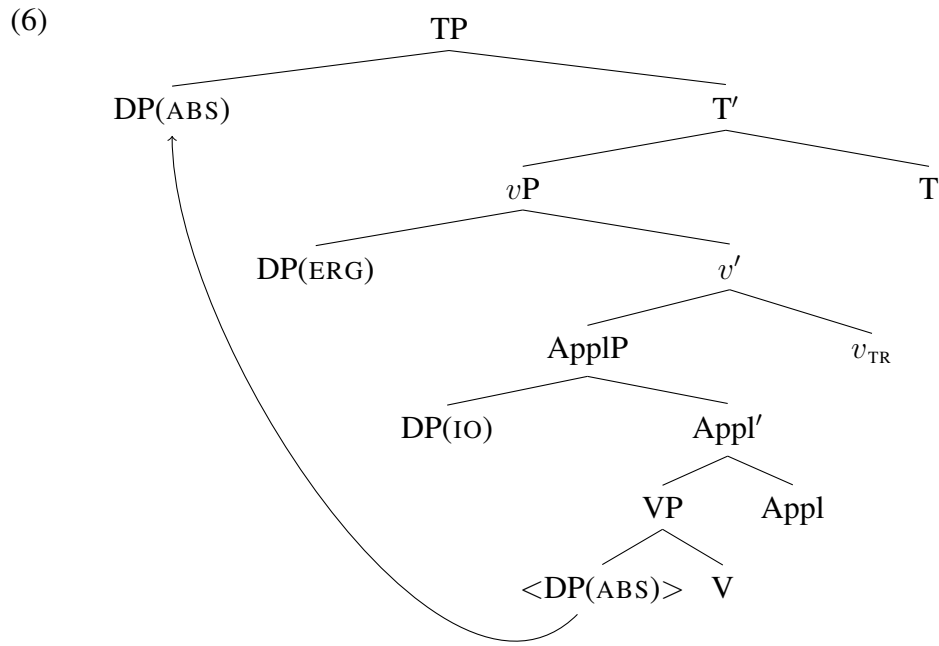
- ergativity in case marking

absolutive *-r*: subject of intransitive verb (5a)
 theme of transitive verb (5b)

oblique *-m*: agent of transitive verb (5b)
 applied objects (5c)
 possessors (5d)
 complements of postpositions (5e)

- (5) a. **mə pšaše-r(ABS) jane paje Ø-qaš^we**
 this girl-ABS 3PL.POSS+mother for 3ABS-dance
 ‘The girl is dancing for her mother.’
- b. **sjəpšašexe-m(ERG) nəsxapexe-r(ABS)**
 1SG.POSS.girl.PL-OBL doll.PL-ABS
 Ø-a-fepəx
 3ABS-3PL.ERG-dress.PST.PL
 ‘My daughters dressed the dolls.’
- c. **mə ɟ’ale-r(ABS) bere jəʔahəlxe-m(IO) telefonç’e**
 this boy-ABS much 3SG.POSS.relative.PL-OBL telephone.INS
 Ø-a-fe-tjew
 3ABS-3PL.IO-BEN-hit.PRES
 ‘This boy calls (lit. rings for) his relatives on the telephone a lot.’
- d. **pšaše-m Ø-jə-pšešer^w**
 girl-OBL 3SG.POSS-ALIEN-female.friend
 ‘the girl’s friend’
- e. **mə š^wəzə-m paje**
 this woman-OBL for
 ‘for this woman’

- Indefinite nouns, possessed nouns in the singular, proper names and personal pronouns are generally unmarked for case (Arkadiev et al. 2009:51-52; Arkadiev & Testelet 2019).
- West Circassian is a high absolutive language, based on anaphor binding and parasitic gaps (Ershova 2019, 2020b, 2021a)

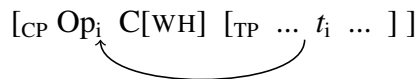


2.2 Relative clauses

Per Lander (2009a,b, 2012); Caponigro & Polinsky (2011); Ershova (2021a)

Relativization is the only type of wh-movement.

(7) General structure of relative clauses (Caponigro & Polinsky 2011):



- ϕ -agreement referring to the relativized participant replaced by **wh-agreement** (Caponigro & Polinsky 2011; see also O’Herin 2002; Baier 2018 on Abaza):

$z(\Theta)$ - = ergative agents, applied objects, and possessors

\emptyset - = absolutive arguments

Ergative agent:

- (8) a. **mə ɕ’ale-m_i(ERG)** ə-š velosjəped
this boy-OBL 3SG.POSS-brother bicycle
 \emptyset - \emptyset - r- **jə-** tə -ɛ
 3ABS- 3SG.IO- DAT- **3SG.ERG-** give -PST
 ‘This boy gave a bicycle to his brother.’

b. marə ʧ'al-ew [RC Op_i t_i(ERG) ə-š velosjəped
 here boy-ADV 3SG.POSS-brother bicycle
 Ø- Ø- je- zə- tə -be] -r
 3ABS- 3SG.IO- DAT- WH.ERG- give -PST -ABS

'Here is the boy that gave a bicycle to his brother.'

Possessor:

(9) marə š'əz-ew [RC Op_i [DP t_i(POSS) z-jə-pšaše] dax-ew
 here woman-ADV WH.POSS-ALIEN-girl good-ADV
 Ø-qa-š'w-e-re] -r
 3ABS-DIR-dance-PRES -ABS

'Here is the woman whose daughter dances well.'

Absolutive argument:

(10) a. ha-r Ø-jə-xozjajən Ø- Ø- je- ceqa -b
 dog-ABS 3SG.POSS-ALIEN-owner 3ABS- 3SG.IO- DAT- bite -PST
 'The dog bit its owner.'

b. se səš'eš'əne ha-w [RC Op_i t_i(ABS) Ø-jə-xozjajən
 I fear dog-ADV 3SG.POSS-ALIEN-owner
 Ø- Ø- je- ceqa -be] -m
 WH.ABS- 3SG.IO- DAT- bite -PST -OBL

'I fear the dog that bit its owner.'

- **Nominal head** (i) appears to the left of relative clause with -ew (ADV) case marking; (ii) to the right with regular case marking; (iii) is null (in headless relative clauses).

Nominal head to the right of the relative clause:

(11) [RC Op_i t_i(ERG) Ø-jə-šanwənče Ø- xe- zə- wətə -be]
 3SG.POSS-ALIEN-window 3ABS- LOC- WH.ERG- break -PST
 ʧ'ale-r marə
 boy-ABS here

'Here is the boy that broke his window.'

Headless relative clause:

(12) [RC Op_i aslan t_i(IO) Ø- zə- fae -zepətə] -m
 Aslan 3ABS- WH.IO- want -HABIT -OBL
 ə-š-xe-r fajep
 3SG.POSS-brother-PL-ABS don't want

‘[What Aslan always wants] his brothers don’t want.’

Syntax of relative clauses, per O’Herin (2002) on Abaza, Caponigro & Polinsky (2011); Ershova (2021a) on West Circassian:

- Relativization of all types of arguments involves wh-movement and wh-agreement: Ø- for absolutive and *zə-* for all other arguments.⁴
- There is no overt relative pronoun, i.e. the wh-movement is covert and can be diagnosed by (i) islandhood sensitivity and (ii) the ability of the moved operator to license parasitic gaps (see Appendix A)

3 Constraints on possessor extraction

Summary of the data:⁵

- possessor extraction is grammatical out of absolutive DPs
- ergative and applied arguments are islands for possessor extraction
- the islandhood of non-absolutive DPs is ameliorated in long-distance wh-movement configurations

3.1 Clausebound possessor extraction

- Possessor extraction is the only type of productive wh-movement from within nominal constituents.
- Generalization for clause-bound wh-movement:

(13) **CONSTRAINT ON POSSESSOR EXTRACTION (PREMILINARY).** A possessor may be extracted only from an absolutive argument; other types of clausal arguments are adjuncts.

⁴See Lander (2009a,b, 2012); Lander & Daniel (2020) for an alternative analysis of *zə-* as a morphologically expressed relative or resumptive pronoun.

⁵The constraints outlined here are subject to dialectal variation. E.g. the majority of speakers Lander (2012) consulted allow possessor extraction from all types of arguments, and a small set of speakers disallow possessor extraction from non-absolutive arguments. The speakers that I consulted for this project uniformly disallow possessor extraction from non-absolutive arguments, and the analysis proposed here is solely concerned with this, more restrictive, version of West Circassian.

✓ **possessor extraction from absolutive external argument**

- (14) marə š^wəz-ew [RC Op_i [DP t_i(POSS) z-jə-pšaše] dax-ew
 here woman-ADV **WH.POSS-ALIEN-girl** good-ADV
 Ø-qa-š^we-re] -r
 3ABS-DIR-dance-PRES -ABS
 ‘Here is the woman whose daughter dances well.’

✓ **possessor extraction from absolutive internal argument**

- (15) mwarə [RC š^wəz-ew_i [DP t_i(POSS) zə-q^we](ABS) hapse-m
 here woman-ADV **WH.POSS-son** prison-OBL
 Ø-Ø-č-a-za-be] -r
 3ABS-3IO.SG-LOC-3PL.ERG-throw-PST -ABS
 ‘Here is the woman whose son they threw in jail.’

***possessor extraction from ergative external argument (→ pseudocleft repair)⁶**

- (16) a. [mə bzəlfəbe-m(POSS) Ø-jə-č’ale](ERG) dax-ew
 this woman-OBL **3SG.POSS-ALIEN-boy** beautiful-ADV
 wered(ABS) Ø-q-j-e-ɽ^we
 song 3ABS-DIR-3SG.ERG-PRES-sing
 ‘This woman’s son sings well.’
- b. * xet-a [Op_i [t_i(POSS) z-jə-č’ale](ERG) dax-ew
 who-Q **WH.POSS-ALIEN-boy** beautiful-ADV
 wered(ABS) Ø-q-ə-ɽ^we-re] -r
 song 3ABS-DIR-3SG.ERG-sing-PRES -ABS
 Intended: ‘Whose son sings well?’
- c. xet-a [Op_i [t_i(POSS) z-jə-č’ale](ABS) [RC Op_i t_j(ERG)
 who-Q **WH.POSS-ALIEN-boy**
 wered(ABS) Ø-qe-zə-ɽ^we-re-r]]
 sing 3ABS-DIR-**WH.ERG**-sing-PRES-ABS
 ‘Whose son sings well. (lit. Whose son is the one who sings well?)’

⁶See Ershova 2021a for evidence that this is a pseudocleft.

***possessor extraction out of applied argument⁷**

- (17) a. [mwe š^wəzə-m(POSS) ə-q^we](IO) č'elejeɓaʒe-r(ABS)
 this woman-OBL WH.POSS-son teacher-ABS
 Ø-Ø-je-çeça-ɓ
 3ABS-3SG.IO-DAT-scold-PST
 'The teacher scolded this woman's son.'
- b. * mwarə [RC š^wəz-ew_i [t_i(POSS) zə-q^we](IO) č'elejeɓaʒe-r(ABS)
 here woman-ADV WH.POSS-son teacher-ABS
 Ø-Ø-je-çeça-ɓe] -r
 3ABS-3SG.IO-DAT-scold-PST -ABS
 Intended: 'Here is the woman whose son the teacher scolded.'
- c. mwarə [RC š^wəz-ew_i [t_i(POSS) zə-q^we](ABS) [RC Op_j t_j(IO)
 here woman-ADV WH.POSS-son
 č'elejeɓaʒe-r(ABS) Ø-z-e-çeça-ɓe-r]]
 teacher-ABS 3ABS-WH.IO-DAT-scold-PST-ABS
 lit. 'Here is the woman whose son is the one whom the teacher scolded.'

3.2 Long-distance possessor extraction

Based on long-distance wh-movement, revised generalization on possessor extraction:

- (18) **CONSTRAINT ON POSSESSOR EXTRACTION (FINAL).** Non-absolutive DPs behave as islands if they appear within the same clause (CP) as the wh-movement triggering C⁰.

Example of (non-possessor) long-distance wh-movement:

- (19) xet-a [RC Op_i we [CP t_i(IO) wə-z-š'ə-tχ^wə-n-ew]
 who-Q you 2SG.ABS-WH.IO-LOC-praise-MOD-ADV
 Ø-je-b-ɓe-ž'a-ɓe] -r
 3ABS-DAT-2SG.ERG-CAUS-begin-PST -ABS
 'Who did you begin to praise?'

⁷See Appendix B for other types of applied arguments.

✓ long-distance wh-movement from ergative external argument (→ no islandhood effect)

- (20) xet-a [RC Op_i [CP [DP t_i(POSS) z-jə-sabəj-xe-m](ERG)
 who-Q WH.POSS-ALIEN-child-PL-OBL
 wered(ABS) Ø-q-a-ɪ^we-n-ew]
 song 3ABS-DIR-3PL.ERG-say-MOD-ADV
 Ø-wə-mə-de-re] -r
 3ABS-2SG.ERG-NEG-consent-PRES -ABS
 lit. 'Whose did you not consent for __ children to sing?'

✓ long-distance wh-movement from applied argument (→ no islandhood effect)

- (21) marə [RC ŝ^wəz-ew_i [CP [DP t_i(POSS) z-jə-pŝaŝe](IO)
 here woman-ADV WH.POSS-ALIEN-girl
 sə-Ø-fə-tje-we-n-ew]
 1SG.ABS-3SG.IO-BEN-LOC-hit-MOD-ADV
 Ø-je-z-ɛ-ž'a-ɛ] -r
 3ABS-DAT-3SG.ERG-CAUS-begin-PST -ABS
 lit. 'Here is the woman whose I began to call __ daughter.'

Summary:

- Absolutive DPs are not islands for possessor extraction.
- Ergative and applied argument DPs are islands for possessor extraction in clausebound wh-movement configurations, but not in long-distance movement configurations.

4 Agree-based phasehood, locality, and the Edge Condition

The proposal:

Selective DP islandhood effects in West Circassian provide evidence for an Agree-based model of syntactic domains and phase boundaries (Rackowski & Richards 2005; Van Urk & Richards 2015; Halpert 2019):

- Islandhood of DP_{erg} and DP_{io} depends on agreement properties of C^0 and the heads that select for the corresponding arguments: v^0 and $Appl^0$ respectively.
- v^0 and $Appl^0$ are phase heads; DP_{erg} and DP_{io} are merged at the phase edges.
- The internal contents of the phase edge are opaque for syntactic operations per Chomsky (2008).
- If v^0 and $Appl^0$ have successfully agreed with wh-movement triggering C^0 , they do not behave as phases and their phase edge is correspondingly accessible for subextraction.

Existing analyses of selective DP islandhood cannot account for West Circassian data:

- islandhood as a result of subadjacency violations = too many phase boundaries crossed (Chomsky 1973 *et seq.*).
- islandhood connected to ungoverned (specifier) status of DP (Huang 1982; Takahashi 1994; Stepanov 2001)
- moved DPs are islands (Boeckx 2003; Bošković 2018)
- DPs that have been agreed with are islands (Gallego & Uriagereka 2007; Gallego 2010)
- DPs that have not been agreed with are islands (Branan 2018)
- non-absolutive DPs are structurally larger than absolutive DP (= PPs); cf. Polinsky (2016)

Each of these approaches faces problems in accounting for the basic contrast: absolutive DPs versus non-absolutive DPs; see Ershova (2020a).

More importantly: Cannot explain lack of islandhood effect with long-distance wh-movement from embedded CP.

*Embedded and matrix CPs are structurally identical: no difference in argument licensing, case or agreement properties.

4.1 Agree-based phasehood and intervention

Rackowski & Richards's (2005) Agree-based phasehood:

- Phases may be made transparent for subextraction if they enter an independent agreement relation with the head that attracts the extracted element.
- All and only phases may undergo syntactic movement, per Chomsky (2000, 2001).
- \Rightarrow For any movement-triggering operation, any phase acts as a potential goal.
- Per standard locality constraints, only the *closest* goal may successfully satisfy the feature on the movement probe.
- If the closest goal cannot satisfy the feature on the movement probe, defective intervention is triggered, resulting in ungrammaticality.⁸
- Theoretical assumptions from Rackowski & Richards (2005:582):

- (22) a. A probe must Agree with the *closest* goal α that *can move*.
b. A goal α *can move* if it is a phase.
c. Once a probe P is related by Agree with a goal G, P can ignore G for the rest of the derivation (Richards 1998; Hiraiwa 2001).

My additions to Rackowski & Richards (2005):

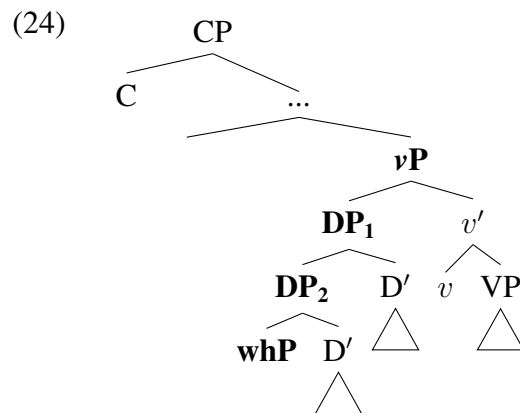
- To capture the Edge Condition:

(23) **Modified definition of *closest* from Rackowski & Richards (2005:579); my addition is in boldface:**

A goal α is the closest one to a given probe if there is no distinct goal β such that for some **distinct** X (X a head or maximal projection), X c-commands **or dominates** α but does not c-command **or dominate** β .

⁸Only in the case of an unsatisfied movement feature; failed agree that does not require movement does not necessarily result in ungrammaticality (Preminger 2014).

E.g. if vP is a phase, only DP_1 in $Spec, vP$ can undergo movement; any constituent embedded within DP_1 (e.g. DP_2 or whP) is inaccessible for extraction:



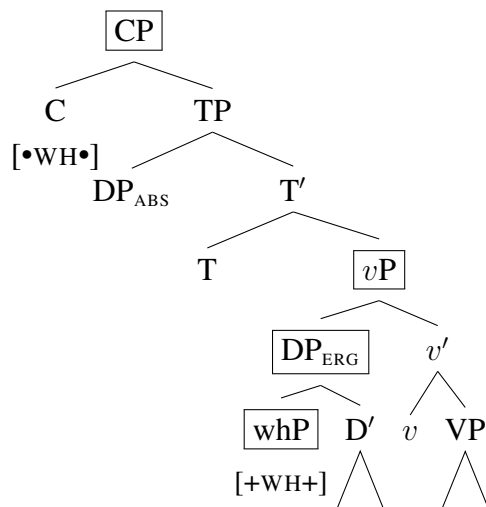
- Two types of probe features (Heck & Müller 2007; Müller 2010, a.o.):

Agree	*F*	trigger agreement without movement
Structure-building	•F•	trigger external or internal Merge

- Probe features are hierarchically ordered and only the highest feature in the hierarchy is visible for syntactic operations per Georgi & Müller (2010); Müller (2010); Martinović (2015); Ershova (2019).
- Goal features may be specified as ‘movement-type’ (labeled here as +F+): they must be checked by a structure-building feature.
- For successive cyclic A'-movement through phase edges (see e.g. Chomsky 2000, 2001, 2008):
 At the time a phase is formed, a structure-building edge feature (•+•) may be added to the phase head to trigger movement of the corresponding goal to the phase edge. This edge feature is inserted *after* all other featural requirements of the phase head are satisfied, per Chomsky (2008) and counter to Heck & Müller (2003); Müller (2010, 2011).
- CP, vP , ApplP, and DP are phases (Chomsky 2000, 2001; Legate 2003; McGinnis 2000, 2001, a.o.)

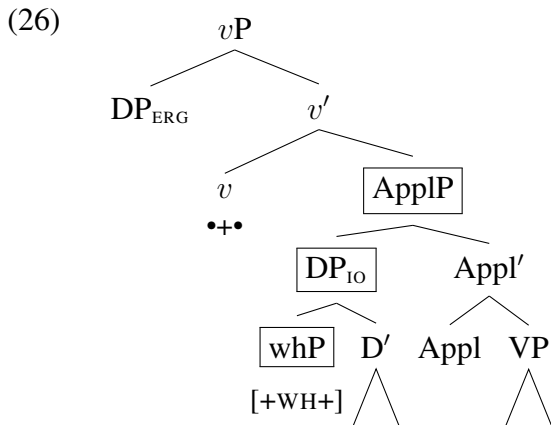
***possessor extraction from ergative DP:**

(25)



- C^0 probes with the $[\bullet WH \bullet]$ feature, and the possessor within the ergative DP bears the matching $[+WH+]$ feature.
- There are two eligible goals for C^0 : the vP phase and the DP at the edge of this phase.
- vP and DP cannot move because this requires pied-piping ($[+WH+]$ is embedded), which is disallowed in West Circassian.
- The possessor in DP_{erg} is not an eligible goal: vP is an intervener.
- \Rightarrow The possessor is trapped within the ergative DP.

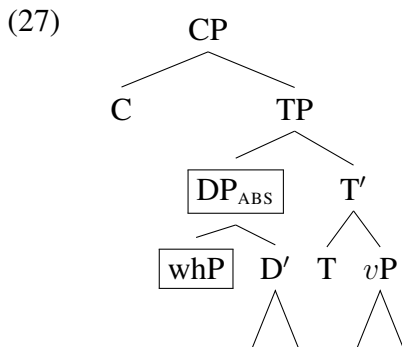
***possessor extraction from applied argument:**



- Movement of possessor from DP_{IO} must pass through $Spec, vP$ (a phase edge).
- Movement to $Spec, vP$ is triggered by the successive cyclic edge feature $[•+•]$.
- $ApplP$ is an intervener for the movement of the possessor from DP_{IO} .
- \Rightarrow the possessor is trapped, triggering an islandhood effect.

✓ possessor extraction from absolutive DP:

no phase boundaries between DP_{ABS} and C^0 .



Summary so far: Islandhood of ergative and applied object DPs can be captured with an Agree-based account of phasehood as intervention.

Upcoming: Evidence for phasehood as intervention for Agree – no islandhood effect if phase successfully agrees.

4.2 Unlocking phases via polysynthesis and the edge feature

The puzzle: Why are ergative and applied argument DPs transparent for subextraction in long-distance wh-movement configurations?

- (28) xet-a [RC Op_i [CP [DP t_i(POSS) z-jə-sabəj-xe-m](ERG)
 who-Q WH.POSS-ALIEN-child-PL-OBL
 wered(ABS) Ø-q-a-ɽ^we-n-ew]
 song 3ABS-DIR-3PL.ERG-say-MOD-ADV
 Ø-wə-mə-de-re] -r
 3ABS-2SG.ERG-NEG-consent-PRES -ABS

lit. ‘Whose did you not consent for __ children to sing?’

✓ long-distance possessor extraction from ergative DP

Rackowski & Richards (2005): in Tagalog agreement between v^0 and direct object unlocks direct object CP for subextraction.

My proposal: In West Circassian, agreement between C^0 and lower verbal phase heads (v^0 and Appl⁰) unlocks vP and ApplP (and, correspondingly, their edges) for subextraction.

- Agreement between C^0 , v^0 and Appl⁰ is connected to polysynthetic morphology.
- Head movement to C^0 is triggered by agreement in the feature [V]:
 - C^0 has the agreement feature [$*V^*$]
 - all other verbal projections bear the corresponding goal feature [V]
 - See e.g. Roberts (2010) for Agree-driven head movement and Biberauer et al. (2014) on applying this approach to polysynthetic languages.⁹
 - C^0 agrees with all verbal projections in its c-command domain via Multiple Agree (Hiraiwa 2001, 2005; Zeijlstra 2004; Nevins 2007, 2011).

- (29) [CP C_[*V*] [TP T_[V] [_{vP} v_[V] [ApplP Appl_[V] [VP V_[V] ...
-

⇒ complex head: C+T+v+Appl+V

⁹This analysis requires placing head movement in the narrow syntax per e.g. Koopman (1984); Travis (1984); Baker (1988); Kayne (1994); Roberts (2010); Arregi & Pietraszko (2020) and counter to e.g. (Chomsky 2001; Embick & Noyer 2001; Harizanov & Gribanova 2019). See Roberts (2010) on differentiating Agree-driven phrase and head movement.

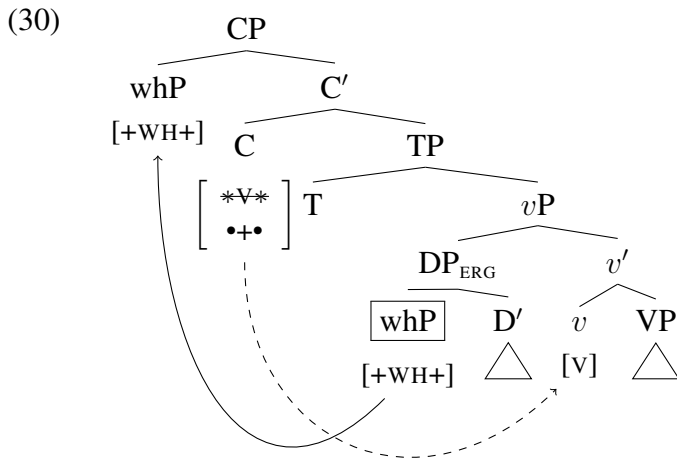
Why are there no DP islandhood effects in embedded clauses?

A combination of two factors:

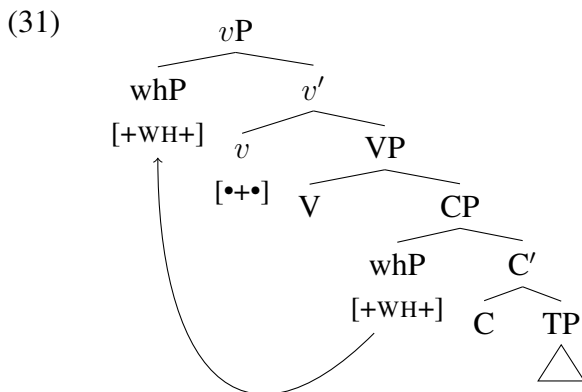
1. the presence of the agreement feature $[*V*]$ on embedded C^0
2. the absence of the wh-movement triggering feature $[\bullet WH \bullet]$ on embedded C^0 (the $[\bullet WH \bullet]$ feature is on matrix C^0)

✓ long-distance possessor extraction from ergative DP

- Embedded C^0 agrees with v^0
- vP is transparent for further probing by C^0
- C^0 attracts whP with edge feature $[+F+]$

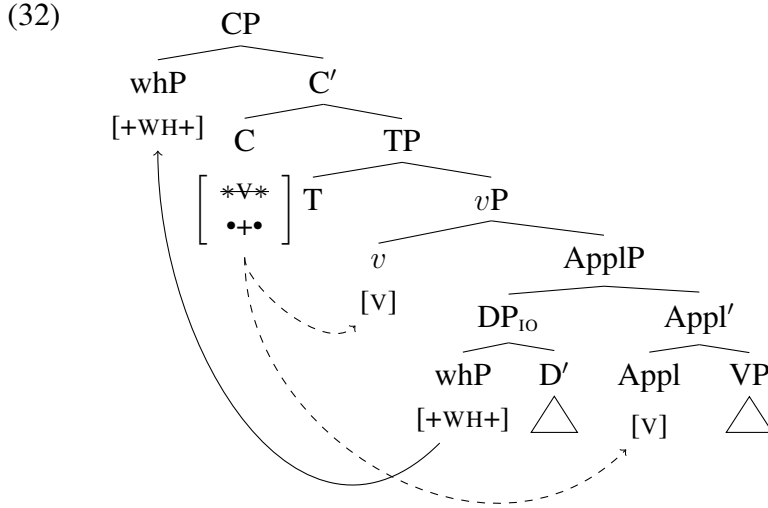


- whP moves from embedded Spec,CP to Spec, vP via successive cyclic movement
- Spec, vP is an eligible goal for $[\bullet WH \bullet]$ on matrix C^0



✓long-distance possessor movement from applied argument

- embedded C^0 agrees in $[v]$ with v , and subsequently Appl^0
- whP within applied argument is attracted to embedded Spec,CP with edge feature $[\bullet\bullet]$



Difference with clausebound extraction:

- matrix C^0 also hosts the $[\ast V \ast]$ feature
- but matrix C^0 also hosts $[\bullet WH \bullet]$, which probes *prior* to $[\ast V \ast]$
- \Rightarrow intervention effect with lower phase heads

5 Conclusion

- West Circassian DP arguments display a puzzling combination of syntactic effects: ergative and applied argument DPs are islands for extraction, but only when they are clausemates of the wh-movement triggering head (C^0).
- A DP becomes an island if merged at a phase edge, rendering the internal structure of the corresponding DPs opaque for subextraction.
- The amelioration of the islandhood effects in embedded contexts provides evidence of an **agree-based model of phasehood**, where phases behave as opaque domains due to them serving as interveners for the probe in question.
- The unusual dynamic/selective DP islandhood is **connected to polysynthesis**: C^0 agrees with all the lower heads in the verbal extended projection, triggering head movement to C^0 and resulting in a morphologically complex predicate.

- As a polysynthetic language, West Circassian presents novel evidence for an Agree-based theory of phasehood, per Rackowski & Richards (2005); Van Urk & Richards (2015); Halpert (2019).

Appendices

A Diagnosing covert wh-movement

Wh-movement is island sensitive:

- (33) a. [RC Op_i wəne(ABS) t_i(ERG) Ø- qə- s- fe- **zə-** še
house 3ABS- DIR- 1SG.IO- BEN- **WH.ERG-** do
-bə] blaɐe-r sa-pe Ø-q-Ø-jə-fa-ɐ
-PST relative-ABS 1SG.PP-front 3ABS-DIR-3SG.IO-LOC-fall-PST
‘I met the relative who built a house for me.’
- b. * səd-a [RC Op_j [RC Op_i t_j(ABS) t_i(ERG) Ø- qə- s- fe-
what-Q 3ABS- DIR- 1SG.IO- BEN-
zə- še -bə] blaɐe-r sa-pe
WH.ERG- do -PST relative-ABS 1SG.PP-front
Ø-q-Ø-jə-fa-bə] -r
3ABS-DIR-3SG.IO-LOC-fall-PST -ABS
Intended: ‘What did I meet the relative who built __ for me?’ (Lander 2012:286-287)

Wh-movement can license parasitic gaps (Ershova 2021a).

- ergative trace licenses a parasitic gap in the adjunct clause:

- (34) marə [RC č'al-ew_i t_i(ERG) varenje Ø- **zə-** šxə -re
here boy-ADV jam 3ABS- **WH.ERG-** eat -PRES
-r [CP pro_i(ERG) s^wəpə-r Ø- ə / **zə-** mə- wəx -ze]]
-ABS soup-ABS 3ABS- **3SG/WH.ERG-** NEG- finish -CNV
‘Here is the boy who is eating jam without finishing the soup.’ (Ershova 2021a)

- absolutive trace licenses a parasitic gap in the adjunct clause:

- (35) marə [RC pšaš-ew_i [CP [pro_i / ___{PG} ə / **zə-**šəpχ^w]
here girl-ADV 3SG/**WH.POSS-**sister
Ø-me-čəje-fe] t_i(ABS) nəsxape-m Ø- Ø- rə-
3ABS-PRES-sleep-LIM doll-OBL **WH.ABS-** 3SG.IO- INS-

žeg^wə -re] -r
play -PRES -ABS

‘Here is the girl who plays with the doll while her sister sleeps.’ (Ershova 2021a)

B Possessor extraction is ungrammatical from all types of applied argument DPs

Experiencer of two-place unaccusative verb: baseline (36a); possessor extraction is ungrammatical (36b); pseudocleft repair strategy (36c).

- (36) a. [mə bzəlfəʔe-m(POSS) Ø-jə-pšaše](IO)
this woman-OBL WH.POSS-ALIEN-girl
sə-Ø-š’ə-ʔəpša-ʔ
1SG.ABS-3SG.IO-LOC-forget-PST
‘This woman’s daughter forgot about me.’
- b. *mə bzəlfəʔe-r arə [RC Op_i [t_i(POSS) z-jə-pšaše](IO)
this woman PRED WH.POSS-ALIEN-girl
sə-Ø-š’ə-ʔəpša-ʔe] -r
1SG.ABS-3SG.IO-LOC-forget-PST -ABS
Intended: ‘This woman is the one whose daughter forgot about me.’
- c. mə bzəlfəʔe-r arə [RC Op_i [t_i(POSS) z-jə-pšaše](ABS)
this woman-ABS PRED WH.POSS-ALIEN-girl
[RC Op_j t_j(IO) sə-z-š’ə-ʔəpša-ʔe-r]]
1SG.ABS-WH.IO-LOC-forget-PST-ABS
lit. ‘This woman is the one whose daughter is the one who forgot about me.’

Indirect object of di-transitive verb: baseline (37a); possessor extraction is ungrammatical (37b); pseudocleft repair strategy (37c).

- (37) a. se(ERG) žeg^wəʔe-r(ABS)
I toy-ABS
Ø-Ø-je-s-tə-ʔ
3ABS-3SG.IO-DAT-1SG.ERG-give-PST
č’ele-čəḵ^wə-m(POSS) ə-š](IO)
boy-small-OBL 3SG.POSS-brother
‘I gave the toy to the boy’s brother.’
- b. *mwarə [RC č’ele-čəḵ^w-ew_i [t_i(POSS) zə-š](IO)
here boy-small-ADV WH.POSS-brother

žeg^waλe-r(ABS) Ø-Ø-je-s-tə-βe] -r
 toy-ABS 3ABS-3SG.IO-DAT-1SG.ERG-give-PST -ABS

Intended: ‘Here is the boy to whose brother I gave the toy.’

- c. mwarə [RC č’ele-čək^w-ew_i [t_i(POSS) zə-š](ABS)
 here boy-small-ADV WH.POSS-brother
 [RC Op_j t_j(IO) žeg^waλe-r(ABS)
 toy-ABS
 Ø-z-e-s-tə-βe-r]]
 3ABS-WH.IO-DAT-1SG.ERG-give-PST-ABS

lit. ‘Here is the boy whose brother is the one to whom I gave the toy.’

High applicative: baseline (38a); possessor extraction is ungrammatical (38b); pseudo-cleft repair strategy (38c).

- (38) a. se(ERG) wered(ABS) [mwe š^wəzə-m(POSS) Ø-jə-č’ale](IO)
 I song this woman-OBL 3SG.POSS-ALIEN-boy
 Ø-qə-Ø-fe-s-ɣ^wa-β
 3ABS-DIR-3SG.IO-BEN-1SG.ERG-say-PST

‘I sang for this woman’s son.’

- b. * marə [RC š^wəz-ew_i [t_i(POSS) z-jə-č’ale](IO) wered(ABS)
 here woman-ADV WH.POSS-ALIEN-boy song
 Ø-qə-Ø-fe-s-ɣ^wa-βe] -r
 3ABS-DIR-3SG.IO-BEN-1SG.ERG-say-PST -ABS

Intended: ‘Here is the woman for whose son I sang.’

- c. marə [RC š^wəz-ew_i [t_i(POSS) z-jə-č’ale](ABS) [RC Op_j t_j(IO)
 here woman-ADV WH.POSS-ALIEN-boy
 Ø-qe-zə-fe-s-ɣ^wa-βe-r]]
 3ABS-DIR-WH.IO-BEN-1SG.ERG-say-PST-ABS

lit. ‘Here is the woman whose son is the one for whom I sang.’

References

- Arkadijev, Peter M. & Yakov G. Testeleťs. 2019. Differential nominal marking in Circassian. *Studies in Language* 43 (3): 715–751.
- Arkadijev, P. M., Yu. A. Lander, A. B. Letuchiy, N. R. Sumbatova & Ya. G. Testeleťs. 2009. Vvedeniye. Osnovnyye svedeniya ob adygejskom jazyke [Introduction: Basic information on Adyghe]. In *Aspekty polisintetizma: Očerki po grammatike adygejskogo jazyka*, ed. Ya. G. Testeleťs, 17–120. Moscow: RGGU.
- Arregi, Karlos & Asia Pietraszko. 2020. The ups and downs of head displacement. *Linguistic Inquiry. Early Access*. doi:10.1162/ling_a00377.

- Baier, Nico. 2018. Anti-agreement. PhD diss, UC Berkeley.
- Baker, Mark C. 1988. *Incorporation. A Theory of Grammatical Function Changing*. Chicago/London: University of Chicago Press.
- Biberauer, Theresa, Anders Holmberg, Ian Roberts & Michelle Sheehan. 2014. Complexity in comparative syntax: the view from modern parametric theory. In *Measuring grammatical complexity*, eds. Laurel B. Preston & Frederick J. Newmeyer. OUP.
- Boeckx, Cedric. 2003. *Islands and chains: Resumption as stranding*. John Benjamins.
- Bošković, Željko. 2014. Now i'm a phase, now i'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45 (1): 27–89.
- Bošković, Željko. 2016. What is sent to spell-out is phases, not phasal complements. *Linguistica* 56 (1): 25–66.
- Bošković, Željko. 2018. On extraction out of inherently case-marked elements. In *Proceedings of FASL 25*, eds. Wayles Browne, Miloje Despic, Naomi Enzina, Simone Harmath-de Lemos, Robin Karlin & Draga Zec, 57–78. Michigan Slavic Publications.
- Branan, Kenyon. 2018. Attraction at a distance: \bar{A} -movement and case. *Linguistic Inquiry* 49 (3): 409–440.
- Caponigro, Ivano & Maria Polinsky. 2011. Relative embeddings: A Circassian puzzle for the syntax/semantics interface. *NLLT* 29(1): 71–122.
- Chomsky, Noam. 1973. Conditions on transformations. In *A festschrift for Morris Halle*, eds. Stephen Anderson & Paul Kiparsky, 232–286. Holt, Rinehart & Winston.
- Chomsky, Noam. 2000. Minimalist inquiries: the framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, eds. Roger Martin, David Michaels & Juan Uriagereka, 89–155. MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. Michael Kenstowicz. MIT Press.
- Chomsky, Noam. 2008. On phases. In *Foundational issues in linguistic theory*, eds. Robert Freidin, Carlos P. Otero & Maria Luisa Zubizarreta, 133–166. MIT Press.
- den Dikken, Marcel. 2007. Phase extension: Contours of a theory of the role of head movement in phrasal extraction. *Theoretical Linguistics* 33: 1–41.
- Embick, David & Rolf Noyer. 2001. Movement operations after syntax. *Linguistic Inquiry* 32: 555–595.
- Ershova, Ksenia. 2019. Syntactic ergativity in West Circassian. PhD diss, University of Chicago.
- Ershova, Ksenia. 2020a. Phasehood as defective intervention: Possessor extraction and selective DP islandhood in West Circassian. Ms. <https://ling.auf.net/lingbuzz/005469>.
- Ershova, Ksenia. 2020b. Syntactic ergativity and the theory of subjecthood: Evidence from anaphor binding in West Circassian. Ms. <https://ling.auf.net/lingbuzz/005168>.
- Ershova, Ksenia. 2021a. Diagnosing clause structure in a polysynthetic language: Wh-agreement and parasitic gaps in West Circassian. *Linguistic Inquiry* 52 (1): 1–38. doi:10.1162/ling_a00371.
- Ershova, Ksenia. 2021b. Multiple feature inheritance makes polysynthesis: Evidence from West Circassian nominalizations.
- Gallego, Ángel J. 2010. *Phase theory*. John Benjamins.
- Gallego, Ángel J. & Juan Uriagereka. 2007. Conditions on sub-extraction. In *Corefer-*

- ence, modality, and focus: *Studies on the syntax-semantics interface*, eds. Luis Eguren & Olga Fernández-Soriano, 45–70. John Benjamins.
- Georgi, Doreen & Gereon Müller. 2010. Noun phrase structure by reprojection. *Syntax* 13: 1–36.
- Halpert, Claire. 2019. Raising, unphased. *Natural Language and Linguistic Theory* 37: 123–165.
- Harizanov, Boris & Vera Griбанова. 2019. Whither head movement? *Natural Language and Linguistic Theory* 37: 461–522.
- Heck, Fabian & Gereon Müller. 2003. Derivational optimization of wh-movement. *Linguistic Analysis* 33: 97–148.
- Heck, Fabian & Gereon Müller. 2007. Extremely local optimization. In *Proceedings of WECOL34*, eds. Erin Bainbridge & Brian Agbayani, 170–182.
- Hiraiwa, Ken. 2001. Multiple Agree and the Defective Intervention Constraint in Japanese. In *The proceedings of HUMIT 2000*, eds. Ora Matushansky, Albert Costa, Javier Martin-Gonzalez, Lance Nathan & Adam Szczegielniak, 67–80. MITWPL.
- Hiraiwa, Ken. 2005. Dimensions of symmetry in syntax: agreement and clausal architecture. PhD diss, MIT.
- Huang, Cheng-Teh James. 1982. Logical relations in Chinese and the theory of grammar. PhD diss, MIT.
- Kayne, Richard. 1994. *The antisymmetry of syntax*. MIT Press.
- Koopman, Hilda. 1984. The syntax of verbs: From verb movement rules in the Kru languages to Universal Grammar. PhD diss, Tilburg University.
- Korotkova, Natalia & Yury Lander. 2010. Deriving affix ordering in polysynthesis: Evidence from Adyghe. *Morphology* 20: 299–319.
- Kumakhov, M. A. 1964. *Morfologija adygskix jazykov: sinxronno-diaxronnaja xarakteristika* [*Morphology of Circassian languages: synchronic and diachronic description*]. Kabardino-Balkarskoe knižnoe izdatelstvo.
- Kumakhov, Mukhadin & Karina Vamling. 2009. Circassian clause structure. In *Caucasus studies I. School of International Migration and Ethnic Relations*. Malmö University.
- Lander, Yury. 2009a. Množestvennaja reljativizacija: podlinnaja i mnimaja [Multiple relativization: genuine and imaginary]. In *Aspekty polisintetizma: Očerki po grammatike adygejskogo jazyka*, ed. Ya. G. Testelets, 612–653. Moscow: RGGU.
- Lander, Yury. 2009b. Subject properties of the Adyghe absolutive: Evidence from relatives. Ms..
- Lander, Yury. 2012. Reljativizacija v polisintetičeskom jazyke: adygejskie otnositel’nye konstrukcii v tipologičeskoj perspektive [Relativization in a polysynthetic language: Adyghe relative clauses in a typological perspective]. PhD diss, Russian State University for the Humanities.
- Lander, Yury. 2017. Nominal complex in West Circassian: Between morphology and syntax. *Studies in Language* 41 (1): 76–98.
- Lander, Yury & Michael Daniel. 2020. West Caucasian relative pronouns as resumptives. *Linguistics (Ahead of Print)*. doi:10.1515/ling-2020-2003.
- Lander, Yury & Alexander Letuchiy. 2010. Kinds of recursion in Adyghe morphology. In *Recursion and Human Language*, ed. Harry van der Hulst, 263–284. De Gruyter Mouton.
- Lander, Yury A. & Yakov G. Testelets. 2017. Adyghe (Northwest Caucasian). In *The Ox-*

- ford handbook of polysynthesis*, eds. Michael Fortescue, Marianne Mithun & Nicholas Evans, 948–970. Oxford University Press.
- Legate, Julie Anne. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34.3: 506–516.
- Martinović, Martina. 2015. Feature geometry and head-splitting: Evidence from the Wolof clausal periphery. PhD diss, University of Chicago.
- McGinnis, Martha. 2000. Phases and the syntax of applicatives. In *NELS 31*, eds. Min-Joo Kim & Uri Strauss, 333–349. GLSA.
- McGinnis, Martha. 2001. Variation in the phase structure of applicatives. *Linguistic Variation Yearbook* 1: 105–146.
- Müller, Gereon. 2010. On deriving CED effects from the PIC. *Linguistic Inquiry* 41 (1): 35–82.
- Müller, Gereon. 2011. *Constraints on displacement: A phase-based approach*. John Benjamins.
- Nevins, Andrew. 2007. The representation of third person and its consequences for person-case effects. *Natural Language & Linguistic Theory* 25 (2): 273–313.
- Nevins, Andrew. 2011. Multiple agree with clitics: Person complementarity vs. omnivorous number. *Natural Language and Linguistic Theory* 29 (4): 939–971.
- O’Herin, Brian. 2002. *Case and agreement in abaza*. SIL International / University of Texas at Arlington.
- Polinsky, Maria. 2016. *Deconstructing ergativity: Two types of ergative languages and their features*. Oxford University Press.
- Preminger, Omer. 2014. *Agreement and its failures*. MIT Press.
- Rackowski, Andrea & Norvin Richards. 2005. Phase edge and extraction: A Tagalog case study. *Linguistic Inquiry* 36 (4): 565–599.
- Richards, Marc. 2011. Deriving the edge: What’s in a phase? *Syntax* 14: 74–95.
- Richards, Norvin. 1998. The Principle of Minimal Compliance. *Linguistic Inquiry* 29: 599–629.
- Roberts, Ian. 2010. *Agreement and head movement: Clitics, incorporation, and defective goals*. The MIT Press.
- Ross, John Robert. 1967. Constraints on variables in syntax. PhD diss, MIT.
- Stepanov, Arthur. 2001. Cyclic domains in syntactic theory. PhD diss, University of Connecticut.
- Takahashi, Daiko. 1994. Minimality of movement. PhD diss, University of Connecticut.
- Testeleťs, Ya. G., ed. 2009. *Aspekty polisintetizma: Očerki po grammatike adyghejskogo jazyka [Aspects of polysynthesis: Sketches on the grammar of Adyghe]*. Moscow: RGGU.
- Travis, Lisa deMena. 1984. Parameters and effects of word order variation. PhD diss, MIT.
- van Urk, Coppe & Norvin Richards. 2015. Two components of long-distance extraction: Successive cyclicity in Dinka. *Linguistic Inquiry* 46 (1): 113–155.
- Zeijlstra, Hedde. 2004. *Sentential negation and negative concord*. LOT.