1   Introduction

> **The broad question:** What are subjects syntactically?
>
> **The narrow questions:** What does it mean to be a subject in a syntactically ergative language? And what is the role of subjecthood in anaphor binding?

Many languages display varying degrees of **syntactic ergativity**, i.e. syntactic operations that treat absolutive-marked nominals (intransitive subjects and direct objects) as structurally prominent (≈ subject-like) (Bittner and Hale 1996; Coon et al. 2014; Polinsky 2017, a.o.).

> **A** = transitive subject   **O** = direct object   **S** = intransitive subject
> **Syntactic ergativity**   vs.   **"Syntactic accusativity"**
> S/O > A   S/A > O

In **West Circassian** (or Adyghe; Northwest Caucasian), restrictions on parasitic gap licensing provide evidence for a **high absolutive analysis of syntactic ergativity** (Ershova 2018b,a), per Bittner and Hale (1996); Manning (1996); Baker (1997); Coon et al. (2014); Yuan (2018), a.o.

+ functionalist and descriptive work on West Circassian suggests special, subject-like status for absolutive (Lander 2009; Letuchiy 2010)

The puzzle: In these languages, some operations still single out the highest argument in the argument hierarchy (S/A), i.e. follow a **syntactically accusative** pattern.

Case study – West Circassian anaphors:

- **reflexives** follow a syntactically accusative pattern: the ergative DP binds the absolutive DP (Letuchiy 2010; Caponigro and Polinsky 2011; Lander and Testelets 2017)

- **reciprocals** follow a syntactically ergative pattern: the absolutive DP binds the ergative DP (Letuchiy 2010)

In a transitive verb (ERG-ABS), reflexive and reciprocal prefixes replace ϕ-agreement morphemes of opposite arguments.

(1)   **Theme(ABS)-   Agent(ERG)-**

    a.   **zə-**   t-   λɐʁʷə   -ʁ | ABS→REFL |
           REFL.ABS-   1PL.ERG-   see   -PST   'We saw ourselves.'

    b.   te-   **zere-**   λɐʁʷə   -ʁ | ERG→REC |
           1PL.ABS-   **REC.ERG-**   see   -PST   'We saw each other.'

Glosses: ABSolutive; ADVerbial; BENefactive; CAUSative; COMitative; DATive; DIRective; ERGative; FUTure; IO–indirect object; IPF–imperfect; LOCative; MODal future; NEGation; OBLique; PL–plural; POSSessive; POTential; PR–possessor; PRS–present tense; PST–past tense; REfactive; RECiprocal; REFLexive; SG–singular; TRANSlocative.

> **The solution:**
>
> - In a syntactically ergative language, the high position of the absolutive argument is **derived via A-movement** to Spec,TP. – In West Circassian, this high position is confirmed by the behavior of reciprocals.
>
> - **Both reflexives and reciprocals** are standard anaphors that must be bound by a **higher** argument in the **A-domain (TP)**.
>
> - Due to an **additional condition on reflexive licensing**, the set of possible antecedents for reflexives is reduced to the **highest** argument in the **θ-domain (vP)**.

Implications:

> **Syntactic ergativity:**

- The analysis provides support for the idea that **syntactic ergativity is derived**, as proposed e.g. by Bittner and Hale (1996); Manning (1996); Baker (1997); Aldridge (2008); Coon et al. (2014); Yuan (2018).

- Through discussion of an unusual diagnostic for syntactic ergativity (reciprocal binding), I show that **syntactic ergativity must be derived via A-movement**.

  > ⇒ the absolutive DP occupies the highest A-position in the clause (≈ surface subject)

> **Anaphors and subjecthood:**

- West Circassian reflexives fall into a typologically common class of anaphors: **local subject oriented reflexives** – their presence is conditioned by Voice$_{REFL}$ (Labelle 2008; Ahn 2015; Bhatia and Poole 2016).

- As a syntactically ergative language, West Circassian presents novel evidence that "local subject orientation" is due to **conditions on locality**, and not subjecthood per se.

  > ⇒ subjecthood is not relevant for anaphor binding, i.e. "subject" is not a primitive.

Subjecthood properties (= properties associated with structural prominence) can be dispersed across several positions (see e.g. Harley 1995; Bobaljik and Jonas 1996; McCloskey 1997).

In a syntactically ergative language, these positions may be occupied by distinct arguments (e.g. absolutive and ergative), rendering **conflicting results for diagnostics of structural prominence**.[1]

Roadmap: 2 Background on clause structure and anaphor expression; 3 Reciprocals and syntactic ergativity; 4 Locality conditions on reflexive binding; 5 Conclusion.

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[1] See Guilfoyle et al. (1992) for similar proposal on Austronesian mixed-pivot systems.

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2 Background on West Circassian

Data: Unless otherwise indicated, from the Temirgoy dialect (the basis of the literary standard); collected by the author in the Khatazhukay rural settlement and Maykop (Republic of Adygea, Russia) during two trips in fall 2017 and summer 2018.

2.1 Polysynthesis

- complex words with agglutinating prefixal and suffixal morphology:

(2) *wəqəzereŝhapərəzʁewək̫ʼəreječ'əž'əŝ̫əʁaʁer*

wə-	qə-	zere-	ŝha-	pə-	rə-	z-	ʁe-	wək̫ereje	-č'ə	-ž'ə
2SG.ABS-	DIR-	FACT-	head-	LOC-	TRANS-	1SG.ERG-	CAUS-	fall	-go.out	-RE

-ŝ̫ə	-ʁa	-ʁe	-r
-POT	-PST	-PST	-ABS

'that I was able to make you turn a somersault' (Lander and Testelets 2017:952)

- head marking and pro-drop:

(3) *səqəpfarjəʁeλeʁ̫əʁ*

sə-	qə-	p-f-	a-r-	jə-	ʁe-	λeʁ̫ə	-ʁ
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)

- free word order:

(4) a. **[mə č'ale-m](IO)** zaʁ̫ere **[ə-š-xe-r](ABS)** jewex
   this boy-OBL sometimes 3SG.PR-brother-PL-OBL 3ABS.PL+3SG.IO.hit

   b. **[ə-š-xe-r](ABS)** zaʁ̫ere **[mə č'ale-m](IO)** jewex
   3SG.PR-brother-PL-ABS sometimes this boy-OBL 3ABS.PL+3SG.IO.hit

   'His$_{i/j}$ brothers sometimes hit this boy$_i$.'

2.2 Case and agreement

- Agreement morphology follows ergative pattern

(5) a. **ABS(O)-** **APPL-** **ERG(A)-**
   w- a-de- s- š'aʁ
   1SG.ABS- 3PL.IO+COM- 1SG.ERG- bring.PST

   'I brought you with them' (Rogava and Keraševa 1966:160)

   b. **ABS(S)-** **APPL-**
   wə- q- a-fe- k̫aʁ
   2SG.ABS- DIR- 3PL.IO+BEN- go.PST

   'You went for them.' (Rogava and Keraševa 1966:138)

- IO agreement is bundled with an applicative prefix, e.g. *de-* 'COM', *fe-* 'BEN'

- Two core cases:

   -r (absolutive) = subject of intransitive verb (6a), theme of transitive verb (6b)
   -m (oblique) = agents of transitive verbs (6b), applied objects (6c), possessors (6d), complements of postpositions (6e)

(6) a. mə pŝaŝe-**r** dax-ew Ø-qa-ŝ̫e
   this girl-**ABS** beautiful-ADV 3ABS-DIR-dance
   'This girl(S) dances well.'

   b. sabəj-xe-**m** ha-xe-**r** Ø-q-a-λeʁ̫ə-ʁ
   child-PL-**OBL(=ERG)** dog-PL-**ABS** 3ABS-DIR-3PL.ERG-see-PST
   'The children(A) saw the dogs(O).'

   c. ʒeg̫ə-**m** sə-qə-Ø-š'ə-ŝ̫a-ʁ-ep
   wedding-**OBL(=IO)** 1SG.ABS-DIR-3SG.IO-LOC-dance-PST-NEG
   'I didn't dance at the wedding.'

   d. mə ŝ̫əzə-**m** Ø-jə-pŝaŝe
   this woman-**OBL(=POSS)** 3SG.PR-POSS-girl
   'this woman's daughter'

   e. mə ŝ̫əzə-**m** paje
   this woman-**OBL(=PP)** for
   'for this woman'

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- Indefinite nouns (7a), personal pronouns (7a), possessed nominals in the singular (7b), and proper names (7c) are usually unmarked for case (Arkadiev and Testelets 2015)

(7)   a. **we**   mə pŝaŝe-m   **txəλ**   Ø-Ø-je-p-tə-ʁ
         you(ERG) this girl-OBL **book(ABS)** 3ABS-3SG.IO-DAT-2SG.ERG-give-PST
         'You gave this girl a book.'

   b. mə sabəjə-r   **ə-šəpχʷ**   Ø-q-ə-š'a-ʁ
        this child-OBL **3SG.PR-sister(ERG)** 3ABS-DIR-3SG.ERG-bring-PST
        'Her sister brought this child.'

   c. **zarjəne**   Ø-Ø-faj   **asje**   Ø-qe-ŝʷe-n-ew
        Zarina(ABS) 3ABS-3SG.IO-want **Asya(ABS)** 3ABS-DIR-dance-MOD-ADV
        'Zarina wants Asya to dance.'

2.3   Reflexive and reciprocal agreement

Anaphor binding is expressed morphologically via the replacement of one of the ϕ-agreement prefixes with *zə-* 'REFL' or *ze(re)-* 'REC'.[2]

(8)   a. **ŝʷə-**   t-   λeʁʷə -ʁ   'We saw you(pl).'
         2PL.ABS- 1PL.ERG- see   -PST

   b. **zə-**   t-   λeʁʷə -ʁ   'We saw ourselves.'
        REFL.ABS- 1PL.ERG- see   -PST

In a polysynthetic language like West Circassian, syntactic analysis requires establishing correlations between complex morphological forms and syntactic structure.

> In West Circassian, reflexive and reciprocal morphology marks agreement with a syntactically active bound anaphor.

Contrast with:

(i) de-transitivizing reflexive/reciprocal morphology in e.g. Hebrew (Reinhart and Siloni 2005), Passamaquoddy, Japanese and Chichewa (Bruening 2004)

(ii) free-standing reflexive/reciprocal pronouns in e.g. English

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2.3.1   The morphological position changes to reflect bound argument

(9)   **ABS(S) > IO**

   a. wə-   **zə-**   f-   je- ǯe -ž'ə -ʁ
        2SG.ABS- **REFL.IO-** BEN- DAT- read -RE -PST
        'You studied for yourself.' | IO→REFL |

   b. te λešə tə-   **ze-**   fe- χʷə -ʁ
        we strong 1PL.ABS- **REC.IO-** BEN- become -PST
        'We became strong for each other.' | IO→REC |

(10) **ERG > IO**

   a. Ø-   qə- **z-**   e-   t-   tə -ž'ə -ʁ
        3ABS- DIR- **REC.IO-** DAT- 1PL.ERG- give -RE -PST
        'We gave it to ourselves.' | IO→REFL |

   b. te(ERG)   wəne-xe-r   Ø-   **ze-**   fe- t-   ŝ̇ə -ʁ
        we   house-PL-ABS 3ABS- **REC.IO-** BEN- 1PL.ERG- do -PST
        'We built houses for each other.' (Arkadiev et al. 2009:67) | IO→REC |

(11) **REFL: ERG > ABS | REC: ABS > ERG**

   a. **zə-**   ŝʷ-e-   s-   š'e -n   s-λeč̣'ə-š't
        REFL.ABS- 2PL.IO+DAT- 1SG.ERG- sell -MOD 1SG.ERG-can-FUT
        'I could sell myself to you (there's nothing else).' (A salesperson joking about their store running out of goods.) | ABS→REFL |

   b. Ø-   Ø-š'ə-   **zere-**   ʁe- čefə -x
        3ABS- 3SG.IO+LOC- **REC.ERG-** CAUS- rejoice -PL
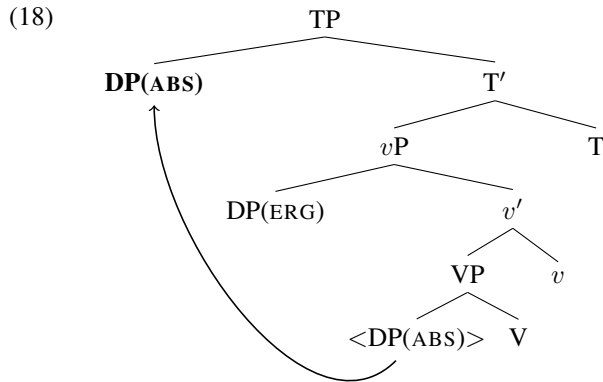   'They enjoyed themselves with each other (lit. made each other rejoice) [at the weddings].' (AC)[3] | ERG→REC |

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[2] *ze(re)-* for ergative DPs and causees of a transitive verb; *ze-* for all other arguments.

[3] Adyghe corpus: `http://adyghe.web-corpora.net/index_en.html`

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2.3.2 No valency reduction

Antecedent DP must carry case of non-anaphor argument:

(12) **ABS(S) > IO:**

    a.   sabəj-xe-**r/*m(ABS)**   *refl*(IO)   ʁʷənӡe-m
       child-PL-**ABS/*OBL**   mirror-OBL

       Ø-   Ø-   š'ə- **z-**   e-   pλə -ž'ə -x
       3ABS- 3SG.IO- LOC- **REFL.IO-** PRS- look -RE -PL

       'The children are looking at themselves in the mirror.'   **REFL**

    b.   sabəj-xe-**r/*m(ABS)**   *rec*(IO)   Ø-   **z-**   e-   pλə -ž'ə -x
       child-PL-**ABS/*OBL**   3ABS- **REC.IO-** DAT- look -RE -PL

       'The children are looking at each other.'   **REC**

(13) **REFL: ERG > ABS | REC: ABS > ERG:**

    a.   s-jə-pŝaŝe-xe-**m/*r(ERG)**   *refl*(ABS)   **z-**   a-   fepa -ʁ
       1SG.PR-POSS-girl-PL-**OBL/*ABS**   **REFL.ABS-** 3PL.ERG- dress -PST

       'My daughters dressed themselves.'   **REFL**

    b.   mə   sabəj-xe-**r/*m(ABS)**   *rec*(ERG)
       this   child-PL-**ABS/*OBL**

       Ø-   tje- **zere-**   ʁe-   fe -ž'ə -ʁe -x
       3ABS- LOC- **REC.ERG-** CAUS- fall -RE -PST -PL

       'These children made each other fall over.'   **REC**

Note: reciprocal marker is <u>not</u> a de-transitiver – the antecedent DP is not always absolutive

(14) **ERG > IO:**

    a.   (...) a-xe-**me(ERG)**   zanč'-ew   *rec*(IO)
           that-PL-**PL.OBL**   direct-ADV

       zewəže(ABS)   Ø-   **ze-**   r-   a-   ʔʷete -ž'ə -š'tə -ʁe
       all   3ABS- **REC.IO-** DAT- 3PL.ERG- tell -RE -IPF -PST

       'They certainly told the whole truth to each other.' (R&K1966:274)   **REC**

    b.   λə-ẑə-**m(ERG)**   Ø-jə-paʔʷe(ABS)   *refl*(IO)
       man-old-**OBL**   3SG.PR-POSS-hat

       Ø-   **zə-**   š'ə- λa -ʁ
       3ABS- **REFL.IO-** LOC- put.on -PST

       'The old man put his hat on himself.' (R&K1966:267)   **REFL**

Anaphor is usually null, but may be expressed overtly:

(15)   š'aқʷe-m(ERG)   **jež'(IO)**   tovarə-r
       salesperson-OBL   **self**   product-ABS

       Ø-   **ze-**   r-   jə-   š'e -ž'ə -ʁ
       3ABS- **REFL.IO-** DAT- 3SG.ERG- sell -RE -PST

       'The salesperson sold the product to herself.'   **REFL**

(16)   cəf-xe-r(ABS)   [**zə-m**   **zə-r**](ERG)   Ø-   **zere-**   wəč'ə -ž'ə
       person-PL-ABS   **one-OBL one-ABS**   3ABS- **REC.ERG-** kill -RE

       'People kill each other.'   **REC**

Note: the order of case-marking on *zəm zər* is idiosyncratic and does not depend on argument frame – same order of case-marking for ABS>IO:[4]

(17)   [**zə-m**   **zə-r**](IO)   ŝʷə-   qə- **ze-**   de-   ŝʷe -ž'ə -š't -a
       one-OBL one-ABS   2PL.ABS- DIR- **REC.IO-** COM- dance -RE -FUT -Q

       'Will you(pl) dance with each other?'

> **Summary:**
> Reflexive and reciprocal morphemes track agreement with a syntactically active anaphoric pronoun.
> ⇒ Their position within the verbal form can be used to diagnose the syntactic position of the bound pronoun.

2.4 Syntactic ergativity

The functionalist intuition:

Lander (2009): absolutive (S/O) pattern together to the exclusion of A in relative clause formation (i) relativization of ABS is morphologically unmarked; (ii) restrictions on position of internal head; (iii) restrictions on possessor extraction.

Letuchiy (2010): absolutive (S/O) is 'privileged' in being inaccessible for argument structure alternations; reciprocal binding follows a syntactically ergative pattern.

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[4]This might be an indication that this is an elliptical or appositive structure, rather than a true reciprocal pronoun.

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Syntactic evidence:

Ershova (2018b,a): restrictions on parasitic gap licensing provide evidence for absolutive c-commanding clausemate DPs – for ***structural syntactic ergativity***.

Proposed clause structure for a transitive (ERG-ABS) verb:

(18)

Components of the analysis:

- DP_{ABS} is merged in various positions based on theta-role, but moves to Spec,TP for licensing.

- DP_{ERG} and DP_{IO} are licensed in-situ.

- details in Appendix A.

Previous proposals for high absolutive: Bittner and Hale (1996); Manning (1996); Baker (1997); Aldridge (2008); Coon et al. (2014); Yuan (2018).

3   Reciprocals and syntactic ergativity

Main claim: Reciprocal binding patterns provide evidence for structural syntactic ergativity, i.e. for **A-movement of the absolutive DP to a position c-commanding other arguments**.

In contexts not involving absolutive themes, reciprocal binding follows vP-internal c-command relations:

(19) a. te wəne-xe-r   Ø-   ze-   fe- t-   ṣ̌ə -ž'ə -ʁ
           we house-PL-ABS 3ABS- **REC.IO**- BEN- 1PL.ERG- do -RE -PST

      'We built houses for each other.'   ERG>IO

      b. * te wəne-xe-r   Ø-   t-   fe- **ze**-   ṣ̌ə -ž'ə -ʁ
           we house-PL-ABS 3ABS- 1PL.IO- BEN- **REC.ERG**- do -RE -PST

      Intended: 'We built houses for each other.'   *IO>ERG

      c. $[_{TP} \ldots [_{vP} DP_i(ERG) \ldots [_{ApplP} \textbf{REC}_i(IO) \ldots$

(20) a. te λešə tə-   **ze**-   fe- χʷə   -ʁ
           we strong 1PL.ABS- **REC.IO**- BEN- become -PST

      'We became strong for each other.'   ABS>IO

      b. * te λešə **ze-**   t-   fe- χʷə   -ʁ
           we strong **REC.ABS-** 1PL.IO- BEN- become -PST

      Intended: 'We became strong for each other.'   *IO>ABS

      c. $[_{TP} DP_i(ABS) \ldots [_{vP} <DP_i(ABS)> [_{ApplP} \textbf{REC}_i(IO) \ldots$

A structure with high absolutive correctly predicts that an absolutive theme binds an ergative agent or applied object:

(21) a. **Theme(ABS)**- **Agent(ERG)**-
           te-   **zere**-   λeʁʷə -ʁ
           1PL.ABS-   **REC.ERG**-   see   -PST

      'We saw each other'   ABS>ERG

      b. $[_{TP} DP_i(ABS) \ldots [_{vP} \textbf{REC}_i(ERG) \ldots [_{VP} \text{DP}_i(ABS) \ldots$

(22) a. **Theme(ABS)**- **IO**-   **Agent(ERG)**-
           tə-   **ze**-   f- jə-   š'a -ʁ
           1PL.ABS-   **REC.IO**- BEN- 3SG.ERG- bring -PST

      'S/he brought us together (lit. to each other).'   ABS>IO

      b. $[_{TP} DP_i(ABS) \ldots [_{vP} \ldots [_{ApplP} \textbf{REC}_i(IO) \ldots [_{VP} \text{DP}_i(ABS) \ldots$

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Summary: Reciprocal binding patterns provide support for syntactically ergative clause structure: the absolutive DP raises to Spec,TP – a position c-commanding both the ergative agent and any applied objects.

Implications:

- Previous proposals for high absolutive (Bittner and Hale 1996; Coon et al. 2014; Yuan 2018, a.o.) are based on A′-extraction and scope phenomena and are compatible with A′-movement of the absolutive argument.

- Reciprocal binding in West Circassian shows that syntactic ergativity **must be derived via A-movement**, i.e. the absolutive occupies the 'surface subject' position.

4 Locality conditions on reflexive binding

The puzzle: *If West Circassian is syntactically ergative, why do reflexives follow a syntactically accusative pattern?*

+ The morphosyntax of the reflexive marker has been used as evidence for subjecthood of the ergative DP (Caponigro and Polinsky 2011; Lander and Testelets 2017).

Reflexives vs reciprocals: in a transitive verb (ERG-ABS), reflexive and reciprocal prefixes replace ϕ-agreement morphemes of opposite arguments.

(23)

		Theme(ABS)-	Agent(ERG)-			
a.		ŝʷə-	t-	λeʁʷə	-ʁ	**Baseline ERG-ABS**
		2PL.ABS-	1PL.ERG-	see	-PST	'We saw you(pl).'
b.		**zə-**	t-	λeʁʷə	-ʁ	**ABS→REFL**
		REFL.ABS-	1PL.ERG-	see	-PST	'We saw ourselves.'
c.		te-	**zere-**	λeʁʷə	-ʁ	**ERG→REC**
		1PL.ABS-	**REC.ERG-**	see	-PST	'We saw each other.'

The analysis:

- Both reflexives and reciprocals are general anaphors, bound by a **higher nominal** in the **A-domain (TP)**.

- Reflexives are **local subject oriented**, i.e. must be licensed by a specialized Voice$_{REFL}$ per Labelle (2008); Ahn (2015); Bhatia and Poole (2016)
  ⇒ due to the syntactic properties of Voice$_{REFL}$, the set of possible antecedents for reflexives is reduced to the **highest nominal** in the **θ-domain (vP)**.

Implications:

- **Explains the puzzle:** reflexives do not follow syntactically ergative pattern, because high absolutive position is <u>derived</u>.

- As a syntactically ergative language, West Circassian presents novel evidence for Ahn's (2015) locality-driven account of local subject orientation.

- The analysis reduces local subject orientation to **conditions on locality**, without reference to subjecthood.

4.1 Local subject orientation and Voice$_{REFL}$

Local subject oriented reflexives are cross-linguistically common: e.g. *se/si* in French and Italian (Rizzi 1986; Labelle 2008; Sportiche 2014, a.o.); *-koL* in Kannada (Lidz 1996, 2001); see also Ahn (2015)and references therein.

E.g. French *se* (examples adapted from Sportiche 2014:104-107):

1. can only be bound by a deep subject:

   (24) Jean$_i$ **se$_i$** présente Pierre
   Jean **to-himself** introduces Pierre
   'Jean introduces Pierre to himself.'

2. cannot be bound by a non-subject:

   (25) * Jean **se$_i$** présente les enfants$_i$
   Jean **to-themselves** introduces the children
   Intended: 'Jean introduces the children to themselves.'

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3. cannot be bound by a derived subject in a passive or raising construction:

(26)   * Pierre$_i$ **se$_i$**   sera   présenté   (par Jean)
Pierre **to-himself** will-be introduced by   Jean
Intended: 'Pierre will be introduced to himself by Jean.'

(27)   * Jean$_i$ **se$_i$**   semble déprimé
Jean **to-himself** seems depressed
Intended: 'Jean seems to himself to be depressed.'

Building on Ahn (2015); Bhatia and Poole (2016), local subject oriented reflexives must be licensed by Voice$_{REFL}$; cf. Sportiche's (2014) projection HS.

Voice$_{REFL}$ selects for vP and attracts two arguments to its specifier:

- the highest DP in vP   → local subject orientation[5]
- the reflexive pronoun   → syntactically active anaphor

Semantically, Voice$_{REFL}$ imposes co-identity on the two arguments in its specifiers (Appendix B).

(28)
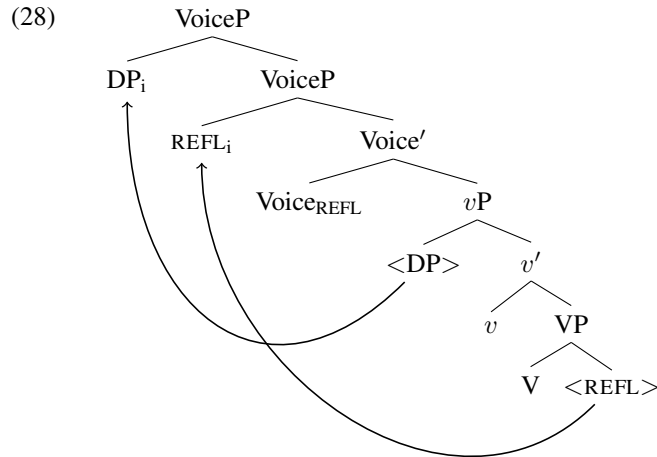
- The high absolute in Spec,TP is not an eligible antecedent because Voice$_{REFL}$ merges immediately above vP while DP(ABS) is in its base position.
- This analysis makes <u>no reference</u> to subjecthood, i.e. <u>any nominal</u> that is highest in the vP can function as an antecedent.

[5]Cf. Ahn (2015), where the highest DP in vP moves to Spec,PredP immediately above VoiceP.

4.2   West Circassian reflexives are local subject oriented

Main claim:
Reflexives in West Circassian are local subject oriented, i.e. may only be bound the highest DP in vP ($\approx$ a non-derived deep subject).

(29)   Reflexive versus reciprocal distribution:

Predicate type	Binding directionality	
	Reflexives	Reciprocals
3-place transitive	ERG>IO	ERG>IO
	*IO>ABS/*ABS>IO	**ABS>IO**
	ERG>ABS	**ABS>ERG**
Unaccusative w/applied object	**IO>ABS/ABS>IO**	**ABS>IO**
Unergative w/applied object	ABS>IO	ABS>IO

<u>**GENERALIZATION #1:**</u> A reflexive cannot be bound by a DP that is not highest in vP.

Reflexive binding possibilities in three-place predicate:

a.   [$_{v\text{P}}$ DP(ERG) ... [$_{\text{ApplP}}$ DP(IO) ... [$_{\text{VP}}$ **REFL**(ABS) ...
✓antecedent   *antecedent

b.   [$_{v\text{P}}$ DP(ERG) ... [$_{\text{ApplP}}$ **REFL**(IO) ... [$_{\text{VP}}$ DP(ABS) ...
✓antecedent   *antecedent

(30)   **Theme-   IO-   Agent-**
z$_{i/*j}$-   a$_j$-   fe-   s$_i$-   thač'ə -ʁ
REFL.ABS- 3PL.IO- BEN- 1SG.ERG- wash -PST

a. 'I washed myself for them.'   **ERG > ABS**
b. * 'I washed them for themselves.'   ***IO > ABS**

(31)   **Theme- IO-   Agent-**
Ø$_j$-   **zə$_{i/*j}$-**   fe-   s$_i$-   thač'ə -ʁe -x
3ABS-   **REFL.IO-** BEN- 1SG.ERG- wash -PST -PL

a. 'I washed them for myself.'   **ERG > IO**
b. * 'I washed them for themselves.'   ***ABS > IO**

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Cf. reciprocals <u>can</u> be bound by an ABS theme in three-place predicate:

[$_{TP}$ DP(ABS) ... [$_{vP}$ DP(ERG) ... [$_{ApplP}$ **REC**(IO) ... [$_{VP}$ <DP(ABS)> ...
   ✓antecedent   ✓antecedent

(32) a. **Theme-** **IO-**   **Agent-**
        tə-   **ze-**   f-   jə-   š'a -ʁ
        1PL.ABS- **REC.IO**- BEN- 3SG.ERG- bring -PST

    b. * **ze-**   t-   f-   jə-   š'a -ʁ
        REC.ABS- 1PL.IO- BEN- 3SG.ERG- bring -PST

      'S/he brought us together (lit. to each other)' $\boxed{\text{REC: ABS} > \text{IO}}$

GENERALIZATION #2: A reflexive can be bound by a "non-subject" DP, if it is highest in vP.

In an unaccusative verb with a high applicative, the applied object can bind a reflexive in absolutive theme position.

Two structures available for applicative unaccusatives:

  a. [$_{vP}$ [$_{ApplP}$ DP(IO) ... [$_{VP}$ **REFL**(ABS) ...   **<u>IO > ABS</u>**
        ✓antecedent

  b. [$_{ApplP}$ DP(ABS) [$_{ApplP}$ **REFL**(IO) ... [$_{VP}$ ...   **<u>ABS > IO</u>**
        ✓antecedent

Unaccusative verbs do not productively combine with high applicatives – only possible for a small set of so-called 'inverse' predicates.

(33) A transparent example: *jə-* 'LOC' + *ʔe* 'be' = *jə-ʔe* 'have'

    a. **zə-**   s-   jə-   ʔe -ž' zepət
        REFL.ABS- 1SG.IO- LOC- be -RE always

    b. sə-   **z-**   jə-   ʔe -ž' zepət
        1SG.ABS- **REFL.IO**- LOC- be -RE always

      'I always have myself' $\boxed{\text{ABS>IO|IO>ABS}}$

(34) A lexicalized example: *š'ə-* 'LOC' + *ʁʷəpše* '??' = *š'ə-ʁʷəpše* 'forget'

    a. **zə-**   s-   š'ə- ʁʷəpše -ž'ə -ʁ
        REFL.ABS- 1SG.IO- LOC- forget -RE -PST

    b. sə-   **z-**   š'ə- ʁʷəpše -ž'ə -ʁ
        1SG.ABS- **REFL.IO**- LOC- forget -RE -PST

      'I forgot about myself (e.g. when serving food).' $\boxed{\text{ABS>IO|IO>ABS}}$

Why two possible structures?

Based on McGinnis (2000, 2001):

- The theme may undergo movement to Spec,ApplP.

- ⇒ The theme and applied object are equidistant for further movement operations.

(35) a. Applied argument moves to Spec,VoiceP $\boxed{\textbf{IO>ABS}}$:

    b. Absolutive theme moves to Spec,VoiceP $\boxed{\textbf{ABS>IO}}$:

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Cf. reciprocals allow only ABS > IO:[a]

a. [$_{TP}$ DP(ABS) ... [$_{vP}$ [$_{ApplP}$ **REC**(IO) ... [$_{VP}$ <DP(ABS)> ...   **ABS > IO**
    ✓antecedent

b. [$_{TP}$ **REC**(ABS) ... [$_{vP}$ [$_{ApplP}$ DP(IO) ... [$_{VP}$ <**REC**(ABS)> ...   ***IO > ABS**
    *antecedent

[a]Contra Arkadiev et al. (2009:64); Letuchiy (2010:342); a possible source of confusion may be in homophony of reflexive and reciprocal markers in prevocalic environments.

Cf. reciprocals show same binding pattern:

a. [$_{TP}$ DP(ABS) ... [$_{vP}$ <DP(ABS)> ... [$_{ApplP}$ **REC**(IO) ...   **REC: ABS > IO**
    ✓antecedent

b. [$_{TP}$ **REC**(ABS) ... [$_{vP}$ <**REC**(ABS)> ... [$_{ApplP}$ DP(IO) ...   **REC: *IO > ABS**
    *antecedent

---

(36) a. tə-   **ze-**   š'ə-   ʁʷəpše -ž'ə -ʁ
          1PL.ABS- **REC.IO-** LOC-   forget -RE -PST

      b. * **ze-**   t-   š'ə-   ʁʷəpše -ž'ə -ʁ
          REC.ABS- 1PL.IO-   LOC-   forget -RE -PST

      'You(pl) forgot about each other.' | ABS>IO|*IO>ABS |

GENERALIZATION #3: Reciprocal and reflexive binding patterns match when the antecedent:

1. c-commands the bound argument at the level of TP

2. is also the highest DP in vP

Case 1: Unergative verbs with applied object: ABS>IO for <u>both</u> reflexives and reciprocals:

a. [$_{vP}$ DP(ABS) ... [$_{ApplP}$ **REFL**(IO) ...   **REFL: ABS > IO**
    ✓antecedent

b. [$_{vP}$ **REFL**(ABS) ... [$_{ApplP}$ DP(IO) ...   **REFL: *IO > ABS**
    *antecedent

---

(37) a. **ABS(S)-** **IO-**
          wə-   **zə-**   f-   je-   ʒe   -ž'ə -ʁ
          2SG.ABS- **REFL.IO-** BEN- DAT- read -RE -PST

      b. * **zə-**   p-   f-   je-   ʒe   -ž'ə -ʁ
          REFL.ABS- 2SG.IO- BEN- DAT- read -RE -PST

      'You study for yourself.' | REFL:ABS>IO|*IO>ABS |

---

(38) a. **ABS(S)-**   **IO-**
          da   ŝʷə-   č'ə-   **ze-**   tje-   kʷəwe -ž'ə -re -r
          what 2PL.ABS- RSN- **REC.IO-** LOC-   yell   -RE -PRS -ABS

      b. * da   **ze-**   č'ə-   ŝʷə-   tje-   kʷəwe -ž'ə -re -r
          what **REC.ABS-** RSN-   2PL.IO- LOC-   yell   -RE -PRS -ABS

      'Why are you yelling at each other?' | REC:ABS>IO|*IO>ABS |

Case 2: Transitive verbs with applied object: ERG>IO for <u>both</u> reflexives and reciprocals:

a. [$_{vP}$ DP(ERG) ... [$_{ApplP}$ **REFL**(IO) ... [$_{VP}$ DP(ABS) ...   **REFL: ABS > IO**
    ✓antecedent

b. [$_{vP}$ **REFL**(ERG) ... [$_{ApplP}$ DP(IO) ... [$_{VP}$ DP(ABS) ...   **REFL: *IO > ABS**
    *antecedent

---

(39) a.   **IO-**   **ERG-**
          we   wəne-r   Ø-   **zə-**   fe-   p-   ŝə -ž'ə -ʁ
          you   house-ABS   3ABS- **REFL.IO-** BEN- 1SG.ERG- do -RE -PST

      b. * we   wəne-r   Ø-   p-   fe-   **zə-**   ŝə -ž'ə -ʁ
          you   house-ABS   3ABS- 2SG.IO- BEN- **REFL.ERG-** do -RE -PST

      'You built a house for yourself.' | REFL:ERG>IO|*IO>ERG |

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Cf. reciprocals show same binding pattern:

a. $[_{TP}$ DP(ABS) ... $[_{vP}$ DP(ERG) ... $[_{ApplP}$ **REC**(IO) ... **REC: ABS > IO**
   ✓antecedent

b. $[_{TP}$ DP(ABS) ... $[_{vP}$ **REC**(ERG) ... $[_{ApplP}$ DP(IO) ... **REC: *IO > ABS**
   *antecedent

(40) a.

		IO-	**ERG-**			
te	wəne-xe-r	Ø- **ze-**	fe-	t-	ṣ̂ə -ž'ə -ʁ
we	house-PL-ABS	3ABS- **REC.IO-**	BEN-	1PL.ERG-	do -RE -PST

b. * te wəne-xe-r Ø- t- fe- **ze-** ṣ̂ə -ž'ə -ʁ
   we house-PL-ABS 3ABS- 1PL.IO- BEN- **REC.ERG-** do -RE -PST

'We built houses for each other.' **REC:ERG>IO|*IO>ERG**

Summary of distribution:

- Reflexive *zə-* is local subject oriented – can only be bound by highest DP in vP.

- Reciprocal *ze(re)-* is not local subject oriented – can be bound by any c-commanding DP in TP.

Implications:

- High position of absolutive DP is derived + reflexives can only be bound by a non-derived deep subject
  $\Rightarrow$ reflexives <u>cannot</u> be used as evidence against structural syntactic ergativity.

- In contrast, the distribution of reciprocals provides support for a syntactically ergative clause structure – the absolutive DP undergoes A-movement to the surface subject position.

- The apparently contradictory behavior of reflexives and reciprocals is due to differences in licensing conditions:
  - Reciprocals must be bound by a **higher** nominal in the **A-domain (TP)**.
  - Reflexives are licensed by Voice$_{REFL}$, which limits possible antecedents to the **highest** nominal in the **θ-domain (vP)**.

- In previous literature on local subject oriented anaphors, the antecedent must be <u>both</u> the deep and surface subject (see e.g. discussion in Ahn 2015:200-217).

- West Circassian shows that the antecedent <u>need not</u> be the surface subject, confirming an implicit prediction of Ahn's (2015) and Bhatia and Poole's (2016) locality-based analysis.

A question not addressed here:

After reflexive binding is established between e.g. ERG and ABS, the bound reflexive pronoun must undergo A-movement to Spec,TP c-commanding the ergative.

Why doesn't the movement of a reflexive – DP(ABS) – over its antecedent – DP(ERG) – trigger a Condition B/C violation?

(41) **Reflexive: ERG>ABS**
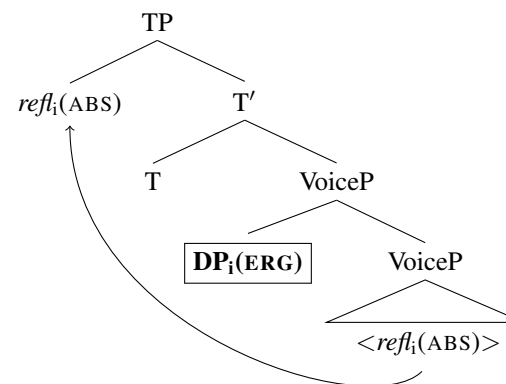
4.3 Voice$_{REFL}$ in West Circassian

The analysis: Reflexive binding is mediated via Voice$_{REFL}$, per Ahn (2015); Bhatia and Poole (2016).

Desiderata:

1. Local subject orientation.

2. The presence of a syntactically active bound pronoun; cf. analysis of French *se* as the external argument (Pesetsky 1995) or Voice^0 (Reinhart and Siloni 2005; Labelle 2008).

3. Productivity: not limited to particular class of verbs; cf. Russian *-sja* only with naturally reflexive verbs (Schäfer 2008) or French *se* only with intrinsically transitive verbs (Sportiche 2014).

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Implementation:

- Movement is triggered by structure-building probe features per Heck and Müller (2007); Müller (2010): •F•

- Per Georgi and Müller (2010); Müller (2010); Martinović (2015), probe features are hierarchically ordered, e.g.: [•F • ≫ •G •]

- In a hierarchical feature ordering, only the leftmost/highest unchecked feature is visible for syntactic operations.

- Minimal Link Condition / Attract Closest (Chomsky 1995): A probe with feature •F• must agree with the highest goal in its c-command domain with feature F / +F+.

- Two types of goal features:

  (i) Standard goal: F

  (ii) Licensee: +F+

- All probe (•F•) and licensee (+F+) features must be checked via Merge/Move.

The two components of reflexive syntax:

(42) | Voice$_{REFL}$: | [•D•≫•REFL•]

(43) | Syntactically active reflexive pronoun: | [D; +REFL+]

Deriving local subject orientation: only the highest DP in vP can be an antecedent per standard locality constraints:

(44)
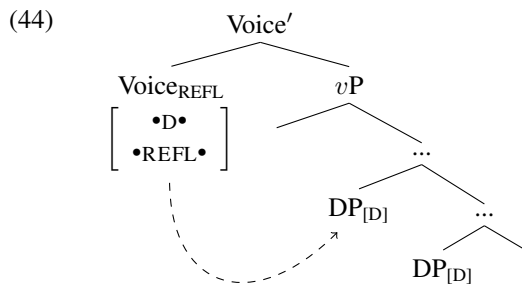
⇒ subject orientation is reduced to locality conditions on movement.

Ensuring c-command between antecedent and reflexive before movement:

The antecedent DP must c-command the anaphor to satisfy ordered feature checking.

Otherwise, [•REFL•] on Voice$_{REFL}$ remains unchecked.

(45)   *
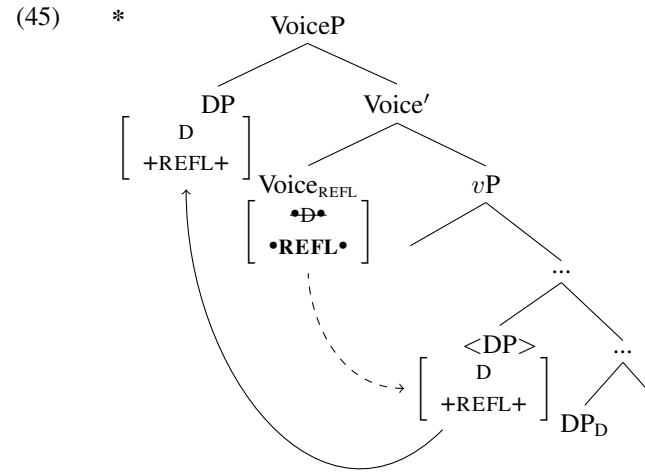
Ensuring co-occurrence of Voice$_{REFL}$ and reflexive pronoun, i.e. that the reflexive is local subject oriented: both [•REFL•] on Voice$_{REFL}$ and [+REFL+] on the reflexive pronoun <u>must</u> be checked.

⇒ a reflexive pronoun without Voice$_{REFL}$ is ungrammatical:

(46)   *

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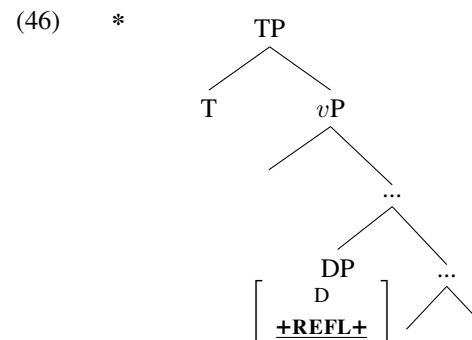
Sample derivations:

(47) **Three-place predicate (ERG-IO-ABS):** ERG > ABS; *IO > ABS
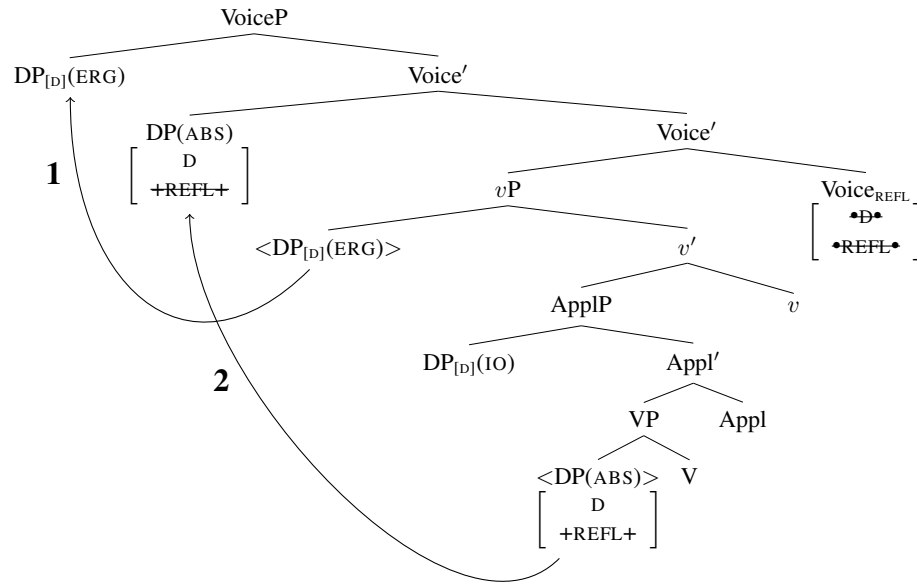
(48) **Unaccusative with applied object:** IO > ABS
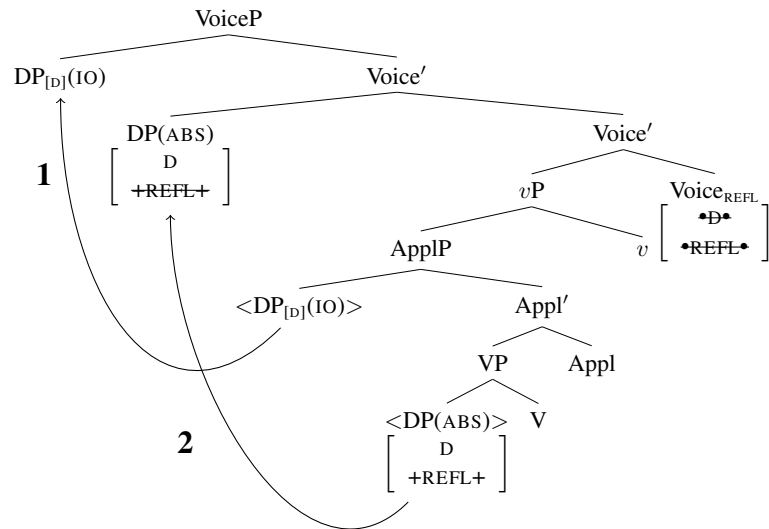
Building on McGinnis (2000, 2001): absolutive theme may raise to Spec,ApplP.

Appl^0: [•D• (≫ •D•)] – selects for a DP and (optionally) attracts another DP to its specifier.

(49) **Unaccusative with applied object:** ABS > IO
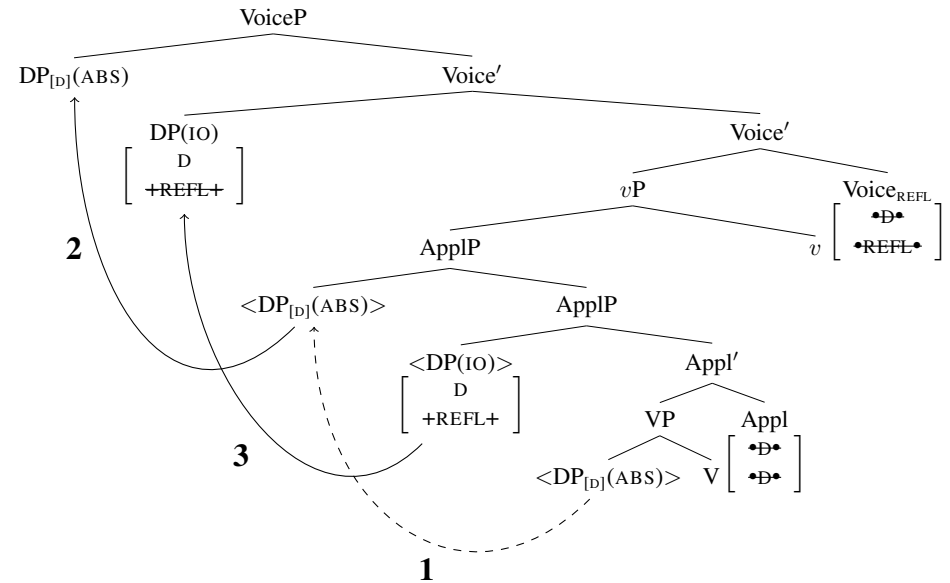
**Note that for a three-place predicate (ERG-IO-ABS), even if the theme moves to Spec,ApplP, it still cannot bind a reflexive due to intervening DP(ERG):

(50) DP(ABS) in Spec,ApplP cannot raise to Spec,VoiceP:

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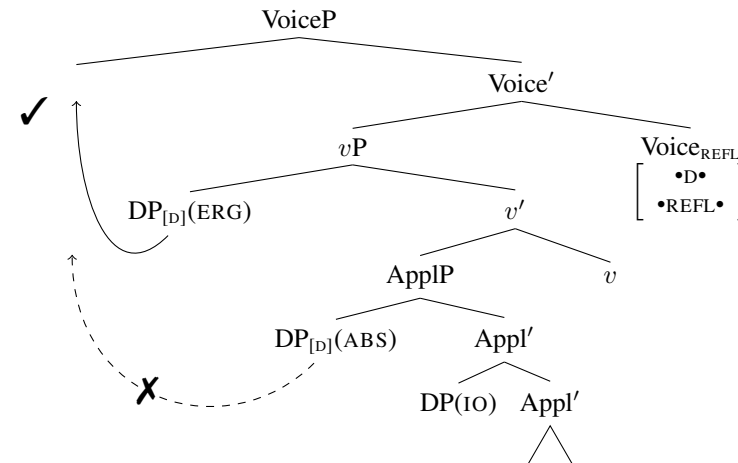
(51) **Unergative w/applied object: ABS(S) > IO:**
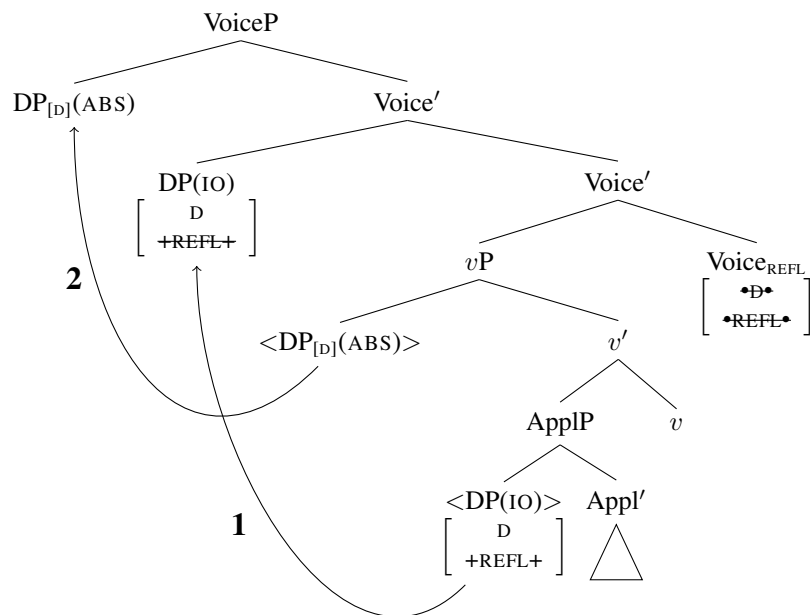
Summary:

- Reflexives differ in distribution from reciprocals in two cases:

  1. Reciprocals may be bound by a higher non-subject DP, reflexives may not.

  2. The highest DP in vP ($\approx$ deep subject) does not coincide with the surface subject in Spec,TP – in this case, reflexives are bound by the deep subject, while reciprocals are bound by the surface subject.

- The distribution of reflexives is conditioned by Voice$_{REFL}$, which merges immediately above vP, reducing possible antecedents to the **highest DP in vP**.

- Locality conditions on Voice$_{REFL}$ predict that reflexives <u>must</u> be bound by the highest nominal in vP, but that nominal <u>need not</u> be a surface subject.

4.4 Further prediction: antecedents in synthetic causatives

> **Prediction**: In a synthetic causative construction, which involves recursive embedding of vP's, both the causer and causee can be an antecedent, depending on which vP is selected by Voice$_{REFL}$.
>
> [$_{vP1}$ DP-Causer(ERG) ... [$_{vP2}$ DP-Causee(IO) ... [$_{VP}$ **REFL**(ABS) ...
> ✓antecedent ✓antecedent

(52) a.

ŝ^{w}ə	**ze-**	s-	e-	λeʁ^{w}ə -ž'ə
good	**REFL.ABS-**	1SG.ERG-	PRS-	see -RE

'I love (lit. see good in) myself.' **Baseline: ERG > ABS** [6]

b.

ŝ^{w}ə	**zə-**	s-	e-	b-	ʁe-	λeʁ^{w}ə -ʁ
good	**REFL.ABS-**	1SG.IO-	DAT-	2SG.ERG-	CAUS-	see -PST

'You$_i$ made me$_j$ love myself$_j$/yourself$_i$.' **CAUS: ERG > ABS | IO > ABS**

(53) **Causative: ERG(CAUSER) > ABS – Voice$_{REFL}$ selects for vP1**

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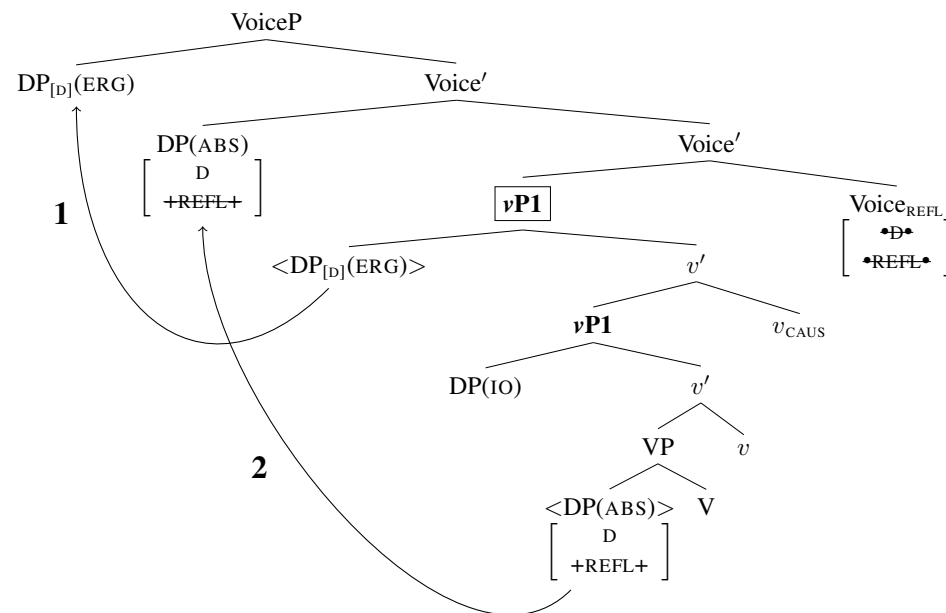
[6]Reflexive marker surfaces as *ze-* due to regular phonological rule; see Appendix C for details.

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(54) **Causative: IO(CAUSEE) > ABS – Voice$_{\text{REFL}}$ selects for vP2**
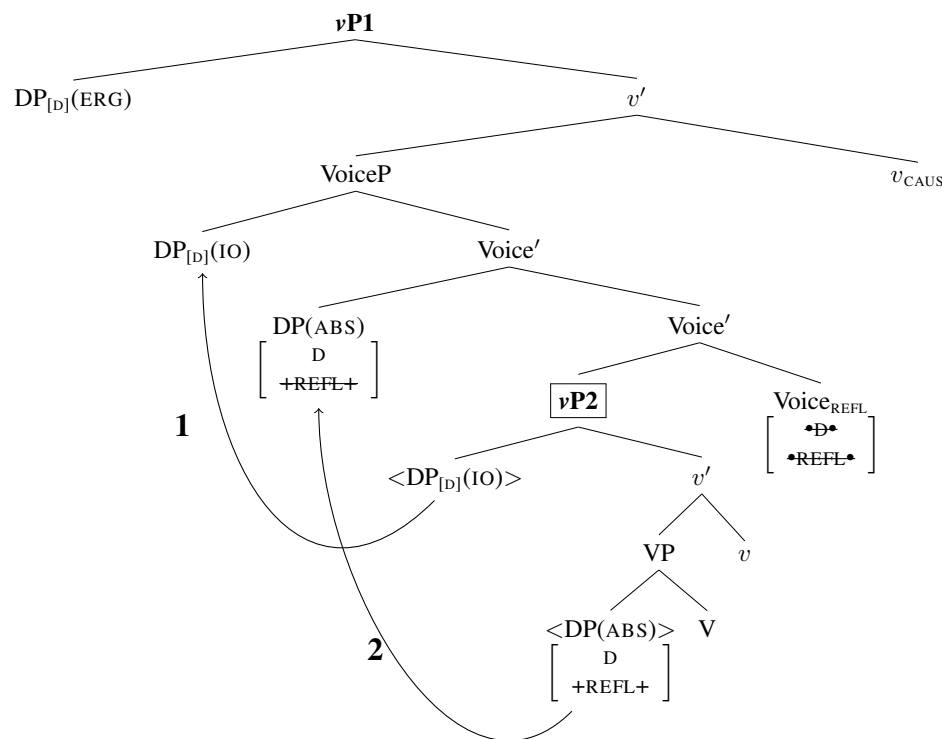
Summary:

- Reflexives are licensed by Voice$_{\text{REFL}}$, which selects for vP and attracts the highest DP within vP and the reflexive to its specifier.

- This analysis reduces local subject orientation to locality constraints on movement.

- As a language where the 'surface subject' in Spec,TP need not match the 'deep subject' in vP, West Circassian presents novel evidence that subjecthood does not play a role in anaphor binding.

5   Conclusion

Returning to the broad question: *What are subjects syntactically?*

- **Subjecthood properties** can be dispersed over multiple positions (Harley 1995; Bobaljik and Jonas 1996; McCloskey 1997).

- In **syntactically accusative languages**, these positions are generally occupied by the same nominal, which can thus be identified as the 'subject'.

- In contrast, in a **syntactically ergative language** these positions are systematically occupied by distinct nominals, rendering **conflicting results for subjecthood tests**.

- If subjecthood properties do not converge on a single nominal, **the notion of 'subjecthood' becomes theoretically vacuous.**

What does it mean to be a subject in a syntactically ergative language?

- Previous proposals for high absolutive (e.g.Bittner and Hale 1996; Aldridge 2008; Coon et al. 2014) are compatible with A′-movement of the absolutive, meaning that the highest nominal in vP may correspond to the highest A-position in the clause.

- The distribution of anaphors in West Circassian provides evidence for the **absolutive DP occupying the highest A-position** in the clause, i.e. the 'surface subject' position.

What is the role of subjecthood in anaphor binding?

- As a syntactically ergative language, West Circassian presents novel evidence that 'local subject orientation' of reflexives is due to **constraints on locality of movement.**

- Subjecthood thus does not play a role in defining conditions on anaphor binding.

Broader implications:

For West Circassian:

The language is **structurally syntactically ergative**, with the absolutive DP undergoing A-movement to a position c-commanding other arguments.

For typology and methodology:

Languages may display **mixed subjecthood properties** due to these properties being dispersed across several positions and the possibility of distinct nominals occupying these positions.

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⇒ An established diagnostic cannot be blindly applied to a language without attention to other aspects of that language.

$\boxed{\text{For theory:}}$

- A-movement of the absolute to Spec,TP has implications for **locality, intervention and features that drive A-movement** – DP(ERG) and DP(IO) must be inactive when T^0 probes.

- In West Circassian, a reflexive pronoun can raise to c-command its antecedent without triggering a Condition B/C violation ⇒ implications for **understanding of binding conditions**.

Acknowledgements

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Appendices

A   Deriving syntactic ergativity via nominal licensing

See Ershova (2019) for details.

A.1   Theoretical assumptions

Merge and Agree triggered by probe features (following Heck and Müller 2007; Müller 2010):

(55)   **Probe features**:

  a.   Structure-building: •F•

  b.   Agree: ∗F∗ and ∗F$_x$:V∗

Following work in Minimalist Grammars (Stabler 1997, 2010; Keenan and Stabler 2003; Lecomte and Retoré 1999, 2001), two types of goal features:

(56)   **Goal features**:

  a.   Non-licensee: F, F:*V*

  b.   Licensee: +F+

Features are hierarchically ordered (Georgi and Müller 2010; Müller 2010; Martinović 2015),:

(57)   a.   [•F• ≫ ∗G∗ ≫ •H•]

  b. $\begin{bmatrix} \bullet F \bullet \\ \ast G \ast \\ \bullet H \bullet \end{bmatrix}$

Definitions for Agree, Merge, and Move (Internal Merge):

(58)   AGREE

For any two syntactic objects α and β, such that:

  a.   the head of α bears the visible Agree feature ∗F∗, and the label of β includes the matching goal feature F or licensee feature +F+, and there is no γ bearing F or +F+ such that it c-commands β and is c-commanded by α,
    α agrees with β, resulting in the checking and deletion of the Agree feature on α, and, if present, the licensee feature +F+ on β; or

  b.   the head of α bears the visible Agree feature ∗F$_x$:V∗, and the label of β includes the matching goal feature F:*Y* such that $x{\subset}Y$, and there is no γ bearing F:*W* such that it c-commands β and is c-commanded by α and $x{\subset}W$,
    α agrees with β, resulting in the checking and valuation of the Agree feature on α as F:Z, where Z = V ∪ Y.

(59)   MERGE

For any two syntactic objects α and β, such that the head of α is the feature set $\mathcal{F}$ which includes the visible structure-building feature •F•, and the label of β is the feature set $\mathcal{G}$ which includes the matching goal feature F or licensee feature +F+:
Merge(α,β) = {α',{α'',β'}},

  a.   where $\alpha' = \alpha$ with all the probe features of α (if any) removed (i.e. probe features don't project),

  b.   and $\alpha'' = \alpha$, except the head of α'' is $\mathcal{G}$ − •F• (i.e. •F• is checked and deleted on the head),

  c.   and $\beta' = \beta$ except the label of β' is $\mathcal{G}$ − +F+ if $\mathcal{G}$ has +F+.

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(60) **MOVE**
Move(α,β) is Merge(α,β), where α c-commands β and there is no γ bearing F or +F+ such that it c-commands β and is c-commanded by α.

Features are checked in their hierarchical order and must be visible to trigger Agree or Merge:

(61) **Feature Visibility Condition (Martinović 2015:67):**
A feature F on a head X is visible if F is the highest feature in the hierarchy.

A.2 Implementation: syntactic ergativity as licensing

- Nominals must be syntactically licensed in the course of the derivation $\Rightarrow$ DPs carry the licensee feature +K+ (analogous to -k or $\bar{k}$ in Minimalist Grammars, Lecomte and Retoré 1999; Keenan and Stabler 2003; Stabler and Keenan 2003).

  (62) All DPs (additional features may be present):
  a. Category: D
  b. Licensee: +K+

- Ergative agents and applied objects are licensed in-situ; cf. inherent case accounts (Woolford 2006; Legate 2008; Pylkkänen 2008).

- Licensed nominals are rendered inactive for further licensing-related operations; cf. McGinnis's (1998) inert case, Legate's (2008) discussion of eligibility for absolutive case assignment to a theme over an ergative external argument, and Kalin and van Urk 2015 for a similar idea regarding ϕ-agreement.

  (63) a. Transitive v^0 (v_{TR}): [∗K∗ $\gg$ •K•]
  Agrees with the theme in VP and merges and licenses the ergative agent.
  b. Appl^0: •K•
  Merges and licenses an applied object.
  c. T^0: •K•
  Licenses a moved argument – the absolutive DP.

  (64) a. Unergative v^0 (v_{UNERG}): •D•
  Merges an external argument, but does not license it.
  b. Unaccusative v^0 (v_{UNACC}): Ø
  Does not select for an external argument.

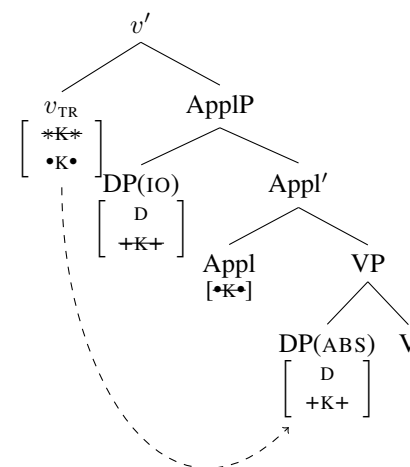**Sample derivation: three-place transitive verb**

(65) te(ERG)   *pro*(IO)   mə txəλə-r(ABS)
we   this book-ABS
Ø-qə-w-e-t-tə-ž'ə-ʁ
3ABS-DIR-2SG.IO-DAT-1PL.ERG-give-RE-PST
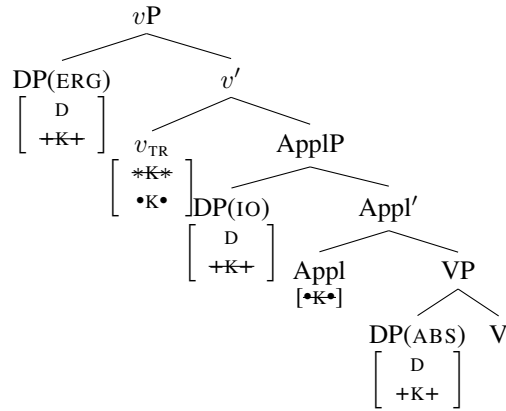'We gave this book to you.'

(66) Three-place predicate (ERG-IO-ABS):

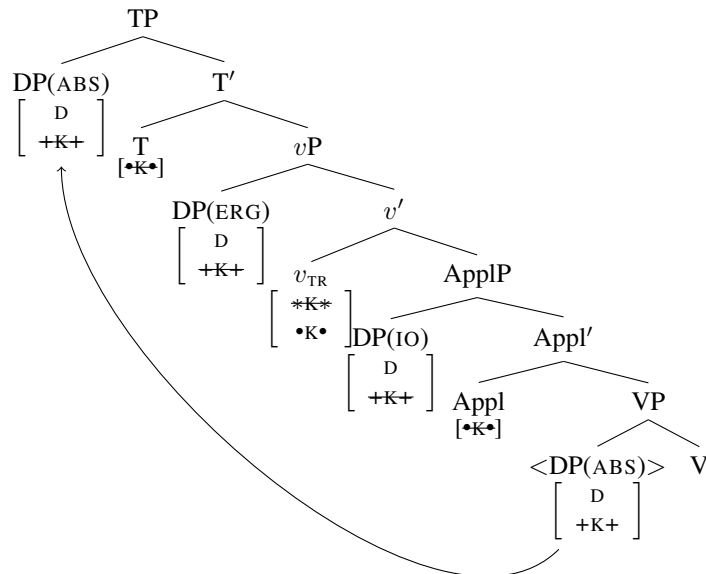a. Appl^0 selects for VP and merges DP(IO) in its specifier:
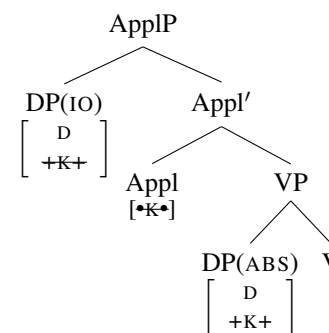
b. v_{TR} selects for ApplP and agrees with DP(ABS):

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c. v_{TR} merges with and licenses DP(ERG):

vP
- DP(ERG) [D, +K+]
- v′
  - v_{TR} [*K*, •K•]
  - ApplP
    - DP(IO) [D, +K+]
    - Appl′
      - Appl [•K•]
      - VP
        - DP(ABS) [D, +K+]
        - V

d. T⁰ selects for vP; DP(ABS) moves to be licensed in its specifier:

TP
- DP(ABS) [D, +K+]
- T′
  - T [•K•]
  - vP
    - DP(ERG) [D, +K+]
    - v′
      - v_{TR} [*K*, •K•]
      - ApplP
        - DP(IO) [D, +K+]
        - Appl′
          - Appl [•K•]
          - VP
            - ⟨DP(ABS)⟩ [D, +K+]
            - V

B   Semantics of Voice_REFL

(67) $[\![\text{Voice}_{\text{REFL}}]\!] = \lambda P_{\langle st \rangle} \lambda x_e \lambda y_e \lambda e_s.\text{IDENT}(x,y)\&P(e)$ (adapted from Ahn 2015:223)

(68)   Sample derivation: <u>ERG > ABS</u>

VoiceP $\lambda e_s.\text{IDENT}([\![\text{DP(ABS)}]\!], [\![\text{DP(ERG)}]\!])\& [\![v\text{P}]\!](e)$
- DP(ERG)
- VoiceP $\lambda y_e \lambda e_s.\text{IDENT}([\![\text{DP(ABS)}]\!], y)\& [\![v\text{P}]\!](e)$
  - DP(ABS)
  - Voice′ $\lambda x_e \lambda y_e \lambda e_s.\text{IDENT}(x,y)\& [\![v\text{P}]\!](e)$
    - Voice_REFL $\lambda P_{\langle st \rangle} \lambda x_e \lambda y_e \lambda e_s.\text{IDENT}(x,y) \& P(e)$
    - vP $\lambda e_s.\text{AGENT}([\![\text{DP(ERG)}]\!], e) \& \text{THEME}([\![\text{DP(ABS)}]\!], e) \& [\![\text{V}(e)]\!]$
      - ⟨DP(ERG)⟩
      - v′
        - v
        - VP
          - V
          - ⟨DP(ABS)⟩
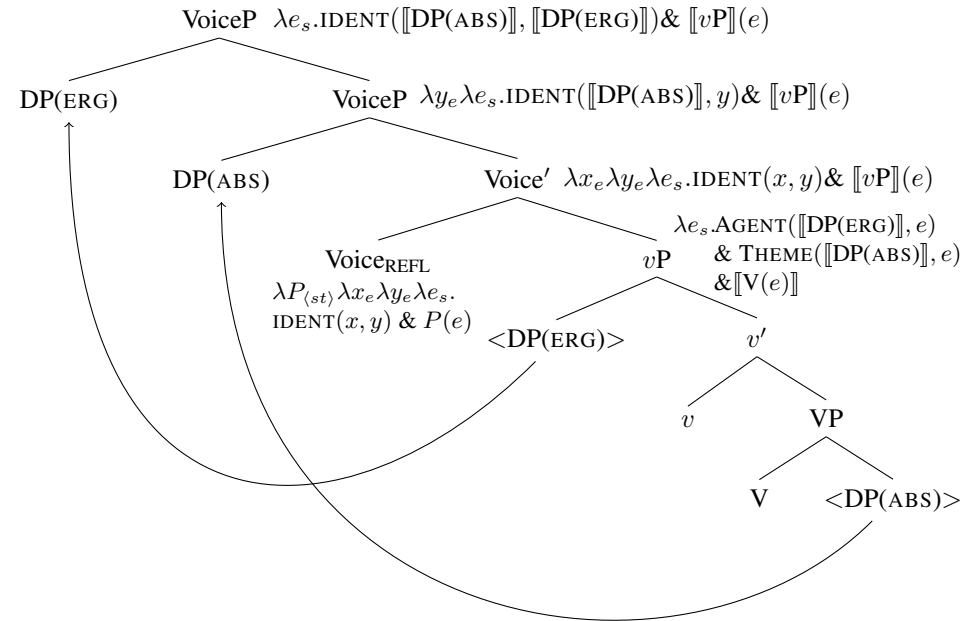
- The semantics of the reflexive pronoun is the same as a regular pronoun: "an index (...) and a contextually-specified assignment function" (Ahn 2015:227)

- IDENT constrains the assignment function to force co-identity between the reflexive and and its antecedent.

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C Allomorphy and morphophonology of reflexive and reciprocal markers

The vowel /ə/ in the reflexive marker *zə-* undergoes the following regular morphophonological alternations:

1. The vowel /ə/ is dropped prevocalically and immediately preceding a glide (Arkadiev et al. 2009:27-28):

   (69) /ə/ → Ø / __ [-consonantal]

   (70) a. sə-   **z-**   e-   ǯe -ž'ə   {sə+**zə**+je+e+ǯe+ž'ə}
            1SG.ABS- **REFL.IO**- DAT- call -RE
            'I call myself [Zara]'

        b. **z-**   a-   fe- s-   thač'ə -ʁ   {**zə**+a+fe+s+thač'ə+ʁe}
            REFL.ABS- 3PL.IO- BEN- 1SG.ERG- wash -PST
            'I washed myself for them.'

        c. **z-**   jə-   wəč'ə -ž'ə -ʁ   {**zə**+jə+wəč'ə+ž'ə+ʁe}
            REFL.ABS- 3SG.ERG- kill -RE -PST
            'S/he killed himself/herself.'

2. The vowel /ə/ is optionally dropped if the reflexive morpheme is preceded by an open syllable (e.g. an absolutive agreement prefix) and followed by an applicative prefix.[7] For example, the reflexive morpheme surfaces as *z-* in the following example:

   (71) sə-   **z-**   fe- gʷəbžə -ž'ə   {sə+**zə**+fe+gʷəbžə+ž'ə}
        1SG.ABS- **REFL.IO**- BEN- angry   -RE
        'I am angry at myself.'

   (72) wə-   **zə-**   fe- gʷəbžə -ž' -a   {wə+**zə**+fe+gʷəbžə+ž'ə}
        2SG.ABS- **REFL.ABS**- BEN- angry   -RE -Q
        'Are you angry at yourself?'

3. The vowel /ə/ undergoes the following assimilation rule which is triggered by the dynamic prefix *e-*: /ə/ surfaces as /e/ in present tense forms of dynamic verbs, if immediately followed by ergative cross-reference morphology and the dynamic prefix *e-*:

   (73) ŝʷə   **ze-**   s-   e-   λeʁʷə -ž'ə   {**zə**+s+e+λeʁʷə+ž'ə}
        good **REFL.ABS**- 1SG.ERG- PRS- see   -RE
        'I love myself.'

The reciprocal marker has two allomorphs:

1. *ze-* (74a) for applied object;

2. *zere-* for ergative (74b) or causee of a transitive verb (74c) (Rogava and Keraševa 1966:271-276; Arkadiev et al. 2009:63-67)

The final vowel /e/ in both allomorphs is dropped if immediately followed by a vowel or glide (74c).

   (74) a. Ø-   **ze-**   fe- χʷə -ʁe -x
            3ABS- **REC.IO**- BEN- become -PST -PL
            'they became [strong] for each other'

        b. Ø-   tje- **zere-**   ʁe- fe -ž'ə -ʁe -x
            3ABS- LOC- **REC.ERG**- CAUS- fall -RE -PST -PL
            'they made each other fall over'

        c. tə-   **zer-**   a-   ʁe- ŝa -ʁ   {tə+**zere**+a+ʁe+ŝe+ʁe}
            1PL.ABS- **REC.IO**- 3PL.ERG- CAUS- know -PST
            'they introduced us to each other (lit. made us know each other)'

---

[7]This rule is mentioned in Rogava and Keraševa (1966:51) for a number of particular prefix combinations (e.g. *zə+de* 'WH.IO+LOC-'), but appears to be more general than described there.