

# Diagnosing Clause Structure in a Polysynthetic Language:

## Wh-Agreement and Parasitic Gaps in West Circassian

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**Abstract.** This paper identifies and tests a novel diagnostic for clause structure in West Circassian, a polysynthetic language with ergative alignment. The diagnostic concerns an unusual construction involving multiple wh-agreement in relative clauses. I argue that wh-agreement morphology uniformly tracks agreement with a wh-trace, and sentences with more than one instance of wh-agreement are surface manifestations of a parasitic gap dependency. Once multiple wh-agreement is understood in this theoretically familiar light, it can be used as a powerful tool for diagnosing asymmetries between various constituents in the West Circassian clause. By appealing to well-known constraints on parasitic gap licensing, the paper demonstrates that the absolutive DP raises to a position c-commanding other clausemate DPs, and applied objects may undergo optional scrambling to a position above the ergative agent.

**Keywords:** wh-agreement, parasitic gaps, syntactic ergativity, West Circassian

### 1 Introduction

Polysynthetic languages pose a unique challenge for syntactic analysis in that they often lack the usual structural cues such as word order restrictions, nominal case and free-standing anaphors, but often display non-trivial morphological cues, which, if understood correctly, can be used as a productive tool for diagnosing syntactic operations. This paper presents such a case study: West Circassian (also known as Adyghe, of the Northwest

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This paper is based on data from the Temirgoy dialect of West Circassian, collected in Maykop and the Khatazhukay rural settlement (Republic of Adyghea, Russia). The author thanks the speakers of West

Caucasian family) is generally classified as polysynthetic, with verbs hosting prefixes corresponding to all the participants of a predication, possessor marking on the possessum, prominent pro-drop, and a system of two morphological case markers which are omitted in certain environments. Relativization, which is the only type of wh-movement in the language, manifests itself first and foremost in the morphological make-up of the predicate or nominal carrying cross-reference morphology relating to the relativized participant, with a special wh-agreement marker appearing in place of  $\phi$ -agreement with that participant. A peculiar property of constructions involving relativization in West Circassian is that they may contain more than one reflex of wh-agreement if the relativized participant is co-referent to another argument in the relative clause, rendering what is labeled throughout the paper as a *multiple wh-agreement* configuration.

This paper argues that multiple wh-agreement is best analyzed as the morphological reflex of a parasitic gap dependency, with one of the wh-markers expressing agreement with a parasitic wh-trace. This analysis is supported by the fact that West Circassian multiple wh-agreement constructions share all the core properties of parasitic gap structures: (i) one of the wh-markers is dependent on the other and cannot appear in its absence; (ii) the additional wh-marker shows selective island sensitivity; (iii) the additional wh-marker cannot refer to a PP-trace; (iv) the additional wh-marker often alternates with a regular third person pronoun. Once multiple wh-agreement constructions are understood as a parasitic gap

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dependency, they can be used as a productive diagnostic for clause structure. In particular, restrictions on multiple wh-agreement provide evidence for the absolutive DP occupying a position c-commanding all other verbal participants, including the ergative agent. Furthermore, possible patterns of multiple wh-agreement, as well as the optionality of multiple wh-agreement in certain configurations, allows us to diagnose optional A-scrambling of the applied object to Spec,*v*P – a position c-commanding the ergative external argument.

The proposed analysis explains in a familiar light a construction that otherwise appears to be very unusual and typologically exceedingly rare, with similar patterns documented only for other languages within the Northwest Caucasian family, Abo (Bantu) and Ibibio (Niger-Congo) (see Lander 2009a; Baier and Yuan 2018 and references therein). This analysis also makes an important contribution to the debate regarding the existence of syntactically ergative languages by using a previously untested structural diagnostic for c-command relations between the ergative and absolutive participants. Finally, this paper presents a novel way of using parasitic gaps as a diagnostic for the A- versus  $\bar{A}$ -nature of scrambling: while the ability to license parasitic gaps is taken as a diagnostic for  $\bar{A}$ -scrambling, the ability of parasitic gaps to appear productively within DPs makes non-trivial predictions for the interaction of A-scrambling and parasitic gap licensing within a scrambled DP.

The remainder of the paper is structured as follows: section 2 provides the necessary background on general clause structure and relative clause formation in West Circassian; section 3 outlines the evidence for a parasitic gap analysis of multiple wh-agreement constructions; section 4 argues for the high position of the absolutive DP based on restrictions on parasitic gaps and the anti-c-command condition; section 5 applies the parasitic gap analysis to diagnose A-scrambling of the applied object, and section 6 concludes.

## 2 Background on West Circassian

This section contains a short introduction to West Circassian clause structure and mechanisms of relativization.

### 2.1 General clause structure

This subsection provides a brief overview of the general morphological and syntactic properties of the West Circassian clause that are necessary for the understanding of relative clause formation.

West Circassian is generally characterized as a polysynthetic language, with prevalent head marking in both the verbal and nominal domains (see Kumakhov 1964; Kumakhov and Vamling 2009; Testelets 2009a; Korotkova and Lander 2010; Lander and Letuchiy 2010; Lander 2017; Lander and Testelets 2017, *inter alia*). Thus, a verbal form includes cross-reference morphology referring to all participants of the event it denotes; for example, the predicate in (1) includes prefixes cross-referencing four participants, from left to right: an absolutive theme, a benefactive applied object, a dative applied object denoting the causee of a transitive base verb, and an ergative agent denoting the causer that is introduced by the causative morpheme *be-*. The markers referring to the applied objects appear alongside applicative prefixes marking the semantic role of the corresponding applied object. The applicative markers may vary based on the theta-role of the applied object (e.g. benefactive *fe-*, comitative *de-*, locative *š'ə-*, etc.).<sup>1</sup>

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<sup>1</sup>The examples are glossed in accordance with the Leipzig conventions, with the following additions: DIR – directive; DYN – present tense on dynamic verbs; LIM – limitative; MOD – modal future; PR – possessor; RE – reflexive.

In line with recent literature on West Circassian, I use the following non-standard symbols for the transcriptions: c = IPA /tʰs/; č = IPA /tʃ/; h = IPA /h/; l = IPA /ɬ/; λ = IPA /ɬ/; š = IPA /ʃ/; ṣ̌ = IPA /ʃ̣/; ž = IPA /ʒ/; ẓ̌ = IPA /ʒ̣/; ʒ = IPA /dʒ/; ẓ̌ = IPA /dʒ̣/; C' = palatalization; Ć = ejective.

- (1) sə- qə- p- f- a- r- jə- be- λeβ<sup>w</sup>ə -β  
 1SG.ABS- DIR- 2SG.IO- BEN- 3PL.IO- DAT- 3SG.ERG- CAUS- see -PST  
 ‘He showed me to them for your sake.’ (Korotkova and Lander 2010:301)

Cross-reference prefixes are strictly ordered in accordance with an ergative alignment system: the personal marker referring to the theme of a transitive verb and the sole argument of an intransitive verb appears in the leftmost position, which is then followed by any cross-reference morphology referring to applied objects, and the marker cross-referencing the ergative agent appears closest to the verbal root. This ordering can be seen most clearly in the presence of the directive prefix *qə-/qe-*, which in these examples is used to mark the directedness of the action.<sup>2</sup> This prefix surfaces to the immediate right of the absolutive personal marker and to the left of the ergative and applied object markers. Thus, the first person cross-reference markers referring to the ergative agent (2a) or applicative indirect object (2b) surface to the right of the directive prefix, while the first person marker referring to the theme of the transitive verb (2c) or the subject of an intransitive verb (2d) appears to the left of the directive prefix. It can be additionally noted that the first person marker referring to the applied object in (2b) appears to the left of the benefactive prefix *f(e)-*, which is then followed by a third person prefix, while in (2a) this same first person prefix marks the ergative agent and thus appears directly adjacent to the verbal root.

- (2) a. Ø- [qə-] [Ø- fe-] s- š’a -β  
 3SG.ABS- DIR- 3SG.IO- BEN- 1SG.ERG- bring -PST  
 ‘**I (transitive subject)** brought him/her to him/her’
- b. Ø- [qə-] [s- f-] jə- š’a -β  
 3SG.ABS- DIR- 1SG.IO- BEN- 3SG.ERG- bring -PST  
 ‘S/he brought him/her **to me (indirect object)**’
- c. sə- [q-] jə- š’a -β  
 1SG.ABS- DIR- 3SG.ERG- bring -PST

<sup>2</sup>The prefix *qə-/qe-* has a number of uses, including marking directionality towards the speaker or inversion in accordance with the personal hierarchy 1 > 2 > 3 (Arkadiev et al. 2009:43; Arkadiev 2017, 2018).

‘S/he brought **me (direct object)**’

- d. sə-      qe-      k<sup>w</sup>a -ɸ  
**1SG.ABS- DIR- go -PST**

‘**I (intransitive subject)** came here’ (Rogava and Keraševa 1966:137-138)

In the nominal domain, possessed nominals are marked with prefixal cross-reference morphology referring to the possessor; in cases of alienable possession this prefix is followed by the possessive marker *jə-*.<sup>3</sup> An example of an inalienably possessed noun is in (3) and of a noun marked with the alienable possessive marker *jə-* is in (4).

- (3) s-šəpχ<sup>w</sup>ə-xe-r  
**1SG.PR-sister-PL-ABS**  
 ‘my sisters’

- (4) t-jə-ɸ<sup>w</sup>əneɸ<sup>w</sup>ə-xe-m  
**1PL.PR-POSS-neighbor-PL-OBL**  
 ‘our neighbors’

West Circassian displays ergative alignment in the domain of case marking as well: the theme of a transitive verb and the single argument of an intransitive verb are marked with the absolutive suffix *-r*, while the ergative agent, as well as any applied objects receive the oblique marker *-m*. Thus, the subject of the intransitive verb *qešen* ‘dance’ (5a) and the theme of the transitive verb *žen* ‘plow’ (5b) are both assigned absolutive case *-r*, while the ergative agent of the latter verb carries the oblique case marker *-m*. Additionally, any indirect objects are assigned oblique case as well, such as the comitative applied object *š<sup>w</sup>əzə* ‘woman’ in (5c). The oblique case suffix *-m* is also used to mark possessors (6a) and complements of postpositions (6b).

- (5) a. č’ale-**r**    Ø-q-e-še  
 boy-**ABS** 3ABS-DIR-DYN-dance  
 ‘The boy is dancing.’  
 b. ž<sup>w</sup>ak<sup>w</sup>e-**m**      q<sup>w</sup>əbɸ<sup>w</sup>e-**r**    Ø-ə-ž<sup>w</sup>a-ɸ  
 plowman-**OBL** field-**ABS** 3ABS-3SG.ERG-plow-PST  
 ‘The plowman plowed the field.’

<sup>3</sup>See Gorbunova (2009) on alienable vs. inalienable possession in West Circassian.

- c.  $\lambda\text{ə-r}$        $\hat{s}^w\text{əzə-m}$        $\emptyset-[\emptyset\text{-d}]\text{-e}\text{?epə}\text{?e}$   
 man-ABS woman-OBL 3SG.ABS-[3SG.IO-COM]-help.DYN  
 ‘The husband is helping the wife.’ (Arkadiev et al. 2009:53)

- (6) a.  $\hat{s}^w\text{əzə-m}$        $\text{ə-q}^w\text{e}$       b.  $m\text{ə}$   $\hat{s}^w\text{əzə-m}$        $p\text{aje}$   
 woman-OBL 3SG.PR-son      this woman-OBL for  
 ‘the woman’s son’      ‘for this woman’

Caponigro and Polinsky (2011) differentiate between the use of the oblique case marker *-m* on ergative DPs and its other uses; Rogava and Keraševa (1966); Arkadiev et al. (2009); Arkadiev and Letuchiy (2011); Lander (2012); Letuchiy (2015); Lander and Testelelets (2017), *inter alia*, provide a uniform treatment for all instances of this marker. In this paper I follow recent work on West Circassian in glossing both case markers as oblique, but follow Caponigro and Polinsky (2011) in assuming that the source of the case differs for the various types of arguments. In cases of potential ambiguity, the examples are labeled accordingly.

Nouns may appear without overt case marking; the lack of case marking is generally associated with indefiniteness. Additionally, possessed nominals in the singular, proper names and personal pronouns generally do not inflect for case (Arkadiev et al. 2009:51-52; Arkadiev and Testelelets 2015). While the order of arguments in a full clause is free, the language is prevalently left-branching: case markers are suffixal; the language has postpositions rather than prepositions; embedded clauses tend to be verb-final, and relative clauses appear to the left of their nominal external head.

Case is assigned in the following way: following Caponigro and Polinsky’s (2011) adaptation of Legate (2008) and Pylkkänen (2008) to West Circassian,  $\text{Appl}^0$  and  $v^0$  assign inherent case to their specifiers – oblique in the former case and ergative in the latter case. Both are spelled out via the same exponent *-m*, which is uniformly glossed as ‘OBL’. Counter to Caponigro and Polinsky (2011), who assume that absolutive case has two distinct structural sources based on syntactic role:  $T^0$  for intransitive subjects and  $v^0$  for direct

objects, I propose here that absolutive case is uniformly assigned by  $T^0$ . I argue in this paper that absolutive case assignment drives movement of the absolutive DP to Spec,TP – a position c-commanding both the ergative agent and any applied objects.

## 2.2 Relative clauses

This subsection outlines the general structure of relative clauses. The morphosyntactic properties of relative clauses in West Circassian, including patterns of multiple wh-agreement, have been documented in detail by Lander (2009a,b, 2012) and analyzed in Minimalist terms by Caponigro and Polinsky (2011); this subsection relies heavily on generalizations made in these papers. Following Caponigro and Polinsky (2011), I propose that relativization in West Circassian involves the movement of a relative operator to Spec,CP. In externally headed relative clauses, the operator is phonologically null, in relative clauses that have been labeled in the literature as internally headed (Lander 2009a, 2012) the relative operator is spelled out as the internal head.

Relativization of non-absolutive participants in West Circassian involves the use of a special relativizing morpheme  $zə$ <sup>4</sup> in place of the regular cross-reference morphology referring to the relativized participant (Lander 2009a, 2012; Caponigro and Polinsky 2011). This is shown in (7): in (7a) the ergative agent triggers third person ergative personal marking ( $ə$ -) on the predicate heading the clause; if that participant is relativized, as in (7b), the corresponding cross-reference morphology is replaced with the prefix  $zə$ . The noun phrase corresponding to the relativized participant surfaces with adverbial marking at the left edge of the relative clause – I take this to be the overt spellout of the relative operator.

- (7) a. **mə ʧ'ale-m<sub>i</sub>(ERG)**  $ə$ -š velosjəped  
           **this boy-OBL**           3SG.PR-brother bicycle

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<sup>4</sup>In accordance with regular morphophonological rules (Arkadiev et al. 2009:27-29), the prefix  $zə$  surfaces as  $z$ - prevocally or before the glide /j/; additionally, the allomorph  $ze$ - is used to mark a dative applied object.



Ø- Ø- r- jə- tə -ɐ  
 3ABS- 3SG.IO- DAT- **3SG.ERG**- give -PST

‘This boy gave a bicycle to his brother.’

- b. marə [č’**al-ew**<sub>i</sub> t<sub>i</sub>(ERG) ə-š velosjəped  
 here **boy-ADV** 3SG.PR-brother bicycle  
 Ø- Ø- je- zə- tə -ɐe] -r  
 3ABS- 3SG.IO- DAT- **WH.ERG**- give -PST -ABS  
 ‘Here is the boy that gave a bicycle to his brother.’

The same pattern arises if an applied object is relativized. Thus, the applied object in (8a) triggers third person singular cross-reference marking that appears adjacent to the benefactive applicative prefix. If this participant is relativized, the corresponding personal marker is replaced with zə- (8b).

- (8) a. mə č’**ele-çək**<sup>w</sup>ə-m Ø-jane Ø- Ø- fe- g<sup>w</sup>əbž -zəpət  
 this boy-small-OBL 3SG.PR-mother 3ABS- **3SG.IO**- BEN- angry -always  
 ‘His mother is always angry at this boy.’
- b. marə [č’**ele-çək**<sup>w</sup>-ew<sub>i</sub> t<sub>i</sub>(IO) Ø-jane Ø- zə- fe- g<sup>w</sup>əbž  
 this **boy-small-ADV** 3SG.PR-mother 3ABS- **WH.IO**- BEN- angry  
 -zəpətə -re] -r  
 -always -DYN -ABS  
 ‘Here is the boy at whom his mother is always angry.’

If a nominal possessor is relativized, the personal cross-reference marker on the possessed nominal is likewise replaced with the marker zə- (9).

- (9) marə [RC š<sup>w</sup>əz-ew<sub>i</sub> [DP t<sub>i</sub>(PR) z-jə-pšaše ] dax-ew  
 here woman-ADV **WH.PR**-POSS-girl good-ADV  
 Ø-qa-š<sup>w</sup>e-re] -r  
 3ABS-DIR-dance-DYN -ABS  
 ‘Here is the woman whose daughter dances well.’

Relativization of an absolutive DP does not involve an overt relativizing morpheme. Since absolutive third person participants do not trigger overt cross-reference morphology,

this means that if an absolutive DP is relativized the predicate heading the clause remains unchanged in terms of cross-reference marking. Thus, the absolutive participant in (10a) triggers null absolutive cross-reference marking on the predicate; if this argument is relativized, the cross-reference morphology on the predicate does not change (10b).

- (10) a. **ha-r** Ø-jə-xozjajən Ø- Ø- je- ceqa -ɸ  
**dog-ABS** 3SG.PR-POSS-owner **3ABS-** 3SG.IO- DAT- bite -PST  
 ‘The dog bit its owner.’
- b. se sə-Ø-š’e-š’əne [ha-w<sub>i</sub> t<sub>i</sub>(ABS) Ø-jə-xozjajən  
 I 1SG.ABS-3SG.IO-LOC-fear **dog-ADV** 3SG.PR-owner  
 Ø- Ø- je- ceqa -ɸe] -m  
**WH.ABS-** 3SG.IO- DAT- bite -PST -OBL  
 ‘I fear the dog that bit its owner.’

Following O’Herin’s (2002) analysis of a similar construction in Abaza (Northwest Caucasian) and Caponigro and Polinsky (2011), I take the morpheme *zə-* to be the spellout of  $\phi$ -agreement with the relativized participant. In line with Baier (2018)<sup>5</sup>, I assume that the  $\phi$ -features are neutralized in this case due to a feature impoverishment rule. Every  $\phi$ -agreement probe hosts the feature [AGR] while a relativized argument bears the feature [WH] alongside regular  $\phi$ -features. After agreement takes place, all  $\phi$ -features on the probe are deleted in the presence of the feature [WH] per the rule in (11a) (adapted from Baier 2018:67). The morpheme *zə-* is then the spellout of agreement with an oblique case-marked wh-element (11b), and the allomorph Ø- is the elsewhere exponent of agreement (11c) – the same null morpheme is used for agreement with third person absolutive arguments.

- (11) a. Impoverishment rule: [ $\phi$ ]  $\rightarrow$  Ø / [\_\_, WH, AGR]  
 b. Oblique wh-agreement: [WH; OBL; AGR]  $\rightarrow$  /zə-/  
 c. Elsewhere case: [AGR]  $\rightarrow$  /Ø-/

<sup>5</sup>See also Stiebels (2006) for a similar analysis of Mayan agent focus, which, like overt wh-agreement in West Circassian, occurs when a non-absolutive argument is extracted.

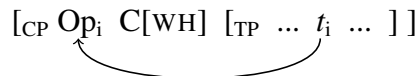


respondingly marked with oblique case. Within the relative clause the predicate is marked with wh-agreement for the relativized participant.

- (13) [RC Op<sub>i</sub> aslan t<sub>i</sub>(IO) Ø- zə- fae -zepətə] -m  
           Aslan                  3ABS- **WH.IO**- want -always -OBL  
 ə-š-xe-r                          Ø-Ø-faj-ep  
 3SG.PR-brother-PL-ABS 3ABS-3SG.IO-want-NEG  
 ‘[What Aslan always wants] his brothers don’t want.’

Following Caponigro and Polinsky (2011) I assume that West Circassian relative clauses are formed via the movement of a relative operator to Spec,CP – this is schematically represented in (14). In externally headed relative clauses, the operator is phonologically null and in internally headed relative clauses, where the nominal head appears within the relative clause and is marked with adverbial case, the internal head is the overt spellout of this operator.

- (14) General structure of a West Circassian relative clause:



The primary reason to believe that both externally and internally headed relative clauses involve the movement of a relative operator to Spec, CP is that both types of clauses display wh-agreement with the relativized argument. This is in stark contrast with wh-in-situ questions, wherein the wh-word remains in its base position, and there is no overt wh-agreement. There are two strategies of forming wh-questions in West Circassian (Sumbatova 2009): the first is a pseudo-cleft construction, with the wh-word acting as a focused predicate, and a headless relative clause appearing as the absolutive argument. In this case the headless relative clause displays overt wh-agreement, as expected (15a). The second involves the use of the wh-word in situ – in this case the predicate heading the clause does not display any wh-agreement (15b).

- (15) a. **səd(-a)** [<sub>RC</sub> Op<sub>i</sub> mə ç'ale-r t<sub>i</sub>(IO) Ø- z- e- pλə -be] -r  
 who-Q this boy-ABS 3ABS- **WH.IO**- DAT- watch -PST -ABS  
 'What did this boy watch?'
- b. mə ç'ale-r **səd** Ø- Ø- je- pλə -B (-a)  
 this boy-ABS **what** 3ABS- **3SG.IO**- DAT- watch -PST -Q  
 'What did this boy watch? (lit. This boy watched what?)'

This contrast between wh-in-situ questions and questions that involve relativization can be easily explained if we are to assume that wh-words that remain in situ lack the wh-feature that triggers movement to Spec,CP and wh-agreement. If this logic is extended to internally headed relative clauses, they are expected to involve the same type of wh-feature triggered movement as externally headed relative clauses.

Additionally, the internal head may not carry the case marker that is assigned to the corresponding argument within the relative clause – instead, as can be seen in the examples above, it must carry the adverbial case marker. Finally, as shown in the following subsection, internally headed relative clauses may host multiple wh-agreement configurations, which I argue in section 4 to involve a parasitic gap dependency that is licensed by wh-movement. Based on this evidence, I analyze the internal head as the overt spellout of the relative operator.

### 2.3 Multiple wh-agreement

West Circassian relative clauses may contain more than one instance of wh-agreement, if the relativized participant is co-referent with another argument in the clause, resulting in patterns of multiple wh-agreement. For example, the relative clause in (16a) contains a null pronoun (indicated as *pro*) in the position of the possessor of the ergative agent, triggering corresponding third person singular agreement on the possessed noun. In this case, the possessor pronoun may be optionally interpreted as co-referent with the relativized indirect object. In (16b), on the other hand, the third person possessor agreement is replaced with

the wh-agreement marker  $zə$ ; in this case, the possessor is obligatorily interpreted as co-referent with the relativized indirect object.

- (16) a.  $marə$  [<sub>RC</sub>  $\check{c}'al-ew_i$   $t_i(IO)$  [<sub>DP</sub>  $pro_{ij}(PR)$   $ə-š$ ](ERG)  $velosiped$   
 here boy-ADV **3SG.PR**-brother bicycle  
 $\emptyset-$   $qə-$  **ze-**  $r-$   $jə-$   $tə$   $-be$ ]  $-r$   
 3ABS- DIR- **WH.IO**- DAT- 3SG.ERG- give -PST -ABS  
 'Here is the boy<sub>i</sub> to whom his<sub>ij</sub> brother gave a bicycle.'
- b.  $marə$  [<sub>RC</sub>  $\check{c}'al-ew_i$   $t_i(IO)$  [<sub>DP</sub>  $pro_{i/*j}(PR)$   **$zə-š$** ](ERG)  $velosiped$   
 here boy-ADV **WH.PR**-brother bicycle  
 $\emptyset-$   $qə-$  **ze-**  $r-$   $jə-$   $tə$   $-be$ ]  $-r$   
 3ABS- DIR- **WH.IO**- DAT- 3SG.ERG- give -PST -ABS  
 'Here is the boy<sub>i</sub> to whom his<sub>i/\*j</sub> brother gave a bicycle.'

The additional wh-agreement may appear in all types of relative clauses: internally headed, as in (16b), as well as externally headed and headless relative clauses, as illustrated in (22) and (25) in the following section, providing an additional piece of evidence that these three constructions are structurally identical.

Such patterns of multiple wh-agreement may appear intra-clausally – between a relativized participant and a co-referent pronoun embedded within another DP, as in (16b), as well as cross-clausally, with the additional wh-agreement marker surfacing within an embedded clause.<sup>6</sup> An example of cross-clausal wh-agreement is shown below: the baseline finite construction is in (17a): the ergative DP in the matrix clause is interpreted as co-referent with the ergative agent of the embedded adverbial adjunct. If the ergative participant of the matrix clause is relativized, the predicate in the embedded clause may retain regular third person singular agreement with the co-referent pronoun in the ergative position, or this agreement may be replaced with an additional instance of wh-agreement (17b).

<sup>6</sup>Lander (2009a, 2012) argues that cross-clausal cases of multiple wh-agreement are structurally distinct from intra-clausal cases. The analysis proposed here dispenses of the necessity to treat these two cases as separate phenomena; for discussion see subsection 3.5.

- (17) a. mə ɟ'ale-m<sub>i</sub>(ERG) varenje Ø- j- e- šxə  
 this boy-OBL jam 3ABS- 3SG.ERG- DYN- eat  
 [CP *pro*<sub>i</sub>(ERG) swəpə-r Ø- ə- mə- wəx -ze]  
 soup-ABS 3ABS- 3SG.ERG- NEG- finish -CVB  
 'This boy is eating jam without finishing the soup.'
- b. marə [RC ɟ'al-ew<sub>i</sub> t<sub>i</sub>(ERG) varenje Ø- zə- šxə-re -r  
 here boy-ADV jam 3ABS- **WH.ERG**- eat -DYN -ABS  
 [CP *pro*<sub>i</sub>(ERG) s<sup>w</sup>əpə-r Ø- ə / zə- mə- wəx -ze] ]  
 soup-ABS 3ABS- **3SG/WH.ERG**- NEG- finish -CVB  
 'Here is the boy who is eating jam without finishing the soup.'

The wh-marked participants in a multiple wh-agreement construction are not equally accessible for  $\bar{A}$ -movement: one of the wh-agreement markers is additional or parasitic in the sense that the argument it refers to may not be extracted directly over the co-referent argument (Lander 2012:322-327). Thus, while it is possible to mark only the ergative participant in (16a) with wh-agreement, the inverse pattern is not possible: the co-referent possessor of the indirect object may not be marked with wh-agreement if the ergative participant triggers regular third person agreement (18).<sup>7</sup>

- (18) \* marə [RC ɟ'al-ew<sub>i</sub> *pro*<sub>i</sub>(IO) [DP t<sub>i</sub> zə-š](ERG) velosiped  
 here boy-ADV **WH.PR**-brother bicycle  
 Ø- Ø- r- jə- tə -be] -r  
 3ABS- 3SG.IO- DAT- **3SG.ERG**- give -PST -ABS  
 Intended: 'Here is the boy to whom his brother gave a bicycle.'

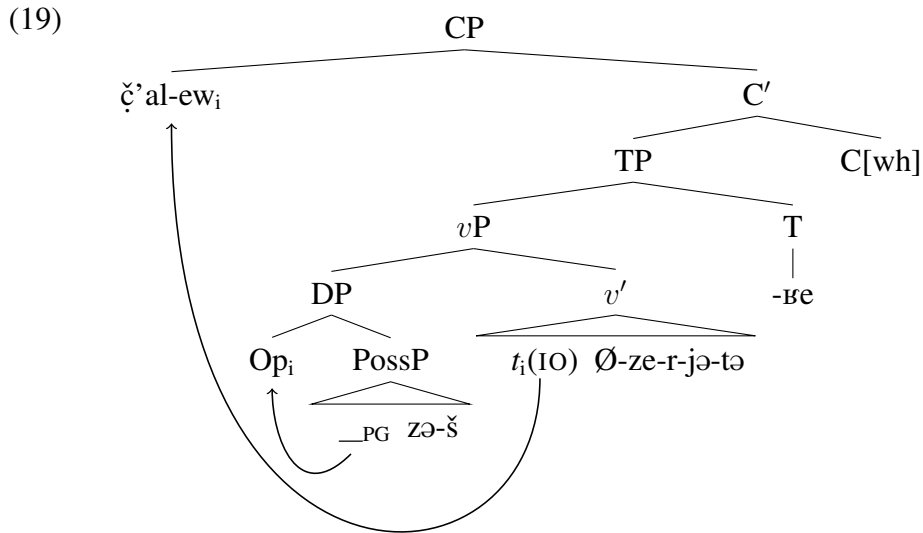
In the following section I propose an analysis of multiple wh-agreement which connects directly to the additional nature of one of the wh-markers. In particular, I argue that multiple wh-agreement constructions are manifestations of parasitic gap dependencies, whereby each of the wh-agreement markers is the spell-out of agreement with a wh-trace, licensing

<sup>7</sup>While some types of possessors may be relativized directly, the possessor of an indirect object, as in (18), may not. This is why the sentence is simply ungrammatical, as opposed to having an interpretation wherein the possessor is not co-referent with the ergative agent.

or parasitic.

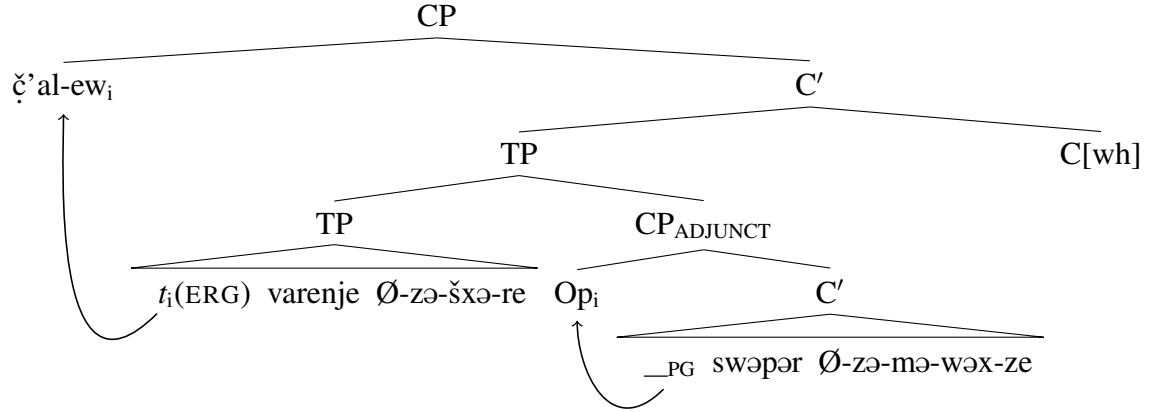
### 3 Multiple wh-agreement as a parasitic gap dependency

This section presents an analysis of multiple wh-agreement as a case of a parasitic gap dependency. I argue that all cases of wh-agreement are uniformly agreement with a wh-trace. In cases of multiple wh-agreement, the relative clause contains more than one trace: a licensing trace and a parasitic gap. I adopt the proposal put forth by Chomsky (1986); Postal (1998); Nissenbaum (2000), *inter alia*, that parasitic gap constructions involve local operator movement to the edge of the constituent hosting the gap. Both the parasitic and the licensing gaps are c-commanded by the relative operator in Spec,CP of the relative clause, but the licensing gap does not c-command the parasitic gap, per the anti-c-command condition on parasitic gaps. The structures for the multiple wh-agreement constructions in (16b) and (17b) are presented schematically in (19) and (20) below. In (19) the relativization of the applied object licenses a parasitic gap within the ergative DP; the parasitic gap configuration is built via wh-movement of a null operator from Spec,PossP to the edge of the corresponding DP. In (20) the parasitic gap is analogously licensed within an adjunct to TP.





(20)



The argumentation for this structure proceeds as follows:

- The additional wh-agreement is parasitic on the primary wh-agreement: it either appears within a constituent that is otherwise an island for extraction, or it cannot surface in the absence of the primary wh-agreement while preserving the intended co-reference interpretation between the participants in question.
- The parasitic gap cannot be separated from the licensing operator in the matrix clause by more than one island boundary.
- The parasitic wh-agreement can only be licensed by a DP gap, and not a PP gap – a robustly observed property of parasitic gaps.
- Like parasitic gaps, multiple wh-agreement is almost always optional. Just as parasitic gaps freely alternate with pronouns, the additional wh-agreement marker can generally be replaced with  $\phi$ -agreement with a pronoun.

### 3.1 Multiple wh-agreement is parasitic

This subsection aims to show that the appearance of additional wh-agreement is parasitic on the relativization of the participant triggering the primary wh-agreement: either the participant triggering the additional wh-agreement in a multiple wh-agreement construction appears within an island for extraction, or that participant cannot be relativized directly

in the presence of a co-referent argument in a potential licensing position. Islands for extraction that allow parasitic gaps include non-absolutive DPs and adjunct clauses; non-island contexts which allow for parasitic gaps are absolutive DPs and complement clauses.

### 3.1.1 Islands

As was shown in (16b), a possessor that is co-referent with the relativized participant may trigger additional wh-agreement. Most types of possessors, however, are not accessible for relativization. In particular, many speakers disallow the direct relativization of possessors of non-absolutive arguments.<sup>8</sup> In such cases the corresponding non-absolutive DP must be relativized to form a pseudo-cleft construction, with that relativized DP acting as the absolutive subject. The possessor is then extracted out of that absolutive DP. Illustrations of how possessors of various non-absolutive arguments are relativized are provided below (see also Lander 2012:284-285,360-361).

1. Possessor of an indirect object. The baseline sentence for the extraction of the possessor of an applied indirect object is provided in (21a): the DP *mwe š<sup>w</sup>əzəm* ‘this woman’ appears within the DP that is functioning as the applied object of the main verb; the possessor triggers third person singular possessive agreement on the possessed noun, and the applied object in turn triggers third person singular agreement on the predicate. In (21b) we can see that direct relativization of the possessor, with wh-agreement replacing possessor agreement on the possessed nominal and no other structural changes, is ungrammatical. Instead, in order to relativize the possessor of the indirect object, the indirect object must first be “promoted” to the position of the absolutive argument in a pseudo cleft construction, with the newly formed relative clause acting as the predicate of the pseudo-cleft, resulting in a structure involving recursive relativization, where both the indirect object and the possessor

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<sup>8</sup>Lander (2012:280-281) lists all types of possessors as accessible for relativization, and Lander (2009b) notes that certain dialects of West Circassian ban the extraction of possessors of a non-absolutive DP. The majority of my consultants uniformly ban extraction of possessors from non-absolutive DPs.

of that indirect object are relativized (21c).

- (21) a. [DP mwe š<sup>w</sup>əzə-m](PR) ə-q<sup>w</sup>e](IO) č'elejeɓaʒe-r  
           **this woman-OBL                      3SG.PR-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<sup>w</sup>əz-ew<sub>i</sub> [DP t<sub>i</sub>(PR) zə-q<sup>w</sup>e](IO) č'elejeɓaʒe-r  
         here woman-ADV WH.PR-son teacher-ABS  
       Ø- Ø- je- çeça -ɓe] -r  
       3ABS- **3SG.IO-** DAT- scold -PST -ABS  
       Expected: ‘Here is the woman whose son the teacher scolded.’  
 c. mwarə [RC š<sup>w</sup>əz-ew<sub>i</sub> [DP t<sub>i</sub>(PR) zə-q<sup>w</sup>e]<sub>j</sub>(ABS) [RC Op<sub>j</sub> č'elejeɓaʒe-r  
         here woman-ADV WH.PR-son teacher-ABS  
         t<sub>j</sub>(IO) Ø- z- e- çeça -ɓe] ] -r  
               3ABS- **WH.IO-** DAT- scold -PST -ABS  
       ‘Here is the woman whose son the teacher scolded.’ (lit. ‘Here is the woman  
       whose son is the one the teacher scolded.’)

While the possessor of an indirect object is not accessible for direct relativization, it may trigger additional wh-agreement in the presence of a co-referent relativized participant. Thus, in a relative clause like (22), the  $\phi$ -agreement tracking the possessive pronoun within the indirect object DP may be optionally replaced with the wh-agreement marker if that possessor is co-referent with the relativized ergative participant.

- (22) [RC Op<sub>i</sub> [DP *pro*<sub>i</sub>/\_\_<sub>PG</sub>(PR) ə/zə-š̌](IO) t<sub>i</sub>(ERG) konfet  
 3SG/WH.PR-brother candy  
 Ø- Ø- je- zə- tə -ʔe] p̣ʂaʂe-m  
 3ABS- 3SG.IO- DAT- WH.ERG- give -PST girl-OBL  
 sə-Ø-š̌'ə-tʃ<sup>w</sup>ə-ʔ  
 1SG.ABS-3SG.IO-LOC-praise-PST  
 'I praised the girl<sub>i</sub> that gave candy to her<sub>i</sub> brother.'

**2. Possessor of the ergative agent.** Analogous to the possessor of an indirect object, the

possessor of an ergative agent may not be relativized directly. If one attempts to relativize the possessor of the ergative DP directly, as in (23a), the result is ungrammatical. Instead, as with the relativization of the possessor of an indirect object, the ergative DP must first be relativized in order to form a pseudocleft with the former ergative agent acting as the absolutive argument (23b).

- (23) a. \* mwarə [RC š<sup>w</sup>əz-ew<sub>i</sub> [DP t<sub>i</sub>(PR) z-jə-λ](ERG)  
 here woman-ADV WH.PR-POSS-man  
 wəne-xe-r Ø- ə- šə -re] -r  
 house-PL-ABS 3ABS- 3SG.ERG- do -DYN -abs  
 Expected: ‘Here is the woman whose husband builds houses.’
- b. mwarə [RC š<sup>w</sup>əz-ew<sub>i</sub> [DP t<sub>i</sub>(PR) z-jə-λ]<sub>j</sub>(ABS) [RC Op<sub>j</sub> t<sub>j</sub>(ERG)  
 here woman-ADV WH.PR-POSS-man  
 wəne-xe-r Ø- zə- šə -re] ] -r  
 house-PL-ABS 3ABS- WH.ERG- do -DYN -ABS  
 ‘Here is the woman whose husband builds houses.’ (lit. ‘Here is the woman  
 whose husband is the one that builds houses.’)

As was shown in (16b), while the possessor of an ergative agent is not accessible for direct relativization, it may trigger wh-agreement in a multiple wh-agreement construction.

The appearance of two wh-agreement markers in cases where a possessor of a non-absolutive argument is extracted, as in (21c) and (23b) superficially resembles multiple wh-agreement constructions as in (22). However, there are several important differences that suggest that this construction is distinct and involves recursive relativization, rather than a parasitic gap dependency.

Firstly, the wh-agreement in (21c) and (23b) replaces agreement with the DP from which the possessor is being extracted. This is markedly different from cases of multiple wh-agreement, where the primary wh-agreement tracks a co-referent argument.

Secondly, the pseudo-cleft analysis of the constructions in (21c) and (23b) predicts that

the DP with the relativized possessor occupies the absolutive position and should be assigned absolutive case. While possessed nouns do not generally carry case markers, case must be overtly expressed in the presence of the plural suffix *-xe* – in such a structure, the prediction is that the clefted nominal will carry the absolutive case marker *-r*.<sup>9</sup> This prediction is illustrated in (24) for the analogous pseudo-cleft construction when it is used as a matrix clause: the plural DP *sq<sup>w</sup>exer* ‘my sons’ appears as the absolutive argument and, despite carrying a possessive marker, requires the case suffix *-r*. For the relative clause to be used in the predicative position it must be accompanied by the predication copula *arə*, which is absent in the relative clause.<sup>10</sup>

- (24) s-q<sup>w</sup>e-xe-r                      arə                      [RC Op<sub>i</sub>    t<sub>i</sub>(ERG)    zeč̣’e laɣe-xe-r  
       1 SG.PR-son-PL-ABS            PRED                      all            dish-PL-ABS  
       Ø-        zə-            q<sup>w</sup>əta -ɣe] -xe -r  
       3 ABS- WH.ERG- break -PST -PL -ABS  
       ‘My sons are the ones who broke all the dishes.’

In a multiple wh-agreement construction, on the other hand, the DP containing the wh-agreeing possessor is expected to carry the case assigned to it by the predicate heading the relative clause. Thus, in (25) the wh-agreement triggered by the possessor of the indirect object is parasitic on the wh-agreement with the ergative agent of the predicate *šefən* ‘buy’.

- (25) xet-a    [RC Op<sub>i</sub> bere    t<sub>i</sub>(ERG)    šəβən    [DP \_\_PG    z-jə-sabəj-xe-m](IO)  
       who-Q                      often                      clothing                      WH.PR-POSS-child-PL-OBL  
       Ø-        a-            fe-    zə-            mə-    šefə -re] -r  
       3 ABS- 3 PL.IO- BEN- WH.ERG- NEG- buy -DYN -ABS  
       ‘Who<sub>i</sub> rarely buys clothes for their<sub>i</sub> children?’

Turning back to relativization of possessors of non-absolutive arguments, the picture

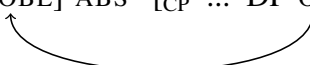
<sup>9</sup>Thank you to Yury Lander for suggesting this diagnostic and accurately predicting its outcome based on his own previously collected data.

<sup>10</sup>For details on the behavior of the predicative copula *arə* and pseudo-clefts as a way of marking information structure see Sumbatova (2009).

with case marking is surprisingly blurry. Most speakers do not have a clear judgment regarding the case marking: some speakers allow for absolutive case marking on the plural possessed noun, and some – for oblique marking, but both strategies are judged only marginally acceptable. Thus, the only grammatical way of expressing the meaning in (26) is to omit plural marking – and, correspondingly, case marking as well – on the possessed nominal;<sup>11</sup> both absolutive and oblique case marking are judged only marginally possible and rather stilted.

- (26) marə [RC š<sup>w</sup>əz-ew<sub>i</sub> [DP t<sub>i</sub> z-jə-č’ale /  
 here woman-ADV WH.PR-POSS-boy /  
 ??z-jə-č’ale-xe-**r** / ??z-jə-č’ale-xe-**m**] [RC Op<sub>i</sub> t<sub>i</sub>(ERG)  
 WH.PR-POSS-boy-PL-ABS / WH.PR-POSS-boy-PL-OBL  
 dax-ew wered Ø- qe- zə- ʔ<sup>w</sup>e -re] ] -r  
 pretty-ADV song 3ABS- DIR- WH.ERG- say -DYN -ABS  
 ‘Here is the woman whose children sing well.’

The fact that oblique case is not readily available in this construction suggests that this construction is distinct from multiple wh-agreement constructions like (25). The unavailability of absolutive case, however, is puzzling, if this is a simple pseudo-cleft construction. A possible explanation for the unavailability of overt case marking in (26) may lie in syncretism effects (Pullum and Zwicky 1986; Bjorkman 2016, *inter alia*): the nominal that hosts the relativized possessor carries two conflicting case feature values (oblique and absolutive) and the only way to resolve this conflict is to use a form that is unmarked for case and thus syncretic between oblique and absolutive. Such a conflict arises in this case due to a DP that is marked with oblique case moving to an absolutive case position, schematically represented in (27).

- (27) [DP-OBL]-ABS [CP ... DP-OBL ]
- 

<sup>11</sup>Unmarked nominals in West Circassian are unspecified for number and are interpreted based on the context (Kumakhov 1971; Arkadiev and Testelefs 2015).

A detailed analysis of how this syncretism effect arises is outside the scope of this paper; for the purposes of discussion here it suffices to say that in order for a possessor to be extracted from a non-absolutive DP, that DP must be moved to an absolutive case position. The reasons for the islandhood of non-absolutive DPs likewise lies outside the scope of the current paper. It is worth noting that none of the existing analyses for non-extractability out of oblique or inherent case-marked nominals are readily applicable to the West Circassian data. Analyses that rely on freezing effects (e.g. Bošković in press) are not applicable due to the fact that the absolutive DP undergoes movement to Spec,TP but is not an island. Importantly, even if we were to discard the main claim of the paper and assume that the absolutive DP remains in situ in an attempt to salvage a freezing effect account, we would be no closer to accounting for the islandhood facts, because we would not be able to structurally differentiate between unergative external arguments and ergative agents. The specifier or external argument status of non-absolutive arguments likewise cannot be appealed to, as proposed e.g. by Chomsky (2008); Haegeman et al. (2014), since absolutive arguments may originate both as complements of transitive verbs and external arguments or unergative verbs. Finally, Branan's (2018) proposal to tie the islandhood of inherent case-marked DPs with the lack of  $\phi$ -agreement with these DPs does not appear to be correct for West Circassian, where all argument DPs trigger overt  $\phi$ -agreement.

**3. A DP within an adjunct clause.** West Circassian adjunct clauses behave as islands for extraction: a DP cannot be relativized from within an adjunct clause directly. An adjunct clause may contain a wh-agreement marker, however, if an argument in the matrix clause that is co-referent with the participant triggering that wh-agreement is relativized. This is illustrated in the examples below. In (28a) if the indirect object of the matrix clause is relativized, the co-referent<sup>12</sup> applied object in the adjunct clause may be expressed as a

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<sup>12</sup>This co-reference is not obligatory – the indirect object of the embedded clause may refer to a contextually provided antecedent; in isolation, however, the interpretation is biased towards a co-reference reading, just as it is in English, cf. the translation of (28a).

regular pronoun triggering third person agreement on the embedded predicate, or it may also trigger wh-agreement. However, if no participant is relativized from the matrix clause, the indirect object cannot be relativized directly from within the embedded clause (28b).

- (28) a. xet-a [RC Op<sub>j</sub> aslan<sub>i</sub> mafe-m rjene [CP *pro*<sub>i</sub>(ABS)  
 who-Q Aslan day-OBL whole  
*pro*<sub>j</sub>(IO) / \_\_PG Ø- Ø-je- / z-e- mə- w -ew]  
 3ABS- 3SG.IO-DAT- WH.IO-DAT- NEG- hit -ADV  
*t<sub>j</sub>*(IO) Ø- zə- de- žeg<sup>w</sup>ə -re] -r  
 3ABS- WH.IO- COM- play -DYN -ABS  
 ‘Who does Aslan play with \_\_ all day without hitting them / \_\_?’
- b. \* xet-a [RC Op<sub>j</sub> aslan<sub>i</sub> mafe-m rjene  
 who-Q Aslan day-OBL whole  
 [CP *pro*<sub>i</sub>(ABS) *t<sub>j</sub>*(IO) Ø- z- e- mə- w -ew]  
 3ABS- WH.IO- DAT- NEG- hit -ADV  
 Ø- (Ø- de- žeg<sup>w</sup>ə -re] -r  
 3ABS- 3SG.IO- COM- play -DYN -ABS  
 Intended: ‘Who does Aslan play (with him/her) all day without hitting \_\_?’

A parasitic gap within an adjunct clause may be licensed by any gap in the matrix clause, including an absolutive trace, indicating that absolutive relativization involves wh-movement despite the lack of overt wh-morphology. This is shown in (29): the relativized absolutive external argument of *žeg<sup>w</sup>ən* ‘play’ may license a parasitic gap in place of the co-referent possessor pronoun on the embedded absolutive argument within the adjunct.

- (29) marə [RC pšaš-ew<sub>i</sub> [CP [*pro*<sub>i</sub> / \_\_PG ə / zə-šəpχ<sup>w</sup>] Ø-me-čəje-fe ]  
 here girl-ADV 3SG/WH.PR-sister 3ABS-DYN-sleep-LIM  
*t<sub>i</sub>*(ABS) nəsxape-m Ø- Ø- rə- žeg<sup>w</sup>ə -re] -r  
 doll-OBL WH.ABS- 3SG.IO- INS- play -DYN -ABS  
 ‘Here is the girl who plays with the doll while her sister sleeps.’

Thus, we have seen that multiple wh-agreement constructions often involve additional wh-agreement replacing agreement with a participant that is otherwise inaccessible for extraction, i.e. that the additional wh-agreement is *parasitic* on the primary wh-agreement.



### 3.1.2 Non-islands

4. A DP within a complement clause. There is considerable variation in regards to the accessibility of complement clauses for wh-movement (see also Lander 2009a, 2012). The majority of the speakers I consulted with did not treat non-factual clausal complements as islands for extraction. Importantly, however, even speakers that allow for direct extraction of an argument from within the embedded clause, such extraction is not allowed in case one of the arguments of the matrix verb is co-referent with the corresponding embedded participant. For example, in (30a) the applied object of the matrix verb *jəč’esen* ‘like’ is coreferent with the applied object of the embedded verb *jetən* ‘give’; the co-referent matrix participant may be relativized, triggering wh-agreement on the matrix predicate, while the embedded co-referent pronoun triggers regular  $\phi$ -agreement on the embedded verb. Optionally, the embedded co-referent pronoun may be replaced with a parasitic gap which then triggers additional wh-agreement on the embedded verb. Importantly, however, the embedded applied object cannot be extracted directly in the presence of the co-referent pronoun in the matrix clause – such a configuration is judged ungrammatical (30b).

- (30) a. xet-a [RC Op<sub>i</sub> t<sub>i</sub>(IO) Ø- z- jə- č’ase -r [CP pro<sub>i</sub> / \_\_<sub>PG</sub>(IO)  
 who-Q 3ABS- **WH.IO**- LOC- like -ABS  
 podarke-xe-r Ø- Ø / **ze**- r- a- tə -n -ew ] ]  
 gift-PL-ABS 3ABS- **3SG/WH.IO**- DAT- 3PL.ERG- give -MOD -ADV  
 ‘Who likes to be given gifts (lit. for them to give gifts to him/her)?’
- b. \* xet-a [RC Op<sub>i</sub> pro<sub>i</sub>(IO) Ø- Ø- jə- č’ase -r  
 who-Q 3ABS- **3SG.IO**- LOC- like -ABS  
 [CP t<sub>i</sub>(IO) podarke-xe-r Ø- **ze**- r- a- tə -n -ew ] ]  
 gift-PL-ABS 3ABS- **WH.IO**- DAT- 3PL.ERG- give -MOD -ADV  
 Expected: ‘Who likes to be given gifts?’

5. Possessor of an absolutive DP. As we saw in (9) the possessor of an absolutive DP may be relativized directly. As possessors of ergative and indirect object DPs, this type of possessor may trigger additional wh-agreement in a multiple wh-agreement construction.

Thus, if an indirect object is relativized, a co-referent possessor of the absolutive DP may be expressed as a null pronoun triggering regular  $\phi$ -agreement, or it may be replaced with a parasitic gap, correspondingly triggering wh-agreement on the possessed nominal (31).

- (31) [RC Op<sub>i</sub> [DP *pro*<sub>i</sub> / \_\_<sub>PG</sub>(PR) **ə / zə-š**](ABS) *t*<sub>i</sub>(IO) Ø- qə-  
**3SG/WH.PR**-brother 3ABS- DIR-  
**z-** e- wa -be] č'ale-m s-Ø-je-wəšəjə-š'ta-**ɸ**  
**WH.IO-** DAT- hit -PST boy-OBL 1SG.ABS-3SG.IO-DAT-console-IPF-PST  
 'I consoled the boy whom<sub>i</sub> his<sub>i</sub> brother hit'

While absolutive DPs are not islands for extraction, the wh-agreement triggered by the possessor in (31) is parasitic on the primary wh-agreement triggered by the indirect object in the sense that the possessor cannot be directly relativized in the presence of a co-referent verbal participant (32).

- (32) \* [RC Op<sub>i</sub> [DP *t*<sub>i</sub> **zə-š**](ABS) ***pro*<sub>i</sub>(IO)** Ø- q- Ø- je- wa -be]  
**WH.PR**-brother 3ABS- DIR- **3SG.IO-** DAT- hit -PST  
 č'ale-m s-Ø-je-wəšəjə-š'ta-**ɸ**  
 boy-OBL 1SG.ABS-3SG.IO-DAT-console-IPF-PST  
 Expected: 'I consoled the boy whose<sub>i</sub> brother hit him<sub>i</sub>'

The generalization regarding the relativization of co-referent arguments is that the verbal participant always acts as the licensing gap, and the co-referent possessor of another DP is always parasitic on that licensing gap and cannot be relativized directly. I leave the question of what governs this restriction for future research.

To conclude this subsection, in multiple wh-agreement constructions, one wh-agreement marker is *parasitic* on the other. The parasitic nature of this marking can be easily made sense of within a parasitic gap analysis of the additional wh-agreement.

### 3.2 Parasitic gaps cannot be embedded in an additional island

It has been long observed that while parasitic gaps appear robustly within syntactic islands, the dependency between the matrix operator and the parasitic gap cannot cross more than one island boundary (Kayne 1983; Chomsky 1986; Nissenbaum 2000; Hornstein 2001; Kennedy 2003; Nunes 2004, *inter alia*). This is illustrated with the following examples from Nissenbaum (2000:24): while one island boundary between the embedded and licensing gaps is perfectly licit, two such boundaries render the parasitic gap dependency ungrammatical.

- (33) Who did John visit \_\_  
    **non-island:**       ✓ [without claiming [that he knew \_\_]]  
    **adjunct island:**   ?? [after offending me [by not introducing me to \_\_]]

The same constraint applies to additional wh-agreement in multiple wh-agreement constructions – this is shown in (34) below. In both sentences the licensing gap appears in the matrix clause in the applied object position and correspondingly triggers wh-agreement in the applied object slot preceding the benefactive morpheme. In (34) a pronoun that is co-referent to the relativized applied object appears within the complement of the verb *pəλən* ‘attempt, undertake’; this complement is in turn embedded within a temporal adjunct to the predicate heading the relative clause. Since clausal complements are not islands for extraction, the embedded co-referent pronoun may be replaced with a parasitic gap.<sup>13</sup> If, however, the co-referent pronoun is embedded within another temporal adjunct, as in (34b), it may not be replaced by a parasitic gap, because the potential parasitic gap dependency would have to cross two island boundaries.

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<sup>13</sup>The question mark here is likely because direct relativization out of the complement is degraded for many speakers, regardless of the construction in this particular example.

- (34) a. marə [RC bzəlfəB-ew<sub>i</sub> [ADJUNCT [COMP *pro*<sub>i</sub> / ?\_\_PG(IO)  
 here woman-ADV  
 sə- Ø / ?z- de- g<sup>w</sup>əš'əʔe -nə -m ] sə-pələ-fe ]  
 1SG.ABS- 3SG/WH.IO- COM- speak -MOD -OBL 1SG.ABS-attempt-LIM  
 zə-g<sup>w</sup>ere t<sub>i</sub>(IO) Ø- qə- z- fə- tje- wa -be] -r  
 one-INDEF 3ABS- DIR- WH.IO- BEN- LOC- hit -PST -ABS  
 'Here is the woman whom someone called [while I was trying [to speak with  
 her]]'
- b. marə [RC š<sup>w</sup>əz-ew<sub>i</sub> [ADJUNCT [ADJUNCT *pro*<sub>i</sub> / ??\_\_PG(IO)  
 here woman-ADV  
 sə- Ø / ??z- de- g<sup>w</sup>əš'əʔ -ew ] sə- š'e- sə -fe ]  
 1SG.ABS- 3SG/??WH.IO- COM- speak -ADV 1SG.ABS- LOC- sit -LIM  
 zə-g<sup>w</sup>ere t<sub>i</sub>(IO) Ø- qə- z- fə- tje- wa -be] -r  
 one-INDEF 3ABS- DIR- WH.IO- BEN- LOC- hit -PST -ABS  
 'Here is the woman whom someone called [while I was sitting [talking to her]]'

To conclude this subsection, while the additional wh-agreement in a multiple wh-agreement may appear in syntactic islands, as we saw in subsection 3.1, it may not be embedded further into an island within that island.

### 3.3 Parasitic gaps cannot be licensed by a PP wh-trace

Another long observed property of parasitic gaps is that they may only be licensed by a DP trace (see e.g. Cinque 1990; Postal 1993).<sup>14</sup> The following examples from Postal (1993:736) illustrate this constraint for English: in (35a) a nominal trace successfully licenses a parasitic gap in the adjunct clause, but the equivalent of this sentence with a PP-trace is ungrammatical (35b).

- (35) a. This is a topic<sub>i</sub> you should think about t<sub>i</sub> [before talking about \_\_PG].  
 b. \* This is a topic about which<sub>i</sub> you should think t<sub>i</sub> [before talking \_\_PG].

<sup>14</sup>There is a body of literature countering the claim that this is a universal property of parasitic gaps, see e.g. Tellier (1991); Engdahl (2001); Levine et al. (2001). However, as Culicover (2001:65) notes, the nominal nature of the antecedent of a parasitic gap remains a robust cross-linguistic tendency.

Locative postpositional phrases are usually accompanied by a semantically appropriate applicative prefix on the predicate; they may also be referred to via a null pronoun. These two properties are demonstrated for the locative postposition *dež* ‘at’: in (36) the postpositional phrase in the embedded adjunct is cross-referenced on the predicate via the prefix *š’(ə)*- and referred to with a null pronoun (indicated as *pro*) in the matrix clause.

- A postpositional phrase may be relativized, triggering wh-agreement in the applied object slot preceding the corresponding locative prefix. A relativized PP, however, may not license a parasitic gap. This is illustrated in (37): the PP *tjəB<sup>w</sup>əneB<sup>w</sup>əxem adež* ‘at our neighbors’ [place]’ is relativized from the matrix clause, triggering wh-agreement on the corresponding predicate. While this PP can be referred to in the embedded clause via a null pronoun, this null pronoun may not be replaced by a parasitic gap.

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This can be contrasted with a case where a locative applicative prefix is used to cross-reference a DP rather than a PP – if such a DP is relativized, it can successfully license a parasitic gap. This is illustrated in (38), where both the licensing and the parasitic gaps occupy the applied object position that is cross-referenced with the same locative prefix *ɖʷə-* as in (37). However, unlike in the previous example, the DP *wh*-trace may successfully license a parasitic gap within the temporal adjunct.

- (38) [RC Op<sub>i</sub> λepqə-r [CP \_\_<sub>PG</sub>(LOC) Ø- **zə**- š'ə- rehatə-be -w ]  
tribe-ABS 3ABS- **WH.IO**- LOC- settle -PST -ADV  
*t<sub>i</sub>*(LOC) Ø- **zə**- š'ə- beβ<sup>w</sup>a -be] -r a wəne-çək<sup>w</sup>ə-xe-r arə  
3ABS- **WH.IO**- LOC- reproduce -PST -ABS that house-small-PL-ABS PRED  
‘Those small houses are where the tribe multiplied, having settled there.’ (Adyge  
Mak’, 2017.07.05)

It is worth noting that while the restriction of parasitic gaps to the nominal category has been used as evidence for the pronominal nature of these gaps (Cinque 1990), the data in (36)-(37) is an odds with such an analysis: as can be seen in (36), there is nothing wrong with a PP-proform, but a parasitic gap cannot appear in the same position – this also counters Engdahl's (2001) claim that non-nominal parasitic gaps can appear in languages that have proforms corresponding to the syntactic category in question.

### 3.4 Parasitic gaps are optional

This subsection provides the final argument for a parasitic gap analysis of multiple wh-agreement. It was first observed by Engdahl (1983:15–17) that a large subset of parasitic gaps are optional and may freely alternate with an overt DP. An illustrative English example adapted from Engdahl (1983:14) is in (39).

- (39) Here is the paper that John read  $t$  before filing PG / his mail.

As shown in the previous subsections, the majority of multiple wh-agreement constructions alternate freely with constructions that do not involve additional wh-agreement, but have a pronoun in that position instead. For example, the co-reference relationship between the relativized indirect object and the possessor of the ergative DP in (16a)-(16b) allows for the appearance of additional wh-agreement, but does not require it – a null third person pronoun may be used instead of the parasitic gap, triggering the corresponding  $\phi$ -agreement on the possessed nominal. The optionality of additional wh-agreement is yet another property that parallels multiple wh-agreement constructions with parasitic gap dependencies.

### **3.5 Intra- versus cross-clausal parasitic gap constructions**

Lander (2009a, 2012) treats intra- and cross-clausal cases of multiple wh-agreement as two distinct constructions, labeling them respectively as genuine and ‘fake’ multiple relativization. I argue that, given that both types of constructions display the set of properties presented above, the differences the two configurations display do not warrant such a distinction, and a parasitic gap analysis is adequate for both constructions.

Lander presents the following considerations for distinguishing intra- and cross-clausal multiple wh-agreement constructions. Firstly, relativization out of some types of embedded clauses involves prolepsis, i.e. the insertion of an additional argument that is co-referent to the relativized participant. Lander argues that because relativization out of simple clauses does not involve comparable argument insertion, the two constructions must be structurally distinct. Secondly, Lander (2009a, 2012) observes that intra-clausal multiple wh-agreement constructions differ in constraints on word order: while the internal head in a cross-clausal multiple wh-agreement construction may appear between the constituent containing the additional wh-agreement and the predicate heading the relative clause, this order is not possible in intra-clausal multiple wh-agreement constructions.

Given these differences, Lander concludes that intra-clausal multiple wh-agreement in-

volves simultaneous relativization out of two positions, while cross-clausal cases are the union of two relative clauses, one formed within the embedded clause, and one within the matrix clause. If we are to assume that relativization involves an  $\bar{A}$ -dependency between a relative operator and a wh-trace, this would mean that within an intra-clausal multiple wh-agreement construction a single relative operator binds two wh-traces, akin to some accounts of across-the-board movement (Citko 2005; deVries 2013) and Nunes's (2004) analysis of multiple gap constructions, including across-the-board movement and parasitic gaps. Cross-clausal configurations, on the other hand, then have a structure similar to what is assumed under a null operator analysis of parasitic gap constructions, where there is  $\bar{A}$ -movement within the constituent hosting the parasitic gap.

None of the differences between intra- and cross-clausal multiple wh-agreement constructions warrant a fundamentally different analysis for the wh-agreement markers that appear within these two constructions. Firstly, prolepsis, which appears in cross-clausal contexts, but is not used in intra-clausal multiple wh-agreement constructions, has long been observed to be a standard way of obviating long distance  $\bar{A}$ -movement (see e.g. Salzmann 2017). Thus, the lack of proleptic constructions in simple clauses, which lack comparable long distance  $\bar{A}$ -movement configurations, cannot be taken as indicative of a fundamental difference in the wh-agreement constructions involved. And secondly, while the difference in word order restrictions between intra- and cross-clausal multiple wh-agreement constructions is intriguing and warrants closer investigation, it does not in itself indicate that the two constructions are fundamentally different in nature.<sup>15</sup>

An additional argument against this approach is that while it appeals to constraints on multiple wh-agreement (to be discussed in section 4) as evidence that these two constructions are distinct, it does not provide an account for how these constraints come about. In

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<sup>15</sup>There is inter-speaker variation regarding word order in these constructions: my consultants endorse examples analogous to the ones Lander (2009a) labels as ungrammatical.



contrast, the parasitic gap analysis proposed here accounts for the observed constraints and additionally provides a fruitful avenue for exploring the syntax of clausal embedding and how it differs from the structure of simple clauses; this is also noted in the conclusion.

### **3.6 Summary: Multiple wh-agreement is a parasitic gap dependency**

In this section I have provided evidence for the treatment of West Circassian multiple wh-agreement constructions as parasitic gap dependencies. Multiple wh-agreement constructions display the following properties typical of parasitic gap configurations: (i) one of the wh-agreement markers in a multiple wh-agreement construction is *parasitic* on the presence of the other wh-agreement marker; (ii) the additional, or parasitic, wh-agreement may be licensed within a syntactic island, but not if it is further embedded within another island; (iii) the additional wh-agreement cannot be licensed by a PP trace; (iv) the additional wh-agreement in a multiple wh-agreement construction freely alternates with a pronoun.

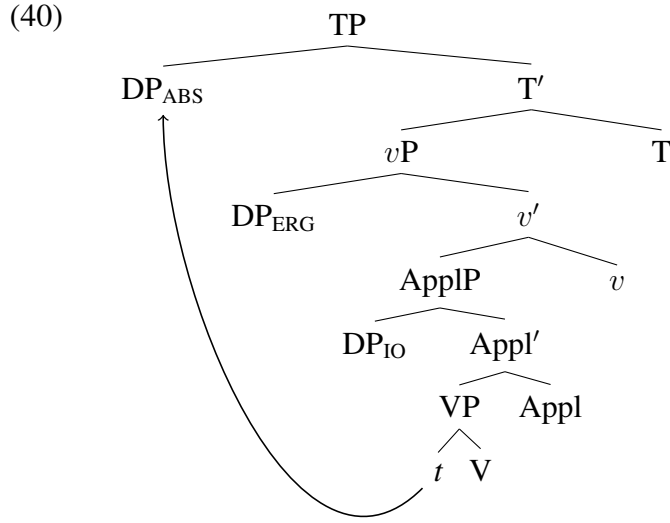
The remainder of the paper explores the possibility of using the parasitic gap analysis of multiple wh-agreement as a diagnostic for syntactic structure. Section 4 demonstrates how restrictions on patterns of multiple wh-agreement provide evidence for the high position of the absolutive DP, i.e. for structural syntactic ergativity, while section 5 shows how the lack of restrictions on multiple wh-agreement, coupled with their optionality in certain configurations, is a consequence of optional A-scrambling of the applied object to Spec,*v*P.

## **4 The Anti-C-Command Condition and syntactic ergativity**

In the previous section I have argued for a parasitic gap analysis of multiple wh-agreement constructions in West Circassian, outlining the similarities between the patterns of wh-agreement and properties of parasitic gaps. This section explores the consequences of the developed analysis for our understanding of West Circassian clause structure, and in particular, of c-command relations between DPs. This is done by demonstrating how a restriction on the appearance of multiple wh-agreement constructions provides evidence

for the absolutive DP c-commanding all other verbal arguments, including the ergative DP. The restriction in question is the following: a possessor that is co-referent to a relativized clausemate absolutive participant may not trigger additional wh-agreement. This restriction can be made sense of in light of general properties of parasitic gaps and in particular – the anti-c-command condition, which states that a licensing gap cannot c-command the parasitic gap (Engdahl 1983). This leads us to conclude that the absolutive DP c-commands other clausemate DPs, including the ergative agent. West Circassian then falls into the class of high absolutive languages in Coon et al.’s (2014) terms, in which syntactic ergativity effects arise due to the high position of the absolutive DP; other proposals for a high absolutive in syntactically ergative languages include Bittner and Hale (1996); Aldridge (2008), among others.

The structure I argue for is the following: the absolutive DP is merged within  $vP$ , as the complement of  $V^0$  if it is the internal argument or as the specifier of  $v^0$  if it is the external argument of an unergative verb. The ergative agent is merged as the specifier of  $v^0$ , and any applied indirect objects are introduced as high applicatives as specifiers of  $Appl^0$ . The ergative agent and the applied object are assigned inherent case in situ, but the absolutive argument is assigned nominative case by  $T^0$  and moves to Spec,TP to satisfy the  $uEPP$  feature. The structure of a TP containing a three-place predicate with an absolutive, ergative and applied argument is represented in (40).



The remainder of this section is organized as follows: subsection 4.1 presents the data illustrating the restriction imposed on multiple wh-agreement constructions and subsection 4.2 connects this restriction to the parasitic gap analysis of multiple wh-agreement.

#### 4.1 The Absolutive Constraint

Multiple wh-agreement constructions in West Circassian are not always possible, in particular, they are subject to the following constraint, first described by Lander (2009a,b, 2012).<sup>16</sup>

(41) ABSOLUTIVE CONSTRAINT ON MULTIPLE WH-AGREEMENT:

Intra-clausal multiple wh-agreement is ungrammatical if the relativized participant is the absolutive DP (Lander 2009a,b, 2012).

If understood in light of the parasitic gap analysis of multiple wh-agreement, this constraint can be rephrased in the following way:

(42) ABSOLUTIVE CONSTRAINT ON PARASITIC GAPS:

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<sup>16</sup>Lander (2009b) connects the Absolutive Constraint to the structurally privileged status of the absolutive DP, but does not discuss the exact nature of this connection.

An absolutive trace cannot license a parasitic gap in a clausemate DP.

This constraint is applicable in all cases of relativization of an absolutive case-marked nominal, whether it is an external argument, or an internal argument, and in combination with all types of clausemate DPs. Below are examples of relative clauses with various argument structure configurations; in all of them the absolutive participant is relativized and a parasitic gap within a clausemate DP is deemed ungrammatical.

1. Absolutive external argument and a possessor of an oblique applied object. The verb *jeceqen* ‘bite’ is example of a predicate that takes an absolutive external argument (the one who bites) and an oblique applied object (the victim of the biting). If the absolutive agent of this predicate is relativized, the applied object may have as a possessor a pronoun that is co-referent with the relativized participant; this possessor pronoun, however, may not be replaced with a parasitic gap that would trigger wh-agreement on the possessed noun (43).

- (43) se sə-Ø-š'e-š'əne [RC ha-w<sub>i</sub> t<sub>i</sub>(ABS) [DP pro<sub>i</sub> / \*\_\_PG(PR)  
 I 1SG.ABS-3SG.IO-LOC-fear dog-ADV  
 Ø / \*z-jə-x<sup>w</sup>ezjajən](IO) Ø- Ø- je- ceqe -ž'ə -ɬe] -m  
 3SG/\*WH.PR-POSS-owner WH.ABS- 3SG.IO- DAT- bite -RE -PST -OBL  
 ‘I fear the dog that bit its owner.’

2. Absolutive internal argument and a possessor of an oblique applied object. In (44) the absolutive theme of the verb *qešen* ‘bring’ is relativized. In this example, this verb also takes an applied object, which is cross-referenced on the predicate via the benefactive applicative prefix. The possessor of this applied object is expressed as a null third person pronoun and triggers corresponding possessor agreement on the possessed nominal; this pronoun may be interpreted as co-referent with the relativized absolutive participant. This pronoun, however, cannot be replaced with a parasitic gap and, correspondingly, cannot trigger wh-agreement.

- (44) marə [RC pšaš-ew<sub>i</sub> t<sub>i</sub>(ABS) [DP *pro*<sub>i</sub> / \*\_\_PG(PR) Ø / \*z-jane](IO)  
 here girl-ADV 3SG/\*WH.PR-mother  
 Ø- qə- Ø- fe- s- š'a -be] -r  
 WH.ABS- DIR- 3SG.IO- BEN- 1SG.ERG- bring -PST -ABS  
 'Here is the girl whom I brought for her mother.'

3. Absolutive internal argument and a possessor of an ergative agent. In (45) the absolutive argument of the causative verb *bešxen* 'feed' is relativized; the null pronoun in the position of the possessor of the ergative agent may in this case be interpreted as co-referent with the relativized participant. As in the previous cases, however, a parasitic gap may not replace this pronoun.

- (45) [RC Op<sub>i</sub> t<sub>i</sub>(ABS) [DP *pro*<sub>i</sub> / \*\_\_PG(PR) Ø / \*z-jane](ERG)  
 3SG/\*WH.PR-mother  
 Ø- mə- ba- šxe -re] haž<sup>w</sup>əš'ər-xe-m sə-g<sup>w</sup>  
 WH.ABS- NEG- CAUS- eat -DYN puppy-PL-OBL 1SG.PR-heart  
 Ø-a-fe-wəzə  
 3ABS-3PL.IO-BEN-ache  
 'My heart aches for the puppies whom their mother doesn't feed.'

4. Absolutive internal argument and a possessor of an oblique experiencer. The final type of verb discussed in this subsection belongs to a small set of so-called inverse predicates, which take an oblique external argument and an absolutive theme (Rogava and Keraševa 1966:98; Smeets 1992:122-123; Arkadiev et al. 2009:64–65; Letuchiy 2013:741-742). One such verb is *š'əB<sup>w</sup>əpšen* 'forget'. In (46) the absolutive theme of this verb is relativized; as in the previous examples, the null pronoun triggering third person singular possessor agreement on the oblique experiencer argument may be interpreted as co-referent with the relativized participant. As in the previous cases, this pronoun cannot then be replaced with a parasitic gap.

- (46) [RC p̥šêšêžəj-ew<sub>i</sub>      t<sub>i</sub>(ABS)      [DP *pro*<sub>i</sub> / \*\_\_PG(PR)    Ø / \*z-jane](IO)  
girl-ADV                                  3SG/\*WH.PR-mother  
Ø-                 Ø-                 šʼə- bʷəpša -be] -m    sə-gʷ  
WH.ABS- 3SG.IO- LOC- forget -PST-OBL 1SG.PR-heart  
Ø-j-e-bʷ  
3ABS-3SG.ERG-DYN-chew  
'I pity the girl whom her mother forgot (lit. she chews my heart).'

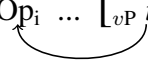
To summarize this subsection, we have seen that an absolute trace, regardless of the theta-role it is assigned, cannot license a parasitic gap in any of its clausemate DPs: ergative or oblique external arguments or applied indirect objects.

This subsection aims to connect the Absolutive Constraint in (42) with general structural restrictions that parasitic gaps are subject to. A well-known condition on the licensing of parasitic gaps is the anti-c-command condition, which states that the licensing gap may not c-command the parasitic gap (see e.g. Engdahl 1983; Aoun and Clark 1985; Chomsky 1986; Contreras 1987):

“A parasitic gap may not be c-commanded by the real gap.” (Engdahl 1983:22)

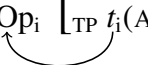
For some of the argument structure configurations listed in the previous section, the assumption that the absolutive trace c-commands the potential parasitic gap site is noncontroversial. For example, the absolutive external argument in (43) would c-command the possessor of the applied object under any theoretical account – this structure is illustrated

in (48) below: assuming that the absolutive DP merges as the specifier of *v*P and the applied object is introduced lower, as a specifier of ApplP, a trace in the absolutive position would c-command, and thus fail to license, a parasitic gap within the applied object.

$$(48) \quad [_{CP} Op_i \dots [_{vP} t_i(ABS) [_{ApplP} [_{DP(IO)} \underline{X}_{PG}] \dots ] ] ]$$


Recall, however, that the Absolutive Constraint applies to all types of absolutive arguments and in combination with all types of clausemate DPs: an absolutive trace cannot license a parasitic gap in an ergative, applied object or oblique experiencer DP. This forces us to conclude that the absolutive DP c-commands all of these arguments.

Subjecthood diagnostics such as reflexive binding<sup>17</sup> suggest that the base generated position of the absolutive DP varies according to its theta-role: an absolutive theme is introduced as the complement of  $V^0$  and an absolutive agent is introduced in Spec,*v*P. This means that the c-commanding position of the absolutive DP is derived. I propose that this position is Spec,TP: the absolutive DP is assigned case by  $T^0$  and moves to Spec,TP to satisfy the *u*EPP feature. Ergative and applicative case, on the other hand, are assigned in situ within *v*P, so neither the ergative, nor the indirect object DP move to a position higher than Spec,TP. This leads to a configuration wherein the absolutive DP c-commands all other verbal arguments. Thus, if the absolutive argument is relativized, its trace appears in a position that c-commands both the ergative and applied object DPs, ruling out the possibility of a parasitic gap in either position (49).

$$(49) \quad [_{CP} Op_i [_{TP} t_i(ABS) [_{vP} [_{DP(ERG)} \underline{X}_{PG}] [_{ApplP} [_{DP(IO)} \underline{X}_{PG}] \dots ] ] ] ]$$


The ergative, applied object and oblique experiencer DPs, on the other hand, do not c-command the absolutive DP – this predicts that a relativized participant in any of these

<sup>17</sup>See Arkadiev et al. (2009:63-67); Letuchiy (2010:339-344) on reflexives.

positions should be able to license a parasitic gap within the absolutive DP. This prediction is in fact borne out. In (50) we can see that an ergative trace can successfully license a parasitic gap within the absolutive DP.

- (50) marə [RC četəw-ew<sub>i</sub> [DP *pro*<sub>i</sub> / \_\_<sub>PG</sub>(PR) Ø / z-jə-šxən](ABS) t<sub>i</sub>(ERG) Ø- zə- mə- šxə -re] -r  
 here cat-ADV 3SG/**WH.PR**-POSS-food  
 3ABS- **WH.ERG**- NEG- eat -DYN -ABS  
 ‘Here is the cat that doesn’t eat its food.’

An indirect object wh-trace can likewise license a parasitic gap within an absolutive theme (51) or external argument (52), and the applied external argument of an inverse predicate can license a parasitic gap within the absolutive theme (53).

- (51) [RC pšaš-ew<sub>i</sub> [DP *pro*<sub>i</sub> / \_\_<sub>PG</sub>(PR) Ø / z-jə-txəλ](ABS) t<sub>i</sub>(IO) girl-ADV 3SG/**WH.PR**-POSS-book  
 Ø- z- e- sə- mə- tə -ž’ə -be] -r  
 3ABS- 3SG.IO- DAT- 1SG.ERG- NEG- give -RE -PST -ABS  
 Ø-qe-s-e-wəha  
 3ABS-DIR-1SG.ERG-DYN-avoid  
 ‘I avoid the girl to whom I haven’t given back her book.’

- (52) marə [RC č’ele-çək<sup>w</sup>-ew<sub>i</sub> [DP *pro*<sub>i</sub> / \_\_<sub>PG</sub>(PR) Ø / z-jane](ABS) t<sub>i</sub>(IO) here boy-small-ADV 3SG/**WH.PR**-mother  
 Ø- zə- fe- g<sup>w</sup>əbž -zepətə -re] -r  
 3ABS- **WH.IO**- BEN- be.angry -always -DYN -ABS  
 ‘Here is the boy at whom his mother is always angry.’

- (53) š<sup>w</sup>ə Ø-s-λeɸ<sup>w</sup>ə-r-ep [RC Op<sub>i</sub> [DP *pro*<sub>i</sub> / \_\_<sub>PG</sub>(PR) good 3ABS-1SG.ERG-see-DYN-NEG  
 Ø / z-jə-š’ər-xe-r](ABS) t<sub>i</sub>(IO) Ø- zə- š’ə- ɸ<sup>w</sup>əpša -be] 3SG/**WH.PR**-POSS-cub-PL-ABS 3ABS- **WH.IO**- LOC- forget -PST  
 četəwə-r  
 cat-ABS  
 ‘I don’t like the cat that forgot its kittens.’



To conclude this subsection, an absolutive trace cannot license a parasitic gap within clausemate DPs. An ergative or indirect object trace, on the other hand, can readily license a parasitic gap within the absolutive DP. Given the anti-c-command condition on parasitic gaps, this leads us to conclude that the absolutive DP occupies the highest A-position within the clausal spine, c-commanding both the ergative agent and any applied objects.<sup>18</sup>


### 4.3 Multiple wh-agreement is not pronominal binding

An alternative account for the Absolutive Constraint is offered by Caponigro and Polinsky (2011), who address a subset of constructions involving multiple wh-agreement, in particular, cases wherein a possessor pronoun bears wh-agreement if an argument that is co-referent with that pronoun is relativized. They propose to treat this construction as a case of  $\phi$ -agreement between the wh-trace and a bound pronoun, following a similar proposal by O’Herin (2002) for Abaza.<sup>19</sup> The structure they assume for a multiple wh-agreement construction like (22), repeated below in (54), is shown in (55): the relativized ergative participant (which, under their analysis raises to Spec,TP) binds the possessor pronoun within the applied object DP and transfers the WH-feature to this pronoun via  $\phi$ -agreement.


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<sup>18</sup>A reviewer points out the given the Phase Impenetrability Condition (PIC) and standard assumptions about the phasehood of *v*P (see e.g. Chomsky 2001), we might expect the absolutive DP to move to Spec,*v*P on its way to Spec,TP. The proposed analysis is not readily compatible with this (strong) version of the PIC, since it would falsely predict that this intermediate movement should license parasitic gaps within *v*P. There are two main approaches to phasehood which are compatible with the analysis: (i) per the Weak PIC a phase becomes inaccessible only at the time the next phase is merged, meaning that the absolutive DP moves directly to Spec,TP before the higher CP phase is formed and thus does not need to move to Spec,*v*P; (ii) *v*P in West Circassian is not a phase – this is indirectly supported by its failure to act as a distinct prosodic spellout domain, in contrast to DP and CP (Ershova 2019). I leave the determination of the correct approach for future research.

<sup>19</sup>See also Baier and Yuan (2018) for a recent discussion of O’Herin’s (2002) analysis.

- (55)  $[_{CP} Op_i \dots [_{TP} t_i(ERG)[WH] \dots [_{AppIP} [_{DP(IO)} pro_i[WH] ] \dots ] ] ]$   

 AGREE VIA BINDING

from the absolute position within VP triggers a Weak Crossover violation (57).

- (57)  $\left[ \text{CP Op}_i \left[ \text{TP} \left[ \text{DP(ERG)} \text{ } \textit{pro}_i[\mathbf{WH}] \right] \dots \left[ \text{VP } t_i(\mathbf{ABS})[\mathbf{WH}] \right] \right] \right]$   
  
WCO VIOLATION

theme over the wh-agreeing possessor within the ergative DP is a Weak Crossover viola-

tion, it is unclear why the possessor pronoun within the ergative DP may still be interpreted as co-referent with the relativized argument in the absence of wh-agreement, a consideration also noted by Lander (2012:332). Additionally, the pronominal binding account makes false predictions for cross-clausal Weak Crossover configurations (examples (62)-(63)) to be discussed in the following section.

In summary, a parasitic gap analysis of multiple wh-agreement provides a principled explanation for the Absolutive Constraint: the absolutive trace fails to license parasitic gaps within clausemate DPs due to the anti-c-command condition on parasitic gaps.

## **5 Interactions between non-absolutive DPs and A-scrambling**

In this section I demonstrate how constraints on parasitic gaps can be used to argue for A-scrambling in West Circassian: in particular, I argue that the applied object is introduced in Spec,ApplP below the ergative agent and may then undergo optional A-scrambling to Spec,vP. Evidence for this movement comes from (i) the ability of an ergative trace to license a parasitic gap within the applied object DP; (ii) the optionality of the parasitic gap within the ergative DP when an applied object is relativized. This means that non-absolutive DPs simultaneously fail to display anti-c-command and Weak Crossover effects.

As was mentioned in the introduction, West Circassian displays rampantly free word order, often with no apparent correlation with sentence prosody or information structure (see e.g. Kumakhov and Vamling 2006:72-119; Lander 2012:89-92; Lander and Testelefs 2017:951), suggesting that this may be a non-configurational language, with full DPs appearing in adjoined or dislocated positions, as proposed e.g. by Jelinek (1984); Hale (1994); Baker (1996). However, in the previous section we saw that restrictions on parasitic gap licensing provide evidence for the absolutive DP asymmetrically c-commanding the ergative and applied object DP – a structure that is incompatible with a non-configurational account. This section demonstrates how the application of the same parasitic gap diagnostic used in

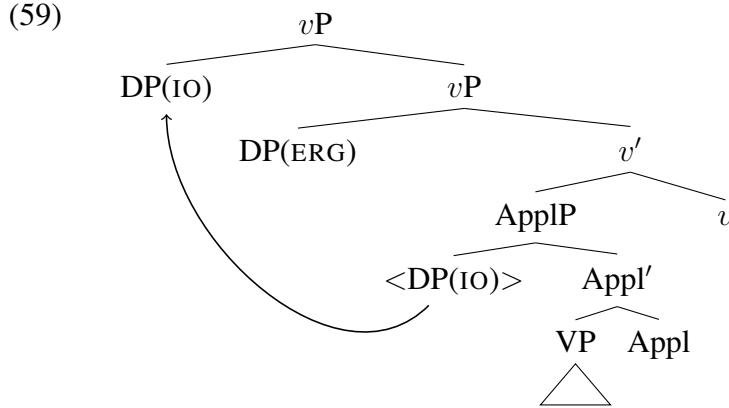
the previous section fails to determine the relative c-command relations between the ergative and applied object DPs. I argue that this is due to optional A-movement of the applied object to Spec,*v*P – a position c-commanding the ergative agent. The proposed operation is parallel to other cases of scrambling that exhibit A-properties cross-linguistically, e.g. in Hindi (Mahajan 1990, 1994; Dayal 1994), Persian (Karimi 2003, 2005), Japanese (Grewendorf and Sabel 1999), Georgian (McGinnis 1999), and Tlingit (Cable 2009), among others.

The analysis set forth in the previous subsection predicts that in all cases where a DP c-commands another DP, it should fail to license a parasitic gap within the DP it c-commands. Thus, if we assume that the ergative DP is merged as the specifier of *v*P and an applied object is merged within *v*P as the specifier of ApplP and both arguments remain in situ, we expect an ergative trace to fail to license a parasitic gap within the applied object, but not vice versa. However, this prediction is not borne out. An applied object trace may license a parasitic gap within the ergative DP, as is shown in (16b), repeated below in (58a). The inverse configuration, however, is also possible: in (58b), an ergative trace successfully licenses a parasitic gap within the applied object.

- (58) a. marə [RC č'al-ew<sub>i</sub> [DP *pro*<sub>i</sub> / \_\_PG(PR) ə / zə-š ](ERG) t<sub>i</sub>(IO)  
 here boy-ADV 3SG/WH.PR-brother  
 velosjəped Ø- qə- ze- r- jə- tə -be] -r  
 bicycle 3ABS- DIR- WH.IO- DAT- 3SG.ERG- give -PST -ABS  
 'Here is the boy<sub>i</sub> to whom his<sub>i</sub> brother gave a bicycle.'
- b. marə [RC č'al-ew<sub>i</sub> t<sub>i</sub>(ERG) [DP *pro*<sub>i</sub> / \_\_PG(PR) ə / zə-š ](IO)  
 here boy-ADV 3SG/WH.PR-brother  
 velosjəped Ø- Ø- je- zə- tə -be] -r  
 bicycle 3ABS- 3SG.IO- DAT- WH.ERG- give -PST -ABS  
 'Here is the boy who<sub>i</sub> gave a bicycle to his<sub>i</sub> brother.'

I propose that the lack of any anti-c-command effect between non-absolutive DPs is a consequence of A-scrambling within *v*P. In particular, *v*<sup>0</sup> may optionally carry an *u*EPP feature which allows for the applied object to undergo movement to Spec,*v*P, i.e. a position that

c-commands the ergative agent (59). This means that for any configuration that involves an ergative agent and an applied object, two structures are available: the base-generated configuration with the ergative DP c-commanding the applied object and the structure that is derived by scrambling the applied object to a position that c-commands the ergative DP.



In regards to parasitic gaps, the consequence of this scrambling is that just as an applied object trace may license a parasitic gap within the ergative DP if it is relativized from its base position (60a); a relativized ergative trace may license a parasitic gap within a scrambled indirect object, since it no longer c-commands the potential site of the parasitic gap – this is illustrated in (60b).

- (60) a.  $[_{CP} Op \dots [_{vP} [_{DP(ERG)} \checkmark_{PG}] [_{AppIP} t_{IO}] \dots ] ] ]$   
 b.  $[_{CP} Op \dots [_{vP} [_{DP(IO)} \checkmark_{PG}] [_{vP} t_{ERG} [_{AppIP} t_{IO}] \dots ] ] ] ]$

The availability of the structure in (59) explains another puzzle regarding conditions on parasitic gap licensing in West Circassian. In particular, it has been robustly observed since Engdahl (1983) that certain configurations give rise to obligatory parasitic gaps which cannot be replaced with a personal pronoun. An example of such a configuration in English is provided in (61). The parasitic gap in (61) is obligatory under the bound reading of the possessor because the use of an overt pronoun in this position would trigger a Weak

Crossover violation, with the wh-phrase *which student* undergoing  $\bar{A}$ -movement from the object position to Spec,CP over a coreferent pronoun within the subject DP.

- (61) Which student<sub>i</sub> did [your attempt to talk to \_\_/\*him<sub>i</sub>] scare \_\_ to death? (Engdahl 1983:16)

However, no such effect is observed between clausemate DPs in West Circassian. For example, the parasitic gap in (58a) is optional and freely alternates with a null pronoun that triggers regular  $\phi$ -agreement, despite this being a potential Weak Crossover violation. This is especially striking, given that the language does in fact display a Weak Crossover effect in cross-clausal contexts, with an obligatory parasitic gap within the DP that c-commands the wh-trace, as in the English example (61). Thus, if the ergative agent of the complement clause in (62) is relativized, the co-referent possessive pronoun on the ergative DP in the matrix clause must be replaced with a parasitic gap; the same effect is observed in (63), where the applied object is relativized out of the complement clause, licensing an obligatory parasitic gap in place of the possessor of the absolutive DP in the matrix clause.

- (62) marə [RC pšaš-ew<sub>i</sub> [CP t<sub>i</sub>(ERG) zə- z- be- pskə -n -ew ]  
 here girl-ADV REFL.ABS- **WH.ERG**- CAUS- bathe -MOD -ADV  
 z / \*Ø-jane(ERG) Ø-qə-s-tər-jə-be-pətəha-be] -r  
**WH/\*3SG.PR**-mother 3ABS-DIR-1SG.IO-LOC-3SG.ERG-CAUS-enforce-PST -ABS  
 ‘Here is the girl who<sub>i</sub> her<sub>i</sub> mother told me [\_\_ should bathe].’

- (63) marə [RC pšaš-ew<sub>i</sub> [CP č’elejeɁəʒe-r t<sub>i</sub>(IO)  
 here girl-ADV teacher-ABS  
 Ø- qə- z- e- çeçe -n -ew ] z / \*Ø-jane(ABS)  
 3ABS- DIR- **WH.IO**- DAT- scold -MOD -ADV **WH/3SG.PR**-mother  
 Ø-fe-mə-je] -r  
 3ABS-BEN-NEG-want -ABS  
 ‘Here is the girl whom<sub>i</sub> her<sub>i</sub> mother doesn’t want [the teacher to scold \_\_]’

The fact that the language displays Weak Crossover effects cross-clausally, but fails to do so with clausemate DPs, can be explained via locally constrained A-scrambling within

*v*P. Thus, the Weak Crossover data, together with the lack of anti-c-command effects between the ergative DP and applied object, provide evidence for A-movement of the applied object to Spec,*v*P. The examples in (62)-(63) also pose a challenge to the Weak Crossover analysis of the Absolutive Constraint proposed by Caponigro and Polinsky (2011) (see subsection 4.3): since these are unquestionable Weak Crossover configurations, their analysis predicts the possessor wh-agreement in the matrix clause to be ungrammatical.

There is, however, an important difference between Weak Crossover and anti-c-command effects: while, as we saw in section 4, the absolutive DP shows anti-c-command effects in regards to other clausemate DPs, it fails to show any Weak Crossover effects, behaving as if it does not asymmetrically c-command the ergative agent or the applied object. This can be seen in examples (51)-(53): if an ergative agent or applied object is relativized, the parasitic gap within the absolutive DP does not become obligatory despite the resulting structure displaying a Weak Crossover violation. I propose that this mixed behavior is due to the possibility of optional reconstruction of the absolutive DP in its base generated position (see e.g. Romero 1997; Fox 2000; Sportiche 2005, 2017 for discussion of reconstruction under A-movement). This leads to two possible structures, which are illustrated in (64): in one, the absolutive DP is interpreted in Spec,TP – in this case, the parasitic gap is obligatory, because a possessor pronoun in this position would trigger a Weak Crossover violation (64a); in the second, the absolutive DP is interpreted in its base generated position within VP: in this case, a parasitic gap cannot be licensed due to the anti-c-command condition, and a pronoun may successfully surface instead (64b).

- (64) a.  $\left[ \text{CP } \text{Op}_i \left[ \text{TP } \left[ \text{DP}_{\text{ABS}} \checkmark_{\text{PG}} / *pro_i \right]_j \left[ \text{vP } t_i(\text{ERG}) \left[ \text{VP } \langle \text{DP}_j(\text{ABS}) \rangle \right] \right] \right] \right]$
- b.  $\left[ \text{CP } \text{Op}_i \left[ \text{TP } \langle \text{DP}_j(\text{ABS}) \rangle \left[ \text{vP } t_i(\text{ERG}) \left[ \text{VP } \left[ \text{DP}_{\text{ABS}} \right] \underline{\mathbf{x}}_{\text{PG}} / \checkmark pro_i \right]_j \right] \right] \right]$

To conclude this section, we have seen that the lack of anti-c-command effects between ergative and applied object DPs provides evidence for optional A-scrambling of the applied

object to a position c-commanding the ergative DP.

## 6 Conclusion

I have proposed a novel analysis of multiple wh-agreement constructions in West Circassian as the manifestation of a parasitic gap dependency. I have shown how the distribution of the additional wh-agreement in multiple wh-agreement constructions shares the full set of properties associated with parasitic gaps cross-linguistically. I then explore the consequences of this analysis by examining the distribution of parasitic gaps within clausemate DPs. Multiple wh-agreement thus proves to be a fruitful diagnostic for clause structure: we observe that the absolutive DP cannot license parasitic gaps within ergative or applied object DPs, which means that they are within the c-command domain of the absolutive DP. We further observe that an ergative wh-trace can license a parasitic gap within the applied object DP, indicating that the applied object may undergo scrambling to Spec,*v*P.

The presented analysis allows us to view a puzzling morphological phenomenon as the surface manifestation of a well-understood syntactic configuration, thus supplying us with a powerful tool for diagnosing the syntax of a polysynthetic language. This analysis demonstrates how, in the absence of traditional syntactic cues such as word order restrictions, free-standing anaphors or consistent dependent marking, the study of morphological forms and their distribution may shed light on the underlying syntactic structure of a language.

Moving forward, the syntactic analysis of the morphological phenomenon of wh-agreement presents a promising avenue for further investigation into the syntax of West Circassian as well as the theory of parasitic gaps. For example, anti-c-command effects appear to be altogether absent in cross-clausal parasitic gap dependencies: a wh-trace in any of the argument positions within the matrix clause, including the absolutive, may license a parasitic gap within the embedded clause (see examples (28)-(30)). This is true of both complement



and adjunct clauses.<sup>20</sup> At first glance the lack of anti-c-command effects in cross-clausal contexts poses a challenge to the parasitic gap analysis of multiple wh-agreement. However, it is likely to be connected to another peculiar property of West Circassian: the language generally displays Condition C insensitivity across clausal boundaries, regardless of the syntactic status of the embedded clause (Testelefs 2009b).<sup>21</sup> Given that anti-c-command effects have often been compared to Condition C effects (see e.g. discussion in Culicover 2001), the co-occurrence of these two phenomena in West Circassian seems to be more than a coincidence and further investigation of this phenomenon may lead to a better understanding of the nature of the anti-c-command condition. In particular, in order to capture this data within Nissenbaum's (2000) tree-geometric framework, where anti-c-command effects are derived via constraints on semantic types and attachment sites, one would have to posit that all embedded clauses in West Circassian are dislocated and thus not c-commanded by any arguments of the matrix clause (as e.g. proposed for Hindi by Dayal 1996). The dislocation approach would likewise be necessary within a sideward movement approach to parasitic gaps advocated by Nunes (2001, 2004), where the anti-c-command effect is derived as a locality violation on the chain formation between the higher operator and the parasitic gap. On the other hand, if no evidence for clausal dislocation can be found, cross-clausal parasitic gap constructions may be used to argue for a Condition C account of anti-c-command effects, wherein the null operator in the parasitic gap construction is understood as a special type of referential expression and clausal boundaries obviate Condition C requirements for referential DPs in embedded contexts, thus connecting this data to other documented coun-

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<sup>20</sup>Lander (2009a, 2012) argues that the fact that the Absolute Constraint does not apply in cross-clausal contexts indicates that this construction is structurally distinct from intra-clausal cases, where the additional wh-agreement appears within a clausemate DP. Given that the two constructions otherwise have a very similar distribution, a more fruitful approach is to apply a unified analysis to both types of structures and derive the lack of the Absolute Constraint from structural differences between the two constructions.

<sup>21</sup>See also Potsdam and Polinsky (2012) for a backward raising analysis of a subset of constructions displaying cross-clausal Condition C insensitivity.

terexamples to the anti-c-command condition (see e.g. Contreras 1987; Horvath 1992).

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