Direction towards Person:
Canonical inverse and reverse PCC in Adyghe

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Abstract

Shapsug Adyghe (Northwest Caucasian) displays a morpheme that signals direction towards deictic center, which additionally indicates inverse contexts as well as violations of an ultrastrong reverse Person-Case Constraint (PCC). In the absence of a canonical PCC pattern, Adyghe challenges the STANDARD-INVERSE generalization, recently put forth by Stegovec (2017, 2020). We show how the phenomenon is problematic for a variety of approaches to PCC effects that rely on salience hierarchies or the notion of a syntactic intervener, concluding that multivaluation accounts along the lines of Béjar and Rezac (2009), Deal (2020) predict the patterns without further ado. In analyzing the directional marker as an abstract person licenser, we provide new evidence for the *Person Licensing Condition* as well as the syntactic projection of implicit arguments (Landau 2010, Legate 2014). The data come from elicitation with 3 native speakers of Shapsug Adyghe and an online survey.

1   Introduction

The Person-Case Constraint (PCC) is a restriction on the person features of certain object combinations, attested within a large number of widely divergent languages (Perlmutter 1968, Bonet 1991, Haspelmath 2004). An example from Greek for the strong PCC is given in (1) where the direct object must be 3rd person in the presence of an indirect object, if each object is realized by a weak element, in this case a clitic.[1]

(1)   *Strong PCC in Greek*   (Anagnostopoulou 2003:252)

    a. Tha mu   to   stilune.
          FUT 1SG.GEN 3SG.ACC send.3PL
          'They will send it to me.'

    b. Tha su   ton   stilune.
          FUT 2SG.GEN 3SG.ACC send.3PL
          'They will send him to you.'

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[1] 1 = first person; 2 = second person; 3 = third person; ABS = absolutive; ACC = accusative; AG = agent; AOR = aorist; APPL = applicative; AUTH = author; BEN = benefactive / beneficiary; CAUS = causative; CIS = cislocative; COM = comitative; DAT = dative; DEM = demonstrative; DO = direct object; DIR = directional; DYN = dynamic; ERG = ergative; EXP = experiencer; FUT = future; GEN = genitive; IMP = imperative; INV = inverse; IO = indirect object; OBL = oblique; OBV = obviative; SG = singular; SU = subject; PART = participant; PAT = patient; PL = plural; POSS = possessive; PROX = proximate; PST = past; RE = refactive; REC = recipient; REFL = reflexive; STIM = stimulus.

c. *Tha tu   me   stilune.
    FUT 2SG.GEN 1SG.ACC send.3PL
    'They will send me to him.'
d. *Tha mu   se   stilune.
    FUT 1SG.GEN 2SG.ACC send.3PL
    'They will send you to him.'

Person hierarchy effects have also been documented between subjects and objects within direct-inverse alignment systems. An additional exponent emerges in configurations where the object's person feature outranks the subject's person feature, shown in (2) as an example from Japhug Rgyalrong.

(2) *Inverse system in Japhug Rgyalrong*   (Jacques 2010: 127)
    a. Pɯ-mtó-t-a.
        AOR-see-PST-1SG
        'I saw him/her/it.'
    b. Pɯ́-wɤ-mto-a.
        AOR-INV-see-1SG
        'He/She/It saw me.'

The focus of this paper are PCC and inverse patterns from the Circassian language Adyghe (Northwest Caucasian), a highly agglutinating language spoken by ca. 500,000 speakers in Russia and Turkey (Eberhard et al. 2020). The data in this paper come from fieldwork with 3 native speakers of Shapsug Adyghe and an online survey with 37-43 native speakers with a focus on dialects spoken in Turkey. In Adyghe, a cislocative marker appears with applicative intransitive argument structures, if the object outranks the subject on the person scale. In such cases, the cislocative acts as a canonical inverse marker, as is documented for many American languages, see Jacques and Antonov (2014) and Bliss et al. (2020) for recent overviews. Within ditransitive structures, however, the cislocative appears if the indirect object outranks the direct object on the person scale. This pattern is unusual in two respects: First, prominent argument combinations seem to require a repair in ditransitives, in contrast to the common assumption that these scenarios are morphologically less marked than their non-prominent counterparts. Second, the subject argument of ditransitives seems to be invisible wrt. to the emergence of the cislocative. In this paper, we explore the compatibility of existing PCC approaches with the patterns found in Adyghe. We show that functional (Aissen 1999, Haspelmath 2004, 2020) and case-based approaches (Béjar and Rezac 2003, Anagnostopoulou 2003, 2005, Adger and Harbour 2007) fail to predict the reverse PCC patterns, while other accounts need additional assumptions to derive the distribution of the repair (Nevins 2007, 2011). Moreover, we show that the invisibility of the subject in ditransitives arises from the fact that the argument is indexed by ϕ-agreement rather than clitic doubling. We present the data set in section 2, discuss accounts for which the Adyghe patterns are problematic in section 3, provide evidence for ϕ-Agree vs. clitic doubling in section 4, provide an analysis for the relevant paradigms in section 5, and extend the empirical picture in section 6, before concluding in section 7.

2 The distribution of the directional marker

Adyghe is a polysynthetic language with an ergative case alignment system (Arkadiev and Letuchiy 2011, Letuchiy 2012, Lander and Testelets 2017), shown in (3). Both the theme of the transitive verb in (3-b) as well as the agent of the intransitive verb in (3-a) are assigned absolutive case, marked as *-r*, while the agent of the transitive predicate in (3-b) is assigned ergative case, marked as *-m*, and syncretic with the oblique case marker for applied objects. We will gloss ergative and oblique case marking as OBL throughout the paper.

(3)   *Ergative-absolutive case alignment*   (Letuchiy 2012: 328)

     a.   Pšaše-r   ∅-ma-k̇ʷe.
         girl-ABS 3SG.ABS-DYN-go
         'The girl goes.'

     b.   Č'ale-m pšaše-r   ∅-ə-λeʁʷə-ʁ.
         boy-OBL girl-ABS 3SG.ABS-3SG.ERG-see-PST
         'The boy saw the girl.'

While suffixes in Adyghe encode tense, mood and aspect, prefixes express argument-related information such as ϕ-features, applicative and causative morphology as well as the cislocative marker which originates from a directionality marker that encodes orientation towards the deictic center (Smeets 1984), as shown in (4-b).[2]

(4)   *Cislocative as a directional marker*   (Arkadiev 2020: 88)

     a.   če!
         run.IMP
         'Run (away)!'

     b.   qa-če!
         CIS-run.IMP
         'Run here!'

The cislocative marker appears between two argument-referencing prefixes in certain argument combinations. A full paradigm of an intransitive verb with an indirect object is presented in (5).[3] In such cases, the affix that references the indirect object appears closer to the root than the affix that references the subject, as seen in (5-a) and (5-b). The combinations in (5-b), (5-d), and (5-f) illustrate scenarios where the applied object outranks the subject on the person scale *1 > 2 > 3* (Silverstein 1976), triggering the occurrence of a cislocative marker q^wə- between the verbal prefixes cross-referencing subject and applied object. Both (5-d) and (5-f) show that exponents do not have to be overt for the cislocative marker to occur, as 3SG subjects are not cross-referenced on the verb, while q^wə- still

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[2]Smeets (1984: 436) originally notes the presence of directional markers only for the Shapsug dialect of Adyghe. It has since then also been reported for other dialects. The example in (4) is based on elicitation with speakers from the Temirgoy dialect (Arkadiev 2020: 85).

[3]The verb *wo* seems to indicate an abstract motion directed towards a goal, resulting in a translation as "beat". In contrast to many other languages, applicative intransitives are very productive in Adyghe, see Caponigro and Polinsky (2011: 80), Potsdam and Polinsky (2012: 77) and Arkadiev (2020: 87) for discussion. Moreover, Arkadiev notes that the class of applicative intransitives is heterogeneous and does not seem to follow semantic classifications. Although the applicative marker is morphologically covert in (5), applicative intransitives can be distinguished from regular ERG-ABS transitives by the order of prefixes on the verb as well as overt case morphology on the arguments. We will focus on the more commonly known transitive ERG-ABS predicates separately in section 6.3.

SU \ IO	1SG	2SG	3SG
1SG	▮	✗, (5-a)	✗, (5-c)
2SG	✓, (5-b)	▮	✗, (5-e)
3SG	✓, (5-d)	✓, (5-f)	✗, (5-g)

Table 1: Distribution of CIS in
applicative intransitives

appears.[4,5]

(5) *Cislocative as an inverse marker in applicative intransitives*

    a. se wo sə-wə-wo.
        I   you 1SG-2SG-beat
        'I am beating you.'   AG: 1SG, GOAL: 2SG, ✗ CIS

    b. wo se wə-qʷə-sə-wo.
        you I   2SG-CIS-1SG-beat
        'You are beating me.'   AG: 2SG, GOAL: 1SG, ✓ CIS

    c. se a-ʃ   sə-wo.
        I   3-OBL 1SG-beat
        'I am beating him.'   AG: 1SG, GOAL: 3SG, ✗ CIS

    d. a-r   se qʷə-sə-wo.
        3-ABS I CIS-1SG-beat
        'He is beating me.'   AG: 3SG, GOAL: 1SG, ✓ CIS

    e. wo a-ʃ   wə-wo.
        you 3-OBL 2SG-beat
        'You are beating him.'   AG: 2SG, GOAL: 3SG, ✗ CIS

    f. a-r   wo qʷə-wə-wo.
        3-ABS you CIS-2SG-beat
        'He is beating you.'   AG: 3SG, GOAL: 2SG, ✓ CIS

    g. Mehmet-ir   tʃale-gore-m jə-wo.
        Mehmet-ABS boy-some-OBL 3SG-beat
        'Mehmet is beating some boy.'   AG: 3SG, GOAL: 3SG, ✗ CIS

Table 1 summarizes the distribution of the cislocative marker with applicative intransitive verbs, showing that the cislocative marker in Adyghe behaves like a canonical inverse marker, in that it appears whenever an argument low in the syntactic hierarchy outranks a higher argument on the person scale, thus repairing a marked combination of arguments.

With a ditransitive verb like *tə* 'give', the cislocative remains strictly between the mark-

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[4]In sentences with two 3rd person arguments, Adyghe differentiates between proximate and obviative arguments leading to the emergence of the cislocative in combinations of a proximate direct object and an obviative subject (Arkadiev 2020). We present direct scenarios in this section and address the proximate/obviative distinction in section 5.4.

[5]Although Adyghe is a *pro*-drop language, we will provide spelled out arguments throughout the paradigms in this section. Note also that 1st and 2nd person pronouns cannot be marked for case overtly. It should be noted that all the fieldwork data reported in this paper are based on IPA, while the Adyghe data cited from other papers are based on a different alphabet that is common in Caucasological studies. See Korotkova and Lander (2010: 317) for a conversion table.

ers cross-referencing the direct object and the indirect object. Concretely, it emerges whenever the indirect object outranks the direct object, as shown in (6-e), (6-c), and (6-a), showcasing an *ultra-strong* (sometimes labeled *strictly descending*) repair pattern. Crucially, the emergence of the cislocative marker in ditransitive paradigms depends only on the interaction of direct object and indirect object, while the subject does not interfere. This is shown in (6-b) where the cislocative marker does not occur, even though both direct object and indirect object outrank the subject. Note also that in contrast to the paradigm in (5), the subject prefix in (6) appears closest to the stem.

(6) *Cislocative as a PCC repair in ditransitives*

    a. Sine-m wo se wə-qʷə-sə-rə-tə.
        Sine-OBL 2SG 1SG 2SG-CIS-1SG-3SG-give
        'Sine gives you to me.'   REC: 1SG, PAT: 2SG, ✓ CIS

    b. Sine-m se wo sə-wə-rə-tə.
        Sine-OBL 1SG 2SG 1SG-2SG-3SG-give
        'Sine gives me to you.'   REC: 2SG, PAT: 1SG, ✗ CIS

    c. wo Ali-jər se qʷə-sə-wə-tə.
        2SG Ali-ABS 1SG CIS-1SG-2SG-give
        'You give Ali to me.'   REC: 1SG, PAT: 3SG, ✓ CIS

    d. wo se Ali-jəm sə-wə-tə.
        2SG 1SG Ali-OBL 1SG-2SG-give
        'You give me to Ali.'   REC: 3SG, PAT: 1SG, ✗ CIS

    e. se Ali-jər wo qʷə-wə-sə-tə.
        1SG Ali-ABS 2SG CIS-2SG-1SG-give
        'I give Ali to you.'   REC: 2SG, PAT: 3SG, ✓ CIS

    f. se wo Ali-jəm wə-sə-tə.
        1SG 2SG Ali-OBL 2SG-1SG-give
        'I give you to Ali.'   REC: 3SG, PAT: 2SG, ✗ CIS

    g. se Mehmet-ir tʃale-gore-m jə-sə-tə.
        1SG Mehmet-ABS boy-some-OBL 3SG-1SG-give
        'I am giving Mehmet to some boy.'   REC: 3SG, PAT: 3SG, ✗ CIS

The inverse-like use of the cislocative marker has already been pointed out for different Circassian dialects by Arkadiev (2020). Arkadiev draws the empirical generalization that the cislocative appears obligatorily with ditransitive verbs, whenever the recipient outranks the agent on the person scale, while it is absent in monotransitive clauses. In addition, he shows that the cislocative marker occurs optionally with a 2nd person recipient and a 1st person agent. However, the example in (6-b) shows that the empirical generalization by Arkadiev (2020) does not hold for the dialect of Shapsug Adyghe: Since both object arguments outrank the agent on the person scale, Arkadiev (2020) wrongly predicts the emergence of the cislocative marker in (6-b). Thus, the distribution of the cislocative, summarized in Table 2, differs from the generalizations by Arkadiev (2020). Whereas the cislocative marker acts as a regular inverse marker in applicative intransitives, ditransitive scenarios require the cislocative when a syntactically higher argument outranks an argument low in the syntactic derivation. This way, the contexts for the cislocative marker contrast sharply with the contexts where regular PCC effects take place (Bonet 1991, Aissen 1999, Béjar and Rezac 2003, Anagnostopoulou 2003, Haspelmath 2004, Nevins 2007). Therefore, the Adyghe cislocative marker can be considered a *reverse PCC marker*, cf. Stegovec (2017, 2020).

IO \ DO	1SG	2SG	3SG
1SG	■	✔, (6-a)	✔, (6-c)
2SG	✗, (6-b)	■	✔, (6-e)
3SG	✗, (6-d)	✗, (6-f)	✗, (6-g)

Table 2: Distribution of CIS in ditransitives

The ditransitive pattern can be replicated for transitives with applied beneficiaries, signaled by an applicative benefactive prefix *fə-*. In (7), the cislocative emerges whenever the beneficiary outranks the direct object on the person scale, see (7-a), (7-c), and (7-e). In parallel to the ditransitive paradigm in (6), the person feature specification of the subject does not interact with the distribution of the cislocative, while its coreferencing prefix on the verb occurs closest to the stem.

(7) *Cislocative as a PCC repair in benefactives*

a. Sine-m   wo se wə-qʷə-s-fə-r-ʃef-əʁ
    Sine-OBL you I 2SG-CIS-1SG-BEN-3SG-buy-PST
    'Sine bought you for me.'   BEN: 1SG, PAT: 2SG, ✔ CIS

b. Sine-m   se wo sə-p-fə-r-ʃef-əʁ
    Sine-OBL I you 1SG-2SG-BEN-3SG-buy-PST
    'Sine bought me for you.'   BEN: 2SG, PAT: 1SG, ✗ CIS

c. Sine-m   Ali-jər se qʷə-s-fə-r-ʃef-əʁ
    Sine-OBL Ali-ABS I CIS-1SG-BEN-3SG-buy-PST
    'Sine bought Ali for me.'   BEN: 1SG, PAT: 3SG, ✔ CIS

d. Sine-m   se Ali-jəm sə-fə-r-ʃef-əʁ
    Sine-OBL I Ali-OBL 1SG-BEN-3SG-buy-PST
    'Sine bought me for Ali.'   BEN: 3SG, PAT: 1SG, ✗ CIS

e. Sine-m   Ali-jər wo qʷə-p-fə-r-ʃef-əʁ
    Sine-OBL Ali-ABS you CIS-2SG-BEN-3SG-buy-PST
    'Sine bought Ali for you.'   BEN: 2SG, PAT: 3SG, ✔ CIS

f. Sine-m   wo Ali-jəm wə-fə-r-ʃef-əʁ
    Sine-OBL you Ali-OBL 2SG-BEN-3SG-buy-PST
    'Sine bought you for Ali.'   BEN: 3SG, PAT: 2SG, ✗ CIS

g. Sine-m   Ali-jər tʃale-gore-m   fə-r-ʃef-əʁ
    Sine-OBL Ali-ABS boy-some-OBL BEN-3SG-buy-PST
    'Sine bought Ali for some boy.'   BEN: 3SG, PAT: 3SG, ✗ CIS

As with ditransitives, the pattern in benefactive constructions reveals a reverse PCC effect since the marker appears, if a syntactically higher argument outranks a lower argument on the person scale, summarized in Table 3.

The data presented in this section demonstrates that the cislocative marker acts as a regular inverse marker in applicative intransitive constructions but as a reverse PCC marker in ditransitive/benefactive constructions. Each scenario reveals an ultra-strong repair pattern.

BEN \ DO	1SG	2SG	3SG
1SG	■	✓, (7-a)	✓, (7-c)
2SG	✗, (7-b)	■	✓, (7-e)
3SG	✗, (7-d)	✗, (7-f)	✗, (7-g)

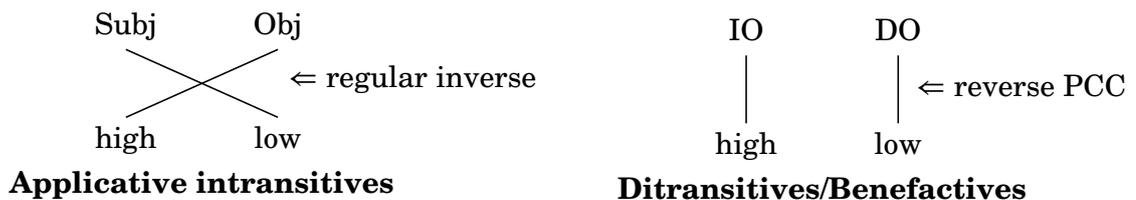Table 3: Distribution of CIS in benefactives

3 The challenge of an ultra-strong reverse PCC

In this section, we discuss two families of approaches as well as two additional accounts in particular, none of which is able to provide a straightforward account for the PCC (and inverse) facts introduced in the previous section. For the sake of the discussion, we will assume that the object referencing prefixes in question qualify as clitics, and the insertion of the directional marker must be analyzed as a person restriction repair. We provide evidence for the former in section 4, while we address the repair question in section 5.4.

3.1 Functional accounts

As the previous section has shown, the distribution of the cislocative marker reveals an ultra-strong reverse PCC effect with ditransitives and benefactives structures in Adyghe. Hence, the cislocative marker emerges in contexts where a prominent indirect object co-occurs with a less prominent direct object. These constellations are traditionally considered to be unmarked scenarios, sometimes labeled *usual* scenarios. Thus, the PCC pattern in Adyghe contrasts strongly with regular cases of PCC and inverse effects where a repair emerges in *unusual* scenarios, compare the canonical repair context for inverse to the reverse context for PCC in (8).

(8) *Contexts for cislocative in Adyghe*

Subj   Obj
⟨ × ⟩   ⇐ regular inverse
high   low
Applicative intransitives

IO   DO
| | ⇐ reverse PCC
high low
Ditransitives/Benefactives

The fact that both regular and reverse PCC patterns are attested across languages as well as within one and the same language (see Stegovec 2020 for Slovenian) indicates that the choice between the two patterns is parametrized somehow, for example via optional object shift (Stegovec 2020, Deal 2020). This questions approaches that presuppose a universal asymmetric preference for one of the two objects. Concretely, reverse PCC patterns are explicitly excluded by approaches implementing PCC phenomena with functional hierarchies (Farkas and Kazazis 1980, Rosen 1990, Aissen 1999, Gerlach 2002, Haspelmath 2004, 2020, Sturgeon et al. 2012, Doliana 2014), as they draw an explicit connection between the universal argument hierarchy *Subject > Indirect Object > Direct Object* and morphological markedness by assuming that *usual* or *expected* person configurations are

morphologically less marked than *unusual* scenarios.[6] Adyghe, however, clearly displays the opposite pattern for PCC scenarios since an additional marker appears within prominent combinations of arguments.[7]

3.2 Asymmetric licensing approaches

Reverse PCC patterns serve as counter-evidence against PCC accounts which presuppose that arguments have to be licensed in some way, but where the indirect object receives a different treatment from the direct object, see Ormazabal and Romero (1998), Ormazabal (2000), Béjar and Rezac (2003), Anagnostopoulou (2003, 2005), Adger and Harbour (2007), Rezac (2008a,b), Richards (2008a,b), Pancheva and Zubizarreta (2018), among others.

Béjar and Rezac (2003) for example assume that the indirect object receives inherent case by a preposition, leaving it inaccessible for Agree by the PCC probe placed above both objects, yet blocking further probing to the lower direct object, along the lines of a defective intervener. Per assumption, person probes first and thus separately from number. After the v^o probe failed to match the IO's person feature, it agrees with the direct object for number, see (9). At this point, the direct object is licensed for number but not for person. The indirect object, however, is licensed for all ϕ-features via case assignment by P.

(9) $\quad [_{v'} \, v^o{}_{[\pi,\#]} \, [\, ... \, [_{PP} \, P \, IO] \, ... \, V \, DO \,]] \quad \Rightarrow \quad [_{v'} \, v^o{}_{[\#]} \, [\, ... \, [_{PP} \, P \, IO] \, ... \, V \, DO \,]]$
$\qquad\qquad\qquad\quad *\pi \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \#$

A strong PCC effect – where the direct object can only be 3rd person, as was shown in (1) for Greek – is derived by an additional *Person Licensing Condition* (PLC) that requires all [PART] features (i.e. 1st/2nd person) to undergo Agree with a functional head. Under the assumption that 3rd person does not represent a ϕ-feature (Benveniste 1971), 3rd person direct objects will be allowed to occur in ditransitive contexts, as they do not fall under the PLC. 1st/2nd person direct objects, however, are either illicit or require repairs. Asymmetric licensing approaches make the wrong predictions for the PCC patterns presented in section 2. Direct objects can come with local person features in the presence of an indirect object without the need for an additional cislocative marker acting as a repair. The scenarios in (6-d) and (6-f) for ditransitives as well as in (7-d) and (7-f) for benefactives, however, can be accounted for by assuming that the direct object moves across the indirect object, as is pointed out by Anagnostopoulou (2003: 295-297) in her extension to Swiss German where PCC effects are neutralized whenever the accusative clitic precedes the dative clitic (Bonet 1991: 188). Crucial counter-evidence against asymmetric licensing approaches comes from scenarios where a repair is required for local person indirect objects, see (6-c) and (6-e) for ditransitives as well as (7-c) and (7-e) for benefactives. Since indirect objects always receive special treament in some way so that they do not have to be licensed by v^o, local person features should not lead to a PLC violation, contrary to fact.

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[6] See also Dixon (1994) for a connection between marked semantic roles and morphological marking.

[7] Jelinek (1993) questions the validity of the person scale by demonstrating that 3rd person agents are as frequent as 1st and 2nd person agents.

3.3 Nevins (2007, 2011)

In contrast to the approaches discussed in the previous section, Nevins (2007, 2011) develops a multivaluation account that does not necessarily rely on an asymmetric treatment of the objects in a ditransitive structure. Nevins argues that person restriction effects arise if a probe undergoes downward *Multiple Agree* with two equidistant goals, whereby a constraint termed *Contiguous Agree* essentially prevents Agree with a more prominent goal across a less prominent goal, thus triggering a repair. For canonical PCC patterns, v is argued to be equidistant to IO and DO via incorporation of Appl into the IO clitic D head, where both IO and DO are crucially introduced in a low applicative structure (Pylkkänen 2008), see (10).

(10)   *PCC structures in Nevins (2007, 2011)*

   a. $[_{v'} \, v^o \, [_{VP} \, V \, [_{ApplP} \, [[_{D} \, Cl_{IO}] \, ...] \, [_{Appl'} \, Appl^o \, [[_{D} \, Cl_{DO}] \, ...] \,]]]]$

   b. $[_{v'} \, v^o \, [_{VP} \, V \, [_{ApplP} \, [[_{D} \, Appl^o \, Cl_{IO}] \, ...] \, [_{Appl'} \, t_{Appl} \, [[_{D} \, Cl_{DO}] \, ...] \,]]]]$

For inverse contexts, Nevins (2011: 955) proposes object shift to be responsible for equidistance of the object and the subject to T. This object shift has to involve *tucking in* (Richards 1997), in order to create the correct hierarchy configurations. We transfer Nevins' idea to applicative intransitives in (11).

(11)   *Inverse structures in Nevins (2007, 2011)*

   $[_{T'} \, T^o \, ... \, [_{vP} \, [[_{D} \, Cl_{SU}] \, ...] \, [_{v'} \, [_{D} \, Appl^o \, Cl_{IO}] \, [_{v'} \, v^o \, ... \, [\, t_{Appl+Cl} \, ...] \, ...]]]]$

Following Pylkkänen (2008: 18), we consider two tests to probe for a low applicative structure. First, a low applicative structure cannot derive a structure that lacks a direct object. The very existence of applicative intransitives discussed in section 2 points against a low applicative structure, recall also footnote 3. We provide another example with a benefactive object in (12) which again is acceptable without the presence of a direct object.

(12)   Hasan-ər   qʷə-p-fə-laʒə.
       Hasan-ABS CIS-2SG-BEN-work
       'Hasan works for you.'

The second diagnostic of low applicatives is related to its semantics, as the structure is said to imply transfer of possession and a direct relation between the indirect object and the direct object. This prediction is not borne out for Adyghe, shown in (13) where the benefactive is compatible with stative verbs.

(13)   Hasan-əm   t͡ʃãntʰa-r Ali-jəm (feʃigə) fə-r-əʁ.
       Hasan-OBL bag-ABS Ali-OBL (for)   BEN-3SG-hold
       'Hasan is holding the bag for Ali.'

Thus, we conclude that Adyghe makes use of the high applicative head which introduces indirect objects between VP and vP (Marantz 1993, Pylkkänen 2008). If we want to extend the account in (10) to reverse PCC patterns, we have to assume that Adyghe

shows obligatory object shift to an outer specifier of ApplP – an assumption that is by itself not problematic. Crucially, this object shift may not involve *tucking in*, in contrast to the inverse scenarios. Since the PCC pattern is reverse, the direct object has to be closer to T than the indirect object. We are left with an analysis where the availability of *tucking in* is relativized to the type of head, i.e. Appl vs. v. Additionally, Nevins' theory requires probe placement on v for ditransitives/benefactives, while applicative intransitives require T to carry the PCC probe. While probe placement is arguable parametrized across languages, Adyghe poses an additional challenge, as probe placement has to vary depending on the context within one language.

3.4 Stegovec (2017, 2020)

A number of languages are reported to show PCC effects sensitive to linear rather than hierarchical order. Languages such as Zürich German (Werner 1999) and Czech (Sturgeon et al. 2012) allow for *IO > DO* as well as *DO > IO* clitic orders where the restrictions on person combinations are not based on grammatical function but surface order. Stegovec (2017, 2020) provides a cross-linguistic overview as well as an analysis for the symmetric PCC patterns found in Slovenian, shown in (14). A canonical PCC pattern is presented in (14-a) where the direct object has to be 3rd person in the presence of an indirect object. In (14-b), the direct object precedes the indirect object and it is the indirect object which has to 3rd person – a reverse PCC effect, as it was also shown for Adyghe in section 2.

(14)   *Canonical/reverse PCC in Slovenian*   (Stegovec 2020:264)

    a. Mama mu   ga/*me/*te   bo   predstavila.
        mom   3M.DAT 3M.ACC/1.ACC/2.ACC will.3 introduce
        'Mom will introduce him/me/you to him.'   DAT: 3 > ACC: 3/*1/*2

    b. Mama ga   mu/*mi/*ti   bo   predstavila.
        mom   3M.ACC 3M.DAT/1.DAT/2.DAT will.3 introduce
        'Mom will introduce him to him/me/you.'   ACC: 3 > DAT: 3/*1/*2

Stegovec develops an account that is independent of case marking. In other words, the indirect object does not receive special treatment. Instead, PCC effects are traced back to locality and the assumption that Agree between an object and v^o deactivates further probing. Following Kratzer (2009), he proposes that v^o enters the derivation with valued person features and assigns them to its arguments.[8] The highest object acts as the closest agreement target for v^o, thereby deactivating the head which in turn prevents further Agree between v^o and the lower object. For canonical PCC, the highest object is the indirect object, see (15-a). Reverse PCC is derived by additional object shift prior to Agree, see (15-b). Having IO and DO be the locus of person valuation allows Stegovec to implement the PLC via default 3rd person Agree (Preminger 2014). Since v^o is deactivated after Agree with the highest object, the lower object is left unvalued for person with the only option of default Agree left, which is very often 3rd person cross-linguistically.
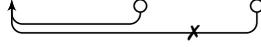
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[8]Other ϕ-features such as number and gender are unvalued on v^o and valued on the arguments, ensuring a downward Agree approach with parasitic person valuation. Stegovec (2020:278) points out that this assumption also predicts the lack of *Number/Gender-Case Constraints*. Since both NCC as well as GenCC effects have recently been attested (Coon et al. 2019, Foley and Toosarvandani 2020), this notion of Agree is in need of some refinement.

(15)　*Reverse PCC via object shift*　　　　　　　　(Stegovec 2020: 278-279)

a.　$[_{v'} \, v^o \, [_{ApplP} \, IO \, [_{Appl'} \, Appl^o \, [_{VP} \, V \, DO \,]]]]$　　　　(14-a)
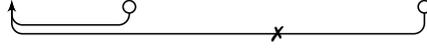
b.　$[_{v'} \, v^o \, [_{ApplP} \, DO \, [_{Appl'} \, IO \, [_{Appl'} \, Appl^o \, [_{VP} \, V \, t_{DO} \,]]]]]$　　　　(14-b)

Based on a larger cross-linguistic survey, Stegovec (2017, 2020) identifies a typological gap in terms of the distribution of canonical and reverse PCC effects. There seems to be no language that displays a reverse PCC effect without an accompanying standard PCC pattern. The reverse PCC in (14-b) e.g. exists along side the regular PCC in (14-a). Crucially, Adyghe fills this typological gap, as it shows a reverse PCC effect in the absence of a canonical PCC pattern within double object constructions.The 3 > *1/*2 contexts in (14-b) are parallel to (6-c) and (6-e) as well as the benefactive variants (7-c) and (7-e), yet the 3 > *1/*2 equivalents for (14-a) are not available in Adyghe since the prefix order within the verbal domain is fixed. The paradigms in section 2 display a *DO > IO* order throughout, thus matching the prefix order. An *IO > DO* order, however, has no effect on the prefix order or the distribution of the cislocative, as the following data in demonstrate. In (16), we present minimal pairs to the ditransitive data in (6-c) and (6-d). For benefactives, compare (17) to the data in (7-c) and (7-d).

(16)　*No change in* CIS *distribution or prefix order with IO > DO order*

a.　wo　se　Ali-jər　qʷə-sə-wə-tə.
　　2SG 1SG Ali-ABS CIS-1SG-2SG-give
　　'You give Ali to me.'

b.　wo　Ali-jəm　se　sə-wə-tə.
　　2SG Ali-OBL 1SG 1SG-2SG-give
　　'You give me to Ali.'

(17)　*No change in* CIS *distribution or prefix order with IO > DO order*

a.　Sine-m　se　Ali-jər　qʷə-s-fə-r-ʃef-əʁ
　　Sine-OBL 1SG Ali-ABS CIS-1SG-BEN-3SG-buy-PST
　　'Sine bought Ali for me.'

b.　Sine-m　Ali-jəm　se　sə-fə-r-ʃef-əʁ
　　Sine-OBL Ali-OBL 1SG 1SG-BEN-3SG-buy-PST
　　'Sine bought me for Ali.'

The lack of a canonical PCC pattern in Adyghe questions the underlying assumptions Stegovec (2020: 304) makes to account for his generalization. In order to derive the generalization that there is no reverse PCC pattern without a canonical PCC pattern, he proposes that (i) the base order IO-over-DO is universal and (ii) there is no obligatory object shift before IO and DO enter the person licensing configurations. Slovenian for example shows optional reordering before person valuation, resulting in canonical and reverse PCC patterns depending on the clitic order. To account for the Adyghe pattern, we must either allow for DO-over-IO base orders or enforce obligatory object shift before the person licensing head enters the derivation. We have also seen that object orders can alternate without any effect on prefix orders or PCC calculations. This suggests that there can be (additional) optional object shift after person valuation.

While this adjustment can account for the lack of canonical PCC effects, the analysis encounters a different obstacle with respect to combinations of local person, specifically

the 1 > 2 configurations, which are licit combinations in Adghe, as was shown in (6-b) and (7-b). In contrast, Slovenian speakers do not allow for local person combinations altogether, displaying a strong PCC pattern.[9]

(18) *Strong PCC in Slovenian* (Stegovec 2020:265)

    a. %Mama mi   te   bo   predstavila.
       mom   1.DAT 2.ACC will.3 introduce
       'Mom will introduce you to me.' DAT: 1 > ACC: 2
    b. %Mama ti   me   bo   predstavila.
       mom   2.DAT 1.ACC will.3 introduce
       'Mom will introduce me to you.' DAT: 2 > ACC: 1

Since Stegovec's (2020) analysis is mainly aimed at accounting for a strong PCC, it relies solely on the PLC, that is the fact that default agreement can only create 3rd person objects. Hence, any combination of local person objects is ruled out. This approach, however, can only create an opposition between participant and non-participant pronouns with no straightforward extension to person restrictions amongst participant pronouns and thus a strictly descending PCC.[10] In Adyghe, hierarchy obeying local person combinations are acceptable, in contrast to Slovenian. This is what makes the PCC pattern ultra-strong and ultimately unsuitable for his account.

We conclude that none of the PCC approaches discussed in this section provides an account of the ultra-strong reverse PCC pattern in Adyghe. Before we move on, we have to address an additional complication every PCC account will have to take into consideration. Whereas within ditransitive/benefactive contexts the subject prefix never enters the person restriction configurations, it does so in applicative intransitives.

4 Clitic doubling vs. ϕ-agreement

Another remarkable property of the cislocative marker concerns the selection of arguments affected by the repair. Crucially, the arguments involved in the distribution of the cislocative marker are not identical in every type of argument structure. Whereas subject and applied object interact within applicative intransitives, ditransitive/benefactive scenarios restrict the interaction to the two object arguments, while the subject never intervenes. We relate the invisibility of subjects in ditransitives/benefactives to the assumption that subject prefixes result from ϕ-agreement, while object-referencing prefixes instantiate clitics. Evidence for this claim comes from observations regarding allomorphy. First observe that a prefix indexing a 3SG argument is generally not pronounced, shown

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[9]A subset of Slovenian speakers show a weak PCC pattern, that is they allow for local person combinations. Stegovec (2020: 280-285) extends his analysis to weak PCC patterns essentially by blocking parasitic person Agree due to the internal feature structure of the objects in the weak PCC variety of Slovenian. This leaves the person features unvalued, triggering valuation-driven movement to spec,vP where each object can undergo downward Agree with the valued person feature on v^o. The person feature on v^o can but must not be deactivated after it has undergone Agree. In the latter case, the licit 1 > 2 and 2 > 1 configurations arise, whereas the former leads to illicit 3 > 1/2 as well as licit 1/2 > 3 scenarios. As with the account for strong PCC, this extension runs into similar issues wrt. to local person configurations in Adyghe. If the person feature is not deactivated, a 1 > 2 combination is licensed in line with the observations in (6-b) and (7-b). The combination 2 > 1, however is subsequently also ruled in, contrary to (6-a) and (7-a).

[10]A similar point was recently made by Preminger (2019: 6) for regular strong PCC effects along the lines of Béjar and Rezac (2003).

for a variety of contexts in (19).[11]

(19) *Zero 3rd person prefix*

    a.   A-r   wo ∅-qʷə-wə-wo.
          3-ABS you **3SG**-CIS-2SG-beat
          'He is beating you.'

    b.   Se a-ʃ   sə-∅-wo.
          I 3-OBL 1SG-**3SG**-beat
          'I am beating him.'

    c.   se Ali-jəm sə-∅-fə-laʒə
          I Ali-OBL 1SG-**3SG**-BEN-study
          'I study for Ali.'

    d.   Ali-jər   se ∅-qʷə-s-fə-laʒə
          Ali-ABS I **3SG**-CIS-1SG-BEN-study
          'Ali studies for me.'

    e.   Pṣaṣe-r jeʒ-ər   ∅-zə-χonə.
          girl-ABS self.3SG-ABS **3sg**-REFL-curse
          'The girl curses herself.'

    f.   wo se   Ali-jəm sə-∅-wə-tə.
          2SG 1SG Ali-OBL 1SG-**3SG**-2SG-give
          'You give me to Ali.'

If 3rd person is co-indexed with the subject of a ditransitive/benefactive, however, it is overtly expressed by *r(ə)-*, see (20).

(20) *3rd person subject prefix in ditransitives / benefactives*

    a.   Hasan-əm wo se   wə-qʷə-sə-**rə**-tə.
          Hasan-OBL 2SG 1SG 2SG-CIS-1SG-**3SG**-give
          'Hasan gives you to me.'

    b.   Sine-m   wo se wə-qʷə-s-fə-**r**-ʃef-əʁ
          Sine-OBL you I 2SG-CIS-1SG-BEN-**3SG**-buy-PST
          'Sine bought you for me.'

More importantly, Özdemir (2020) observes that a 2SG prefix cross-referencing subjects of benefactives displays allomorphy dependent on tense, shown in (21). The observation can be extended to subjects of ditransitives, see (22).

(21) *Tense allomorphy for subject prefix in benefactives*   (Özdemir 2020: 32)

    a.   ∅-qʷə-s-fə-**wə**-ʃefə-∅.
          3SG-CIS-1SG-BEN-**2SG**-buy-PRES
          'You buy him for my sake.'

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[11]Note that 3SG applied objects occasionally cooccur with the prefix *j*ə-, as seen in (6-g) for example. Arkadiev (2020) notes that the occurence of this marker depends on complex morphophonological conditions. We cannot fully disentangle the triggers for this allomorph. According to our data, a necessary condition for the occurrence of the allomorph is that one of the arguments be expressed by a proper name. In this sense, it seems to be related to *Differential Argument Marking* which is independently attested in Adyghe (Arkadiev and Testelets 2019). The possibility that the ∅-/jə- allomorphy is sensitive to discourse prominence distinctions serves as another potential argument for clitichood, under the assumption that Preminger's *coarseness property of clitic doubling* (2014: 15) can be extended to definiteness features.

b. ∅-qʷə-s-fə-**p**-ʃefə-ʁ.
3SG-CIS-1SG-BEN-**2SG**-buy-PST
'You bought him for my sake.'

(22) *Tense allomorphy for subject prefix in ditransitives*

a. Wo a-r se qʷə-se-**wə**-tə.
you 3-ABS I CIS-1SG-**2SG**-give
'You are giving him to me.'

b. Wo a-r se qʷə-se-**p**-tə-ʁ.
you 3-ABS I CIS-1SG-**2SG**-give-PST
'You gave him to me.'

Furthermore, this allomorphy does not apply generally to 2SG prefixes adjacent to the verb, as is demonstrated in (23).

(23) *Tense allomorphy not due to adjacency to verb stem* (Özdemir 2020: 33)

a. Se wo sə-**wə**-wo-∅.
I you 1SG-**2SG**-beat-PRES
'I am beating you.'

b. Se wo sə-**wə**-wo-aʁ.
I you 1SG-**2SG**-beat-PST
'I beat you (in the past).'

Crucially, 2SG prefixes cross-referencing the subject of applicative intransitives do not display this kind of tense allomorphy, shown for *wo* 'beat' in (24).

(24) *No tense allomorphy for subject prefix in applicative intransitives*

a. Wo se **wə**-qʷə-sə-wo-∅.
you I **2SG**-CIS-1SG-beat-PRES
'You are beating me.'

b. Wo se **wə**-qʷə-sə-wo-aʁ.
you I **2SG**-CIS-1SG-beat-PST
'You beat me (in the past).'

We provide two further examples for applicative intransitives – *ʃtə* 'fear' and *gə* 'call' – confirming the lack of allomorphy for 2nd person subjects across tenses. While the types of θ-roles largely vary across the three predicates, the underlying structure appears to be the same, based on the order of prefixes on the verb as well as overt case marking on the arguments, which are transparently shown in (25-a) and (26-a). The data in (25-b) as well as (26-b) do not show allomorphy for 2nd person subjects, in line with the data in (24).

(25) *No tense allomorphy for subject prefix in applicative intransitives*

a. Ali-jər a-χə-mə j-a-ʃe-ʃtə-∅.
Ali-ABS 3P-PL-OBL 3SG-3PL-APPL-fear-PRES
'Ali fears them.'

b. Wo se **wə**-qʷə-s-tʃe-ʃtə / **wə**-qʷə-s-ʃe-ʃtə-ʁ.
you I **2SG**-CIS-1SG-APPL-fear / **2SG**-CIS-1SG-APPL-fear-PST
'You fear / feared me.'

14

(26)   *No tense allomorphy for subject prefix in applicative intransitives*

    a.   Sine-r   a-χə-mə j-a-gə.
          Sine-ABS 3-PL-OBL 3SG-3PL-call
          'Sine calls them.'

    b.   Wo se **wə-**qʷə-sə-gə   / **wə-**qʷə-sə-gə-ʁ.
          you I **2SG-**CIS-1SG-call / **2SG-**CIS-1SG-call-PST
          'You call / called me.'

We take tense-invariance to be indicative of pronominal status, suggesting that these person markers constitute clitics (Nevins 2011, Arregi and Nevins 2012, Harizanov 2014, Kramer 2014). In contrast, tense-variant person markers, that is the prefix cross-referencing subjects of ditransitives/benefactives, are the result of Agree. This split between clitic doubling and Agree finds predecessors in the analysis of the agreement morphology in Basque (Arregi and Nevins 2008, Preminger 2009, 2014). Our analysis in section 5 will follow the intuitions by Arregi and Nevins (2008) and Nevins (2011), in that person hierarchy effects emerge only with clitic doubling. This will eventually derive the fact that subjects of ditransitives/benefactives never enter the valuation for PCC effects, in contrast to subjects of applicative intransitives.[12]

We hypothesize that the status of clitic doubling vs. pure ϕ-Agree is linked to case assignment since the latter correlates with ergative case. This makes an immediate prediction for regular ERG-ABS transitives, which we see borne out in (27) and (28). Since subjects of transitive clauses are assigned ergative case, shown in (27-a) and (28-a), we predict them to show tense sensitive allomorphy for 2nd person, see (27-c) and (28-c). As with ditransitives/benefactives, the prefix cross-referencing the subject is closest to the stem, see (27-b) and (28-b). Note also that the cislocative does not occur in (27-c) and (28-c), although the object outranks the subject on the person scale. This is in so far predicted as there is only one argument which is clitic doubled. We will come back to transitives in section 6.3.

(27)   *Tense allomorphy for subject prefix in transitives*

    a.   Mehmet-əm tʃale-gore-r   je-ʃefə.
          Mehmet-OBL boy-some-ABS 3SG-buy
          'Mehmet is buying some boy.'

    b.   se wo wə-se-ʃefə   / wə-s-tʃefə-ʁ.
          I you 2SG-1SG-buy / 2SG-1SG-buy-PST
          'I am buying / bought you.'

    c.   wo se sə-**wo-**ʃefə   / sə-**p-**ʃefə-ʁ.
          you I 1SG-**2SG-**buy / 1SG-**2SG-**buy-PST
          'You are buying / bought me.'

(28)   *Tense allomorphy for subject prefix in transitives*

    a.   Mehmet-əm tʃale-gore-r   jə-ɬaʁə.
          Mehmet-OBL boy-some-ABS 3SG-see
          'Mehmet sees some boy.'

---

[12]The observant reader will have noticed that the *p-* allomorph is also triggered for 2nd person benefactive objects in (7-b) and (7-e), as well as 2nd person stimulus arguments which we will see later on. Crucially, this occurrence of the allomorph is not tense sensitive.

b. Se wo wə-sə-ɬaʁə / wə-s-ɬaʁə-ʁ
I you 2SG-1SG-see / 2SG-1SG-see-PST
'I see / saw you.'

c. Wo se sə-**wo-**ɬaʁə / sə-**p-**ɬaʁə-ʁ.
you I 1SG-**2SG-**see / 1SG-**2SG-**see-PST
'You see / saw me.'

With our analysis, we will depart from previous work on the verbal morphology of Adyghe, specifically the most recent proposals by Ershova (2019b, 2020a). A system where each person prefix results from Agree with a dedicated functional head – either via Agr projections (Ershova 2019b: 39-42) or spec-head Agree (Ershova 2020a: 12) – will not be able to derive interactions between person features. Instead, we propose v to be the locus of all ϕ-feature licensing. Not only will this enable multi-valuation PCC/inverse theories to derive the desired effects, it also provides a natural explanation for the prefix order, as section 5 will show.

5   Analysis and discussion

For reason that will become obvious in section 5.1, we follow Ershova (2019a, 2020b) and assume that case is assigned via functional heads (Chomsky 1995, 2000, Legate 2008). The structure in (29) presents the basic clause structure where applied objects are introduced by an applicative head (Marantz 1993) and the external argument is introduced by v.[13]

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[13]Three-place predicates cannot be decomposed into a causative v and a P-*have* projection introducing a having relation, see (i). This structure was proposed by Pesetsky (1995) and Harley (1997, 2002), partially based on the so called *Oehrle effects* (Oehrle 1976).

(i)   Ditransitives with P$_{have}$:
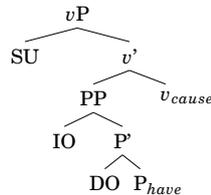
Harley (1997, 2002) assumes that there is real *having*-relation between patient and recipient/beneficiary. Thus, the IO should be animate, existent and receiving. As shown in (ii)-(iv), beneficiaries/recipients can be non-existent, non-receiving, and inanimate.

(ii)   Ali-jəm ji-ʃfyzə   pasta fə-r-ʃef-əʁ.
        Ali-OBL POSS-wife cake   BEN-3SG-buy-PST
        'Ali bought a cake for his wife (but he is actually not married.)'

(iii)   Ali-jəm ji-ʃfyzə   pasta fə-r-ʃef-əʁ.
        Ali-OBL POSS-wife cake   BEN-3SG-buy-PST
        'Ali bought a cake for his wife (but he gave it to his mother.)'

(iv)   a.   txaqə-m   txəɬ-ər   aɬmãnjã-m   jə-tə-ʁ
             author-OBL book-ABS Germany-OBL 3SG-give-PST
             'The author gave the book to Germany.'
        b.   txaqə-m   txəɬ-ər   Ali-jəm rə-tə-ʁ
             author-OBL book-ABS Ali-OBL 3SG-give-PST
             'The author gave the book to Ali.'

(29) *Clause structure and case*
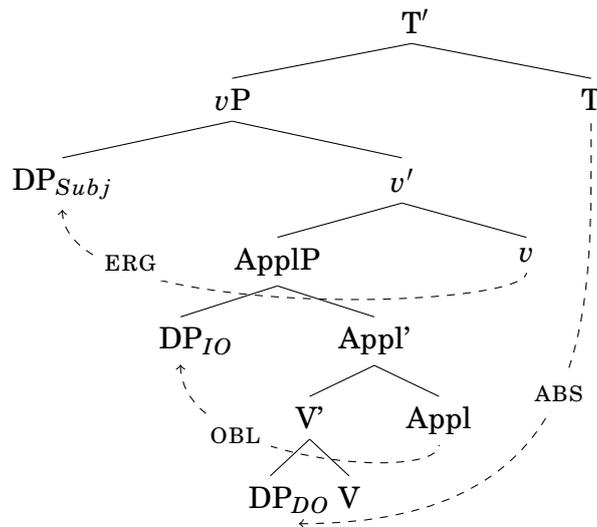
As Caponigro and Polinsky (2011) proposed for the Adyghe case system, both ergative and oblique is spelled out by *-m*, resulting from case assignment by v in the former and Appl in the latter case. Absolutive case, however, is uniformly assigned by T – to the internal object in (29) and to the external object within applicative intransitive structures, see also Ershova (2020b: 435-436).

5.1 Deriving inverse and reverse PCC effects

In line with many accounts on cliticization (Anagnostopoulou 2003, Rezac 2008a, Preminger 2019, Coon and Keine 2020), we distinguish ϕ-agreement, which is achieved by pure copying of ϕ-features from goal to probe, from clitic doubling as the result of ϕ-Agree followed by some form of pronominalization. Since clitic doubling must also take place in spec-head configurations, we refrain from implementing pronominalization as head movement (Uriagereka 1998, Cecchetto 2000, Belletti 2005, Preminger 2019, among many others). Instead, we follow Preminger (2014) in analyzing clitic doubling as an Agree operation that leads to copying of ϕ-features to a head-adjoining pronominal clitic.

The presence of ϕ-agreement is tied to the assignment of ergative case. Specifically, we argue that ϕ-agreement between a subject and v can be a reflex of ergative case assignment. This type of *Parasitic Agree* finds many predecessors, see e.g. Chomsky (2001), Rezac (2004), Heck and Richards (2010), Danon (2011), Kotek (2014). The relevant operations for the ditransitive/benefactive structures are shown in (30) where the notation indicates that features come in *stacks* (Stabler 1997, Müller 2009), that is syntactic operations are ordered and always triggered by the highest active feature on the stack.[14] Ergative case assignment takes place before clitic movement, ensuring that the prefix co-referencing the subject occurs closest to the verbal stem. In (30-a), v assigns ergative case with subsequent valuation of the subject's ϕ-features. Since the external argument becomes inactive for all subsequent Agree operations, it will not take part in any person restriction evaluations. The next step is shown in (30-b) where Appl moves to v checking uAppl, which is eventually spelled out as *fə-* for Appl_{ben}. The last feature on the stack

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[14]Further syntactic operations not shown in (30) are inherent case assignment of oblique case by Appl and absolutive case assignment by T.

is an elaborate probe triggering clitic doubling, shown in (30-c) with the notation taken from Béjar and Rezac (2009).[15] The probe will enter Agree with the applied object first and then with the internal argument, resulting in the correct clitic order if each of the Agree cycles triggers clitic doubling to v. Since both inverse and PCC patterns are stricly descending, the probe must be highly articulate.

(30)   *Ditransitives and benefactives: Cl_{DO}-Cl_{IO}-(BEN-)Agr_{Subj}-V*

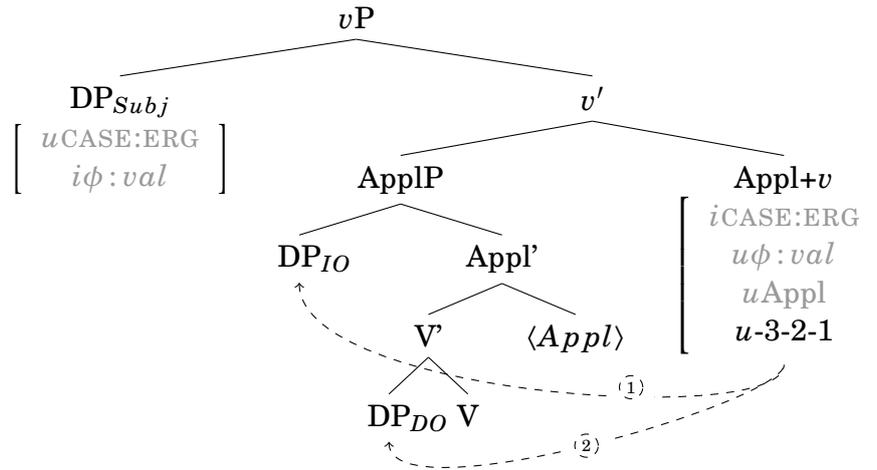   a.   *Ergative case assignment and Parasitic φ-Agree*
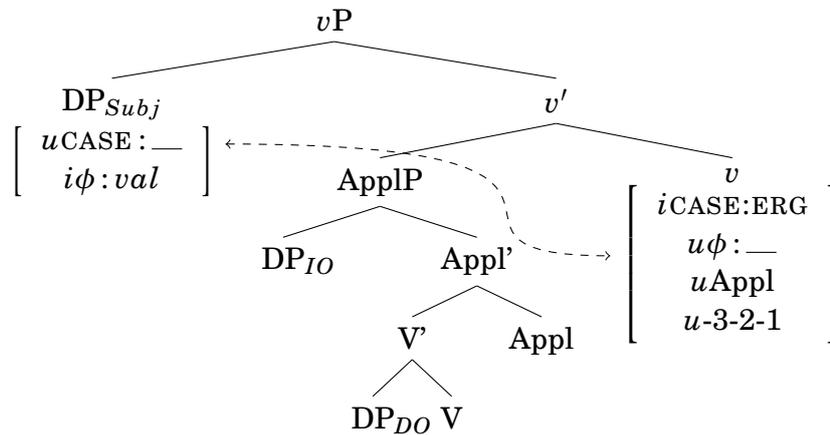
    b.   *Appl-to-v movement*

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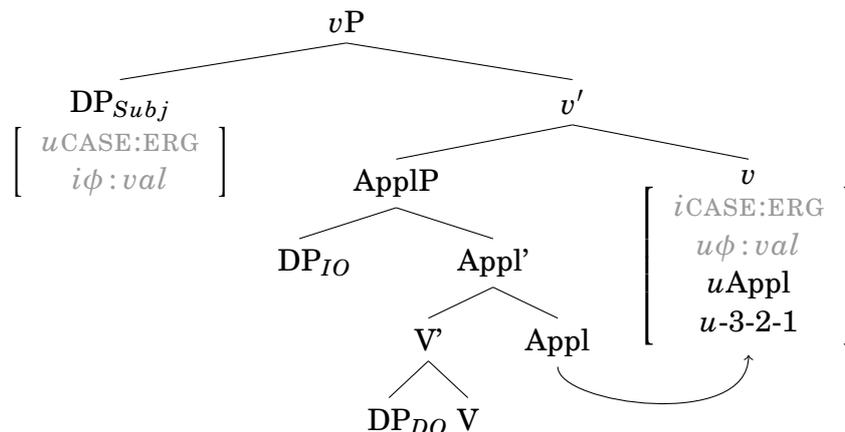
[15]Parasitic Agree does not affect the clitic doubling probe. We propose that this follows naturally from the nature of the stack. Since the clitic doubling probe only becomes active after uAppl has been discharged and the external argument does not provide a matching Appl-feature, the lower part of the stack is shielded from Parasitic Agree. Hence, only the next lower $u\phi$-probe can undergo Parasitic Agree.

c. *Clitic doubling*

vP
├── DP$_{Subj}$
│ $\begin{bmatrix} u\text{CASE:ERG} \\ i\phi:val \end{bmatrix}$
└── v'
    ├── ApplP
    │   ├── DP$_{IO}$
    │   └── Appl'
    │   ├── V'
    │   │   └── DP$_{DO}$ V
    │   └── $\langle Appl \rangle$
    └── Appl+v
        $\begin{bmatrix} i\text{CASE:ERG} \\ u\phi:val \\ u\text{Appl} \\ u\text{-3-2-1} \end{bmatrix}$

Before we discuss the inverse pattern for applicative intransitive, we will first investigate where the absolutive argument is first merged. Ershova (2020a) provides evidence based on reflexive binding that within applicative unergatives the absolutive subject asymmetrically c-commands the applied object. In (31), we see another example of an absolutive-oblique structure. Recall from (5) that the prefix cross-referencing the absolutive subject precedes the prefix cross-referencing the applied object. Crucially, only the oblique slot on the verb in (31) can be replaced with the reflexive marker, not the absolutive slot.

(31) *Binding asymmetries for ŝʷe 'dance'* (Ershova 2020a: 16)
      a. *pro refl* wə-qə-z-d-e-ŝʷe-ž'ə
              2SG.ABS-DIR-REFL.IO-COM-DYN-dance-RE
          'You are dancing with yourself.'
      b. **refl pro* zə-qə-b-d-e-ŝʷe-ž'ə
              REFL.ABS-DIR-2SG.IO-COM-DYN-dance-RE
          Intended: 'You are dancing with yourself.'

As expected, the same binding asymmetries can be found for the applicative intransitive structure in (5), shown in (32). We therefore conclude that the absolutive argument is first merged in spec,vP.

(32) *Binding asymmetries for wo 'beat'*
      a. *pro refl* sə-zə-wo.
              1SG.ABS-REFL-beat
          'I am beating myself.'
      b. **refl pro* zə-sə-wo.
              REFL.ABS-1SG.IO-beat
          Intended: 'I am beating myself.'

Both canonical inverse as well as reverse PCC scenarios can be characterized by an IO preference, that is a probe undergoing multi-valuation encounters the IO first. If the IO is more prominent than either the DO in ditransitives/benefactives or the subject in applicative intransitives, a PCC/inverse repair is needed. The structure in (33-b) models this interaction by adopting cyclic expansion, that is the probe can enter Agree with the subject upon projection (Béjar and Rezac 2009: 48). As in (30), the order of argument-referencing prefixes follows straightforwardly if each ϕ-Agree cycle triggers clitic doubling. Indepen-

dent evidence for the clitic status is given by tense invariance, recall (24)-(26). Crucially, subjects of applicative intransitives are marked for absolutive case, indicating that v does not assign ergative in (33). Hence, there is no possibility of Parasitic Agree like in (30-a) so that the person features are licensed via clitic doubling.

(33)   *Applicative intransitives: Cl_{Subj}-Cl_{IO}-V*
   a.   *Appl-to-v movement*
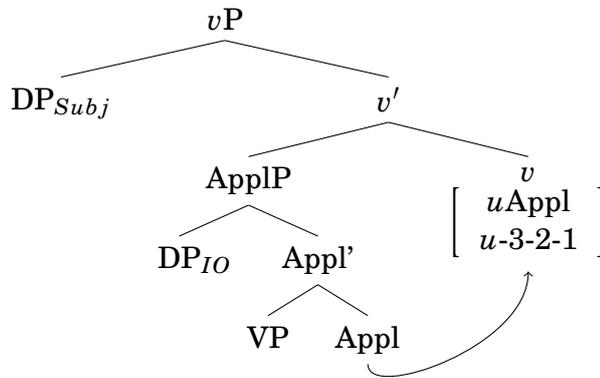
   b.   *Clitic doubling*
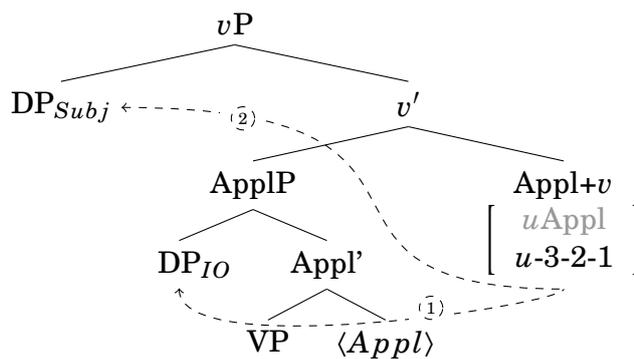
As was already hinted at throughout this section, our analysis derives the prefix orders for all three paradigms introduced in section 2 without further ado. The split between clitic doubling on the one hand and exponents resulting from ϕ-Agree with ergative subjects on the other introduces a distinction that can explain why prefixes cross-referencing ergative arguments occur closest to the stem. Under the assumption that features are stacked and case assignment is ordered before clitic doubling, we derive the correct prefix slot for ergative subjects. The outermost status of the absolutive prefix slot follows from the fact that the absolutive argument is always the last to enter Agree with the probe for clitic doubling. Crucially, our analysis does not rely on a morphological template, in stark contrast to previous analyses (Lander and Testelets 2017, Ershova 2019b, 2020a,b, Arkadiev and Testelets 2019, Arkadiev 2020).[16] In the following, we will discuss two multi-valuation accounts which provide a straightforward account of the person co-occurrence restrictions, based on the structures in (30) and (33).

---

[16]Ershova (2019a,b, 2020a) takes the the outermost absolutive prefix slot to be indicative of obligatory A-movement of the absolutive argument to spec,TP. In other words, Adyghe is argued to be a high-absolutive language. Independent evidence comes from reciprocal binding and parasitic gap licensing. Our analysis does not exclude the possibility that Adyghe has that property. We do, however, argue that the position of the prefix slot cross-referencing the absolutive argument cannot be taken as evidence for it.

5.2 Cyclic Agree

Essential for the Agree mechanism by Béjar and Rezac (2009) is a geometry-based feature structure that reflects natural classes as well as entailment relations (Harley 2002, Béjar 2003). In (34), it is shown how privative person features are organized into hierarchically ordered structures.

(34)

PERSON ENTAILMENTS		
3rd	2nd	1st
π	π	π
	PART	PART
		AUTH

Variation wrt. PCC/inverse patterns are implemented by manipulating the specifications of the probe responsible for person licensing, see (35). Goals less specified than the probe will partially match the probe's feature specification, in which case the probe can undergo another Agree cycle and license a second goal. The probe in Adyghe is maximally specified, where [u-3-2-1] is a shorthand for [u-π-PART-AUTH].

(35)

PROBES IN BÉJAR AND REZAC (2009)		
PATTERN	PROBE	LANGUAGES
no restriction	[u-3]	Swahili, Abkhaz, Choctaw, English, …
strong	[u-3-2]	Basque, Georgian, Greek, …
ultrastrong	[u-3-2-1]	Mohawk, Kashmiri, **Adyghe**, …

Finally, a generalized PLC (36) that captures interactions between all three persons triggers a repair operation whenever the articulated probe does not interact with all arguments that need licensing.

(36) *Person Licensing Condition*   (Béjar and Rezac 2009: 46)
A π-feature [F] must be licensed by Agree of some segment in a feature structure of which [F] is a subset.

Let us start with the applicative intransitive contexts. For a 2 > 1 scenario, as shown in (5-b) for example, [u-3-2-1] probes down and finds a 1st person object, thus specified as [3-2-1], which fully matches the probe's specification. Since the probe is now fully deactivated, it does not Agree with the subject and the cislocative emerges as a repair to license the subject. An illustration is given in (37).
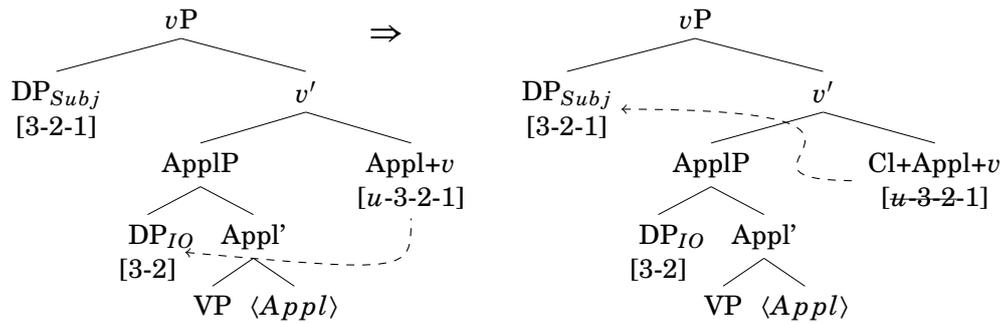
(37) *Applicative intransitives: 2 > 1*
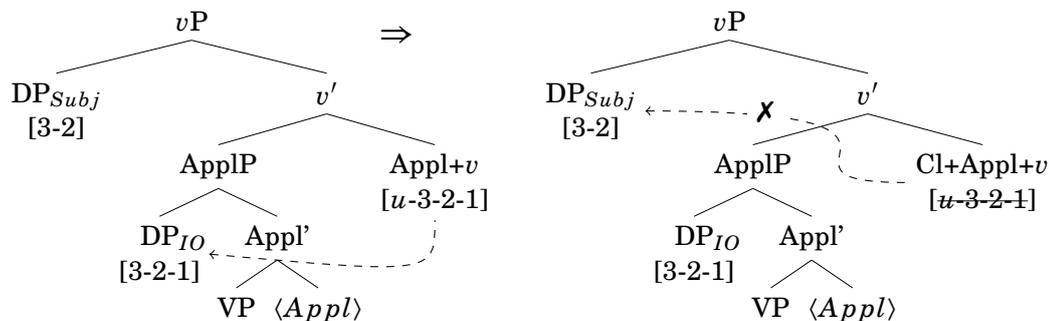
The opposite 1 > 2 scenario in (5-a) where the cislocative does not occur is presentend in
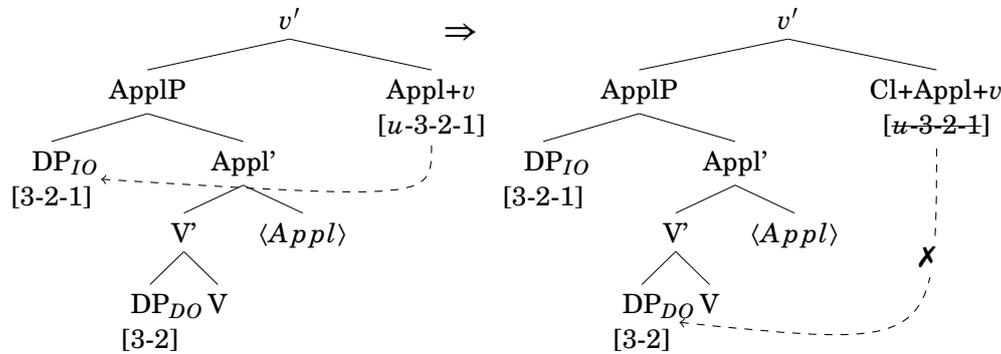
(38). The [u-3-2-1] probe searches down and finds a 2nd person object, specified as [3-2] and thereby only partially matching the probe's specification. Matching does not require full identity, it suffice for a goal to be identical to a subset of the probe's segments (Béjar and Rezac 2009: 45). The first Agree-cycle leaves a residue on the probe which in turn enables the probe to search upwards and license the subject. It is important that the external argument is higher in the person hierarchy as it needs to match a segment in the probe that has not been deleted yet.

(38)   *Applicative intransitives: 1 > 2*

```
              vP                    ⇒                      vP
        ┌─────┴─────┐                              ┌───────┴───────┐
   DP_Subj         v'                         DP_Subj ←-------     v'
   [3-2-1]      ┌───┴───┐                     [3-2-1]         ┌─────┴─────┐
            ApplP      Appl+v                            ApplP    Cl+Appl+v
          ┌───┴───┐    [u-3-2-1]                       ┌───┴───┐  [u-3-2-1]
       DP_IO  Appl'                                 DP_IO  Appl'
       [3-2]                                        [3-2]
            ┌───┴───┐                                    ┌───┴───┐
           VP  ⟨Appl⟩                                   VP  ⟨Appl⟩
```

The PCC contexts can be derived in a similar way. Take the ditransitive 2 > 1 context in (6-a) for example, shown in (39). The probe encounters a 1st person IO first, thereby fully matching [u-3-2-1] on v which in turn results in a repair configuration since the DO is not licensed.

(39)   *Ditransitives/benefactives: 2 > 1*

```
              v'                    ⇒                      v'
        ┌─────┴─────┐                              ┌───────┴───────┐
     ApplP         Appl+v                       ApplP         Cl+Appl+v
   ┌───┴───┐       [u-3-2-1]                   ┌───┴───┐       [u-3-2-1]
 DP_IO ←  Appl'                             DP_IO    Appl'
 [3-2-1]  ┌───┴───┐                         [3-2-1]  ┌───┴───┐
         V'   ⟨Appl⟩                                V'   ⟨Appl⟩    ✗
       ┌──┴──┐                                    ┌──┴──┐
    DP_DO  V                                   DP_DO  V
    [3-2]                                      [3-2]
```

In the mirror 1 ≻ 2 context in (6-b), shown in (40), the [u-3-2-1] probes sees a 2nd person IO which partially matches the probe, leading to further probing downwards where it licenses the DO.

(40)   *Ditransitives/benefactives: 1 > 2*
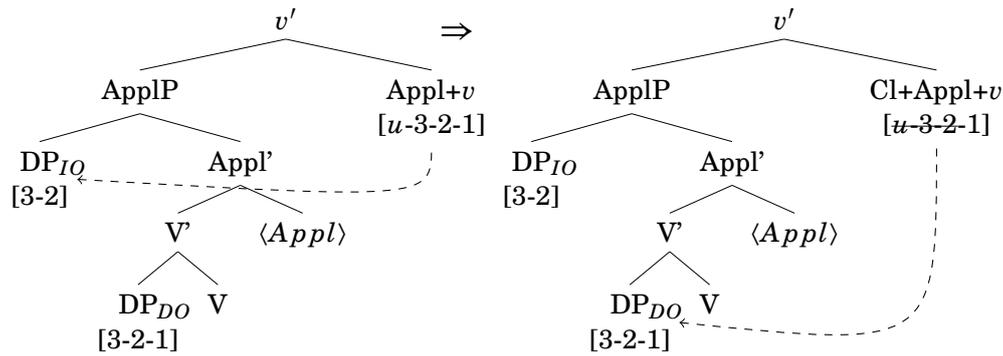
The contexts involving 1st/2nd person and 3rd person can be derived very similarly and are therefore not shown here. We will come back to *3-on-3* scenarios as well as the implementation of the repair in section 5.4.

5.3 Interaction and Satisfaction

Another multi-valuation Agree account which can derive the Adyghe data rather effortlessly and is partially inspired by Béjar and Rezac (2009) was recently put forward by Deal (2020). Capitalizing on the idea that Agree essentially creates redundant information, Deal (2015a, 2020) proposes two restrictions on the Agree operation, an *interaction* condition which restricts the features which participate in transfer from goal to probe, and a *satisfaction* condition which halts probing. With this, Deal departs from standard valuation accounts in which probes are defined by unvalued features which have to be checked by their valued counterparts, otherwise the derivation crashes. As with the system presented in section 5.2, ϕ-features are geometrically structured and Agree can happen with more than one goal, depending on probe specifications as well as derivational timing. We provide a selection of probes in (41), matching the environments in (35) from section 5.2.

(41)

PROBES IN DEAL (2020)		
PATTERN	PROBE	DYNAMIC INTERACTION
no restriction	$[\text{INT}:\phi, \text{SAT}:-]$	none
strong	$[\text{INT}:\phi, \text{SAT}:\text{PART}]$	none
ultrastrong	$[\text{INT}:\phi, \text{SAT}:\text{SPEAK}]$	$[\text{PART}]^{\uparrow}$

Crucial for the account is the fact that two-place as well as three-place predicates always encounter the DO first, modeled via cyclic expansion in the former and object shift in the latter case. A strong PCC for example results from a probe which interacts with all arguments with ϕ-features and stops probing as soon as it encounters a participant feature, that is 1st or 2nd person. Hence, in the presence of a participant DO the probe cannot enter Agree with the IO or the subject. For ultrastrong patterns, the interaction condition is specified for ϕ but can change in the course of the derivation, while the satisfaction condition is specified for [SPEAK]. The latter will exclude contexts where Agree happens with the IO/subject across a 1st person DO. If the DO is 2nd person, the participant features is copied into the interaction condition, which in turn restricts the IO/subject to 1st person (dynamic interaction). If the DO is 3rd person, it does not dynamically interact or satisfy with the probe, thus the IO/subject can be any person. In

order to adopt this system for Adyghe, we only have to assume that there is no object shift of DO over IO, thereby deriving the reverse PCC pattern. Adyghe, thus, displays an IO preference both for applicative intransitives and ditransitives/benefactives. For the rest of this section, we will illustrate scenarios including 1st and 2nd person, starting with applicative intransitives for 2 > 1 in (42). Since the probe is satisfied after the first Agree cycle, the subject does not get licensed, thus requiring a repair. In contrast to Béjar and Rezac (2009), this is now hardwired by the satisfaction condition.

(42)   *Applicative intransitives: 2 > 1*
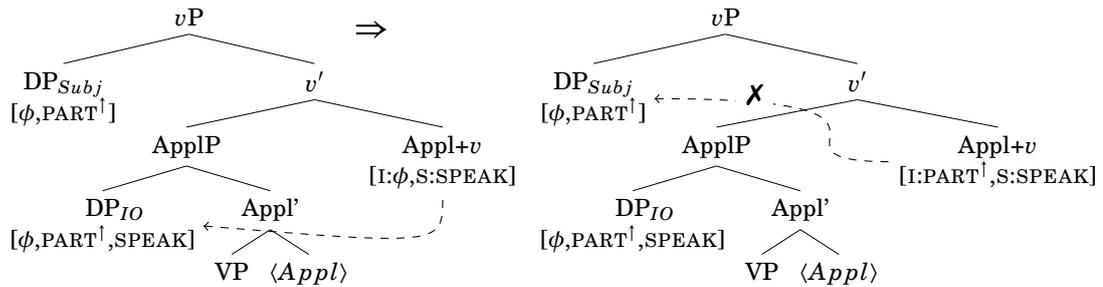
If the IO is 2nd person, the probe enters another Agree cycle. Since there is no lower argument, the probe searches further upwards. Since this is a case of dynamic interaction, only an argument with another participant feature will be licensed, which is the case in (43).[17]

(43)   *Applicative intransitives: 1 > 2*
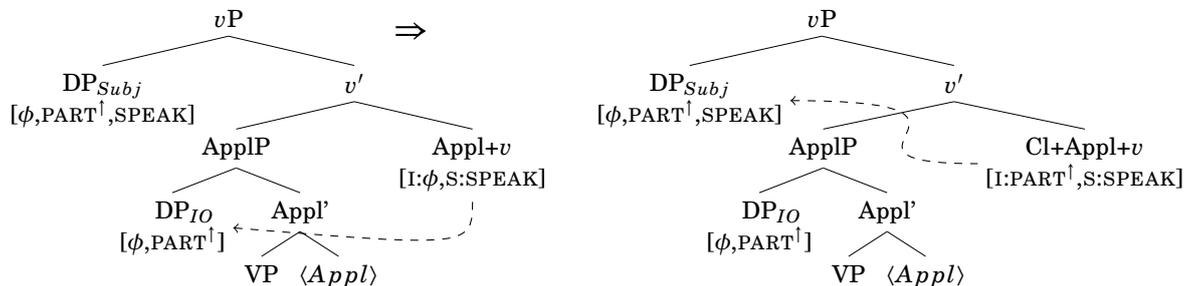
Turning now to interactions between IO and DO, the satisfaction condition triggers a repair in 2 > 1 contexts, as the first goal – for Adyghe the IO due to the lack of object shift – satisfies the probe so that probing is halted, shown in (44).

---

[17]More interesting perhaps is that dynamic interaction of PART$^{\uparrow}$ prevents *3 > 2* contexts, which ultimately distinguishes a strictly descending pattern from a me-first pattern. If the interaction condition is not changed dynamically after the first Agree cycle, a 3rd person subject will enter Agree with the probe and thus get licensed, contrary to the ultrastrong pattern we find in Adyghe.

(44)   *Ditransitives/benefactives: 2 > 1*
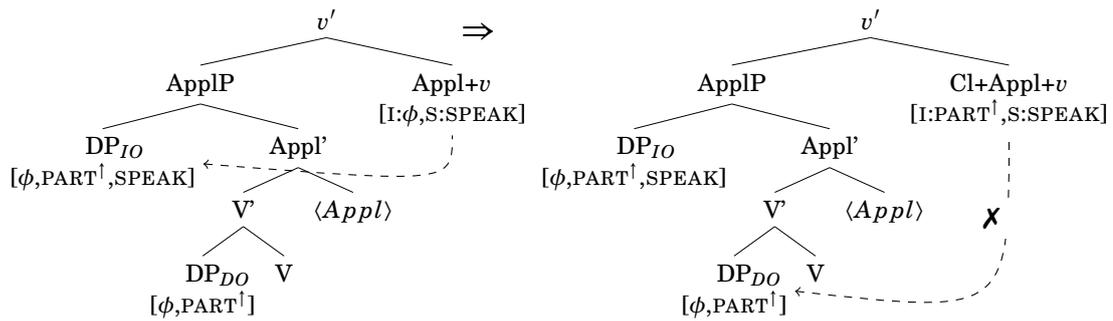
Finally, within 1 > 2 scenarios in (45), the first goal is 2nd person, that is PART$^\uparrow$ and therefore not satisfying the probe. Since PART$^\uparrow$ is copied into the interaction condition, the only goal the probe can interact with further is another [PART] feature, which predicts that the second goal can only be 1st person.

(45)   *Ditransitives/benefactives: 1 > 2*
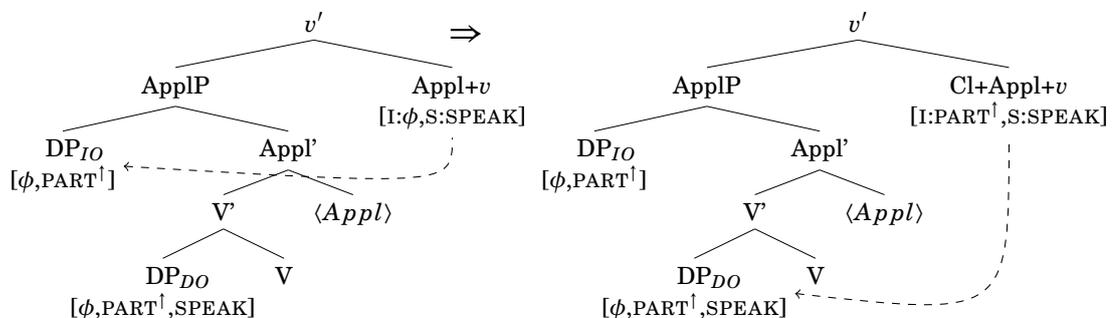
As with the account discussed in the previous section, the contexts involving 1st/2nd person and 3rd person arguments fall out accordingly and will subsequently not be discussed.

5.4   On the nature of the directional marker

Up to this point, we assumed that the insertion of the cislocative marker instantiates a repair for inverse and PCC contexts. This claim aligns in spirit with previous work which has taken inverse marking (DeLancey 1981, Bliss 2013, Wiltschko 2014, Zubizarreta and Pancheva 2017) as well as PCC repairs (Charnavel and Mateu 2015, Pancheva and Zubizarreta 2018) to be rooted in grammatical perspective marking. Moreover, the connection between person hierarchy restrictions and the licensing of perspectival centers is empirically motivated. The grammaticalization from cislocative/directional markers to inverse markers is well-documented for the language Nez Percé (Sahaptian), as discussed in Rude (1991, 1997), Zúñiga (2002, 2006), Deal (2015b), and illustrated in (46) where *-(i)m* acts as a directional marker, while in (47), the same morpheme is used to indicate an inverse pattern.[18] The same grammaticalization path is also being reported for the Kuki-Chin languages (Sino-Tibetan) as well as some languages where the grammaticalization process is well under way such as Japanese (Shibatani 2003), see Jacques and Antonov (2014) for more references. Moreover, Arkadiev (2020) shows how a cislocative acts as an inverse marker in Georgian, a language geographically close to Adyghe.

---

[18]Both markers originate from Proto-Sahaptian *-ím, as noted by Rude (1997).

(46) *Sahaptian cislocative marker as a directional marker* (Rude 1997: 121)

    a. I-wínan-a.
       3SG-go-PST
       'He went.'

    b. I-wínan-m-a.
       3SG-go-CIS-PST
       'He came.'

(47) *Sahaptian cislocative as an inverse marker* (Rude 1997: 121)

    a. Héexn-e.
       see-PST
       'I saw you.'

    b. Hexn-ím-e.
       see-INV-PST
       'You saw me.'

Another aspect in which the cislocative in Adyghe resembles an inverse repair is its sensitivity to the proximate/obviative distinction on arguments. Since the inverse marker is traditionally seen as a means to disambiguate grammatical relations, *3-on-3* scenarios necessitate another distinction. In line with the person hierarchy, proximate arguments are ordered higher than obviative arguments, as they are closer to the deictic center. We repeat the 3 > 3 contexts from section 2 and pair them with the mirror context in (48), (49), and (50) respectively.

(48) *Applicative intransitives: 3 > 3* (Özdemir 2020: 10)

    a. Mehmet-ir   tʃale-gore-m jə-wo.
       Mehmet-ABS boy-some-OBL 3SG-beat
       'Mehmet is beating some boy.'   AG: PROX, GOAL: OBV, ✗ CIS

    b. tʃale-gore-r   Mehmet-im qʷə-wo.
       boy-some-ABS Mehmet-OBL CIS-beat
       'Some boy is beating Mehmet.'   AG: OBV, GOAL: PROX, ✓ CIS

(49) *Ditransitives: 3 > 3* (Özdemir 2020: 11)

    a. se tʃale-gore-r   Mehmet-im qʷə-sə-tə.
       1SG boy-some-ABS Mehmet-OBL CIS-1SG-give
       'I am giving some boy to Mehmet.'   REC: PROX, PAT: OBV, ✓ CIS

    b. se Mehmet-ir   tʃale-gore-m jə-sə-tə.
       1SG Mehmet-ABS boy-some-OBL 3SG-1SG-give
       'I am giving Mehmet to some boy.'   REC: OBV, PAT: PROX, ✗ CIS

(50) *Benefactives: 3 > 3*

    a. Sine-m   tʃale-gore-r   Ali-jəm qʷə-fə-r-ʃef-əʁ.
       Sine-OBL boy-some-ABS Ali-OBL CIS-BEN-3SG-buy-PST
       'Sine bought some boy for Ali.'   BEN: PROX, PAT: OBV, ✓ CIS

    b. Sine-m   Ali-jər tʃale-gore-m fə-r-ʃef-əʁ.
       Sine-OBL Ali-ABS boy-some-OBL BEN-3SG-buy-PST
       'Sine bought Ali for some boy.'   BEN: OBV, PAT: PROX, ✗ CIS

We can capture the proximate/obviative distinction by extending the person hierarchy along the lines of Oxford (2019: 962), shown in (51). This extension can be readily implemented for each of the Agree systems discussed above. For Béjar and Rezac (2009), the

probe in Adyghe would have to be specified as [u-3-PROX-2-1]. In Deal's (2020) system, Adyghe would not only show dynamic intervention with [PART$^\uparrow$] but also with [PROX$^\uparrow$].

(51)

PERSON ENTAILMENTS			
3rd,obv	3rd,prox	2nd	1st
π	π	π	π
	PROX	PROX	PROX
		PART	PART
			AUTH

While both the nature of the repair as well as the proximate/obviative sensitivity point to an inverse language, there is one striking aspect in which the distribution of the cis-locative patterns with PCC languages. Inverse morphology with ditransitive verbs is determined by the person features of the subject and the indirect object (Bliss et al. 2020) – see Klaiman (1992) for Arizona Tewa (Kiowa-Tanoan), DeLancey (2013) for Bawn (Sino-Tibetan), Rhodes (1994), Valentine (2001), Zúñiga (2002), Wunderlich (2005), Lochbihler (2008) for Algonquian languages, and Rude (2009) for Sahaptin. We demonstrate the interaction with Ojibwe, an inverse language with a *2 > 1 > 3* hierarchy (Valentine 2001). The relevant part of the paradigm is given in (52), where the inverse marker *-in* occurs in a *2 > 1* (52-b) since the subject outranks the object on the person scale. Both (52-a) and (52-c) present direct scenarios, where morphology additionally distinguished between interactions between local person and non-local person.

(52) *Ojibwe's inverse system*   (Valentine 2001: 270-271)

    a.   g-waabam-i
         2-see-DIRECT(LOCAL)
         'You see me.'

    b.   g-waabm-in
         2-see-INVERSE(LOCAL)
         'I see you.'

    c.   g-waabm-aa
         2-see-DIRECT(NON-LOCAL)
         'You see him.'

Lochbihler (2008) provides the following contexts showing that the interaction relevant for the distribution of the inverse marker is exclusively tied to the subject and the indirect object. The constellation in (53-a) can be construed in parallel to (52-a), the same goes for (53-b) and (52-b). If the interaction were to take place between indirect object and direct object, we would expect the directive marker *-aa* in (52-c) to occur in (53-b). Instead, we see inverse marker *-in*, suggesting that it encodes person restrictions between subject and indirect object.

(53) *Ojibwe's inverse system for ditransitives*   (Lochbihler 2008: 309)

    a.   gi-gii-miin-i   emkwa:nes
         2-PST-give-DIRECT(LOCAL) spoon
         'You gave a spoon to me.'

    b.   gi-gii-miin-in   emkwa:nes
   2-PST-give-INVERSE(LOCAL) spoon
         'I gave a spoon to you.'

As section 2 has shown at length, the Adyghe cislocative tracks interactions between IO and DO throughout paradigms of three-place-predicates. Hence, we conclude that the cislocative repair behaves like a genuine PCC repair, in addition to an inverse repair in applicative intransitives. Together with the fact that the cislocative indicates direction within intransitive clauses, recall (4), Adyghe provides evidence for an underlying core trigger for PCC and inverse effects which is related to point of view centers, thereby supporting the main claim put forth in Pancheva and Zubizarreta (2018). Glossing over the details of their theory, Pancheva and Zubizarreta (2018) propose that agents in inverse languages and goals/experiencers in PCC languages instantiate logophoric centers via spec-head Agree with v and Appl. The logophoric roles are tied to interpretable person features on the respective heads. Since Appl/v undergo downward Agree with the direct object as well, a number of adjustable filters ensure that only certain person combinations are allowed, depending on the PCC/inverse pattern in question. The authors specifically argue that the thematic role will be decisive in whether an argument can qualify as a logophoric center, implying that themes/patients are unsuitable to do so (Pancheva and Zubizarreta 2018: 1319-1320). This assumption derives the overall priviledged status of the indirect object in PCC scenarios and the subject in inverse systems. The universal connection between logophoric centers and specific types of theta roles, however, is not reflected in the Adyghe data since the person hierarchy relations are reversed for PCC configurations. This would imply that it is the theme/patient in Adyghe that can exceptionally serve as the point of view. In light of this unexpected cross-linguistic contrast, we will propose a different way to connect the directional nature of the repair to person restrictions.

In order to capture the distribution of the cislocative in applicative intransitives, ditransitives, and benefactives, we would like to submit that the cislocative acts as an abstract person licenser, in the spirit of Béjar and Rezac (2003, 2009). Together with the PLC in (36), the repair is predicted to occur in contexts where an argument has not undergone an Agree relation for person features with v. We adopt the *added probe strategy* (Béjar and Rezac 2009: 58-64) in which an additional probe is inserted if it leads to licensing of the subject or the direct object, respectively. This is exemplarily shown for the repair context from (39), repeated here in (54). As can be seen in the tree on the left, the IO has already fully matched the core probe on v, leaving the DO unlicensed. The added probe in the tree on right enables licensing of the DO, resulting in clitic doubling as well as a morphological reflex in the form of the directional marker. Specifically, we argue that the cislocative spells out a person probe in the context of another person probe, see (55). Note that the occurrence of the cislocative is independent of clitic doubling since both core probe and added probe trigger head adjunction of the respective clitic with each Agree cycle, in addition to matching their segments. Furthermore, we assume with Preminger (2009, 2014) that clitic doubling of the indirect objects prevents it from acting as an intervener for any further Agree operation, in this case with the direct object.[19,20]

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[19]A similar notion of repair is in principle also compatible with Deal (2020).

[20]Béjar and Rezac (2009: 56) assume that a probe can only be added upon projection, meaning v' is the locus for insertion of inverse person markers. While this assumption is compatible with the repair scenarios of applicative intransitives, it does not extend to PCC repairs since they do not involve cyclic expansion. There is nevertheless a way to constrain probe insertion for the Adyghe data, as person hierarchy restrictions arise via head-adjunction of clitics. Depending on whether adjunction involves projection and/or distinct labeling (Chomsky 1995, Hornstein and Nunes 2008), the original condition on probe insertion can be maintained.

(54)   *Repair for 2 > 1*
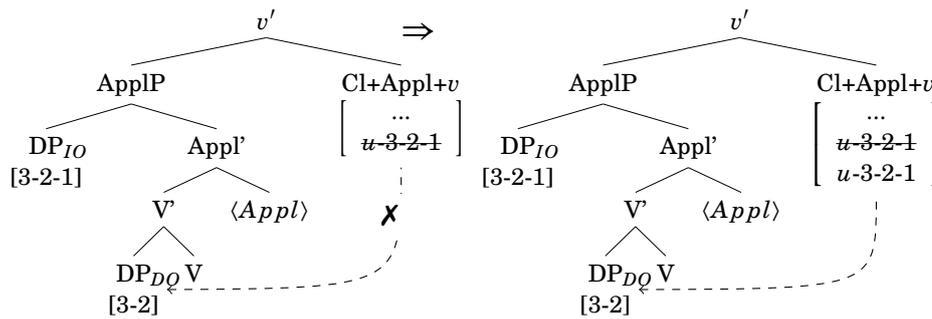
(55)   *VI for cislocative in Adyghe*

/ q^wə- / ↔ [*u*-3-2-1] / [*u*-3-2-1]

Interestingly, the notion of an abstract licenser can be extended to the intransitive contexts in (4), where the person licenser triggers the interpretive effect of direction marking. The addition of the cislocative in (4-b) adds the meaning component that the movement expressed by the verb is directed towards the perspective center of the utterance. We provide examples for the *come/go* alternation in (56) from the Shapsug dialect of Adyghe.

(56)   *Come/go alternation by the cislocative*
   a.   Se sə-k'o   / sə-q^{w}ə-k'o.
        I   1SG-go / 1SG-CIS-go
        'I am going / coming.'
   b.   Wo wə-k'o   / wə-q^{w}ə-k'o.
        I   2SG-go / 2SG-CIS-go
        'You are going / coming.'
   c.   Sine-r   ma-k'o / q^{w}ə-k'o.
        Sine-ABS DYN-go / CIS-go
        'Sine is going / coming.'

We propose that perspective centers can be analyzed as non-overt arguments that enter the computation for person licensing like any other argument. Hence, even in intransitive structures, the cislocative licenses an argument, albeit an implicit one, that is the addition of a perspective center. Since this is an argument in favour of the PLC, it also serves as an argument against PCC approaches that explicitly abandon the PLC, such as Coon and Keine (2020).

In a recent survey, Bhatt and Pancheva (2017) report on a variety of environments which indicate the presence of implicit arguments, including passives, middles, implicit arguments of nouns, arbitrary control, and evaluative predicates. Charnavel (2018, 2019) argues explicitly for deictic motion verbs such as the *come/go* alternation to require a silent logophor as an implicit argument, which in turn licenses exempt anaphora in French and Mandarin. One of the main motivations to question the silent pronoun analysis is its seeming resistance to be overtly realized as a pronoun (Partee 1989, Bylinina et al. 2015). Thus, perspectival restrictions on the goals of motion verbs are often encoded as presuppositions of the motion verbs themselves without assuming an implicit argument (Oshima 2006, Sudo 2015). Adyghe, being a *pro*-drop language, faces another version of this criticism since the implicit arguments in (56) do not trigger clitic doubling. Assuming that the implicit argument is introduced as an applied goal argument to motion verbs, we expect both the absolutive subject as well as the applied implicit object

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to be cross-referenced on the verb, akin to the applicative intransitive paradigms shown throughout this paper. One way of explaining the lack of clitic doubling can be found in Landau's (2010) distinction between weak and strong implicit arguments. While the former consists of a (possibly partial) set of ϕ-features, the latter is additionally equipped with a [D] feature. We could now speculate that the implicit object in Aydghe is of the weak type, thus requiring person licensing but not clitic doubling, as the latter presumably requires a [D] feature. A different way of implementing implicited arguments that might be more promising for Adyghe is proposed by Legate (2014) for the implicit agent of passives. Legate argues that a functional head introducing an implicit argument can be restricted by the ϕ-features of the argument without projecting it. The ϕ-features combine directly with the head instead of being introduced in the specifier. With (57), we show how this approach can be extended to Adyghe inverse/PCC patterns.

(57)   *Implicit goal argument following Legate (2014)*
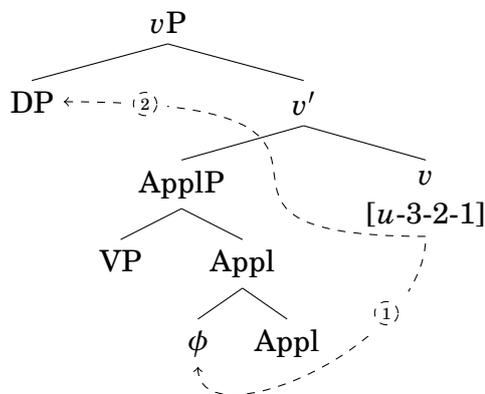
The implicit goal argument is introduced as a ϕ-feature bundle directly on Appl. This constellation arguably prevents cliticization by the clitic doubling probe on v. Nevertheless, the person feature is licensed and interacts with the higher subject for inverse marking. In the following, we will present some selected contexts that prove our point. In (58), we present a context that associates neither speaker nor hearer with the goal location of the motion verb. Hence, we do not predict the cislocative to occur, as there is no implicit argument present.

(58)   *Context: Speaker and addressee are both living in Izmir. The speaker is telling the addressee that the speaker is about to go to Istanbul.*

   ✓   sə-k'o.
      1SG-go
      'I am going.'

   #   sə-qʷə-k'o.
      1SG-CIS-go
      'I am coming.'

The contexts in (59) and (60) locate the speaker at the goal location of the motion activity. This implies that the implicit argument is encoded for 1st person. Thus, the v probe encounters a 1st person argument which values the probe fully on the first Agree cycle. An added probe, spelled out as the cislocative, licenses the 2nd person argument in (59) and the 3rd person argument in (60), respectively.

(59) *Context: The speaker lives in Izmir and the addressee in Istanbul. The speaker is telling the addressee that the addressee is about to come to Izmir.*

  # wə-k'o.
  2SG-go
  'You are going.'

  ✓ wə-qʷə-k'o.
  2SG-CIS-go
  'You are coming.'

(60) *Context: The speaker lives in Izmir and the addressee in Istanbul. Sine, a third person, lives in Ankara. The speaker is telling the addressee that Sine is about to come to Izmir.*

  # Sine-r   ma-k'o.
  Sine-ABS DYN-go
  'Sine is going.'

  ✓ Sine-r   qʷə-k'o.
  Sine-ABS CIS-go
  'Sine is coming.'

With this we conclude our discussion of the core PCC and inverse paradigms from section 2. In the next section, we will consider three additional paradigms that extend the empirical coverage in this paper.

6   Further insights into argument structure

In this section, we briefly look at the distribution of the cislocative for psych verbs and causatives, two paradigms that support our analysis of the argument structures we have proposed in this paper. Finally, we will address regular ERG-ABS transitive structures in section 6.3. For this paradigm, the results of our online study do not align with the judgements of our 3 core consultants. We discuss a possible extension to our theory.

6.1   Experiencer verbs

The paradigm in (61) demonstrates that the empirical generalization drawn for applicative intransitives can be extented to psych verbs, where the applicative is overtly realised by means of the marker ʃe-. More specifically, the experiencer argument patterns with the subject of applicative intransitives, as it is marked by the outermost prefix. The stimulus argument is marked by the innermost affix, thus forming a natural class with applied objects. In line with the pattern for applicative intransitives in (5), the cislocative marker appears whenever the stimulus argument outranks the experiencer on the person scale.

(61)   *Cislocative with experiencer verbs*

    a. Sə wə sə-p-ʃe-ʃtə
        I you 1SG-2SG-APPL-fear
        'I fear you.'   EXP: 1SG, STIM: 2SG, ✗ CIS

    b. Wə sə wə-qʷə-s-tʃe-ʃtə
        you I 2SG-CIS-1SG-APPL-fear
        'You fear me.'   EXP: 2SG, STIM: 1SG, ✓ CIS

    c. Sə kovid-im   sə-ʃe-ʃtə
        I Covid-OBL 1SG-APPL-fear
        'I fear Covid.'   EXP: 1SG, STIM: 3SG, ✗ CIS

    d. Ali-jər sə qʷə-s-tʃe-ʃtə
        Ali-ABS I CIS-1SG-APPL-fear
        'Ali fears me.'   EXP: 3SG, STIM: 1SG, ✓ CIS

    e. Wə a-xə-mə wə-a-ʃə-ʃtə
        you 3-PL-OBL 2SG-3PL-APPL-fear
        'You fear them.'   EXP: 2SG, STIM: 3SG, ✗ CIS

    f. Ali-jər wə qʷə-p-ʃe-ʃtə-ə
        Ali-ABS you CIS-2SG-APPL-fear
        'Ali fears you.'   EXP: 3SG, STIM: 2SG, ✓ CIS

As we have shown in (25) in section 4, 2nd person subjects do not display tense allomorphy on the cross-referencing prefix. Together with the prefix order and the distribution of the cislocative in (61), the data strongly suggest that (i) both arguments are clitic-doubled and (ii) the experiencer argument is merged structurally higher than the stimulus argument, as proposed by Belletti and Rizzi (1988) and Grimshaw (1990), see Temme (2019) for discussion. The analysis precedes as argued for in the previous sections for applicative intransitives.

6.2 Causatives

In Adyghe, the causative is morphologically marked by adding ʁə- to the stem. The causer argument is case-marked ergative and cross-referenced by the innermost person prefix. We take *wo* 'beat', an applicative intransitive we are already familiar with, and causativize it in (62). The causee is marked by absolutive, indexed by the outermost prefix, while the indirect object appears in oblique case. Causativized predicates pattern with ditransitives and benefactives in that the causer as the ergative argument is irrelevant for the occurrence of the cislocative. Instead, the distribution depends entirely on the person features of the the causee and the goal of the beating motion.

(62)   *Cislocative with causatives*

    a. Hasan-əm sə wə sə-wə-rə-ʁə-wo
        Hasan-OBL I you 1SG-2SG-3SG-CAUS-beat
        'Hasan is making me beat you.'   CSEE: 1SG, GOAL: 2SG, ✗ CIS

    b. Hasan-əm   wə sə wə-qʷə-sə-rə-ʁə-wo
        Hasan-OBL you I 2SG-CIS-1SG-3SG-CAUS-beat
        'Hasan is making you beat me.'   CSEE: 2SG, GOAL: 1SG, ✓ CIS

    c. Hasan-əm sə Ali-jəm sə-rə-ʁə-wo
        Hasan-OBL I Ali-OBL 1SG-3SG-CAUS-beat
        'Hasan is making me beat Ali.'   CSEE: 1SG, GOAL: 3SG, ✗ CIS

d. Hasan-əm Ali-jər   sə qʷə-sə-rə-ʁə-wo
   Hasan-OBL Ali-ABS I CIS-1SG-3SG-CAUS-beat
   'Hasan is making Ali beat me.'   CSEE: 3SG, GOAL: 1SG, ✓CIS

e. Hasan-əm wə Ali-jəm wə-rə-ʁa-wo.
   Hasan-OBL you Ali-OBL 2SG-3SG-CAUS-beat
   'Hasan is making you beat Ali.'   CSEE: 2SG, GOAL: 3SG, ✗ CIS

f. Sə Hasan-ər   wə qʷə-wə-sə-ʁə-wo
   I Hasan-ABS you CIS-2SG-1SG-CAUS-beat
   'I am making Hasan beat you.'   CSEE: 3SG, GOAL: 2SG, ✓ CIS

We take the exponent *rə-* for 3rd person causers as well as the position of the prefix as evidence for our claim that ergative case assignment triggers Parasitic Agree, resulting in copying of ϕ-features of the argument. Since we do not have the space to refine our analysis of the morphological causative in Adyghe, we stay agnostic as to the various implementations suggested in the rich literature on causation, see Harley (2008), Pylkkänen (2008), Alexiadou et al. (2015) among many others. What matters is that the emergence of the cislocative depends on the person specifications of clitics. Thus, we predict no interaction with person features of the causer.

6.3 Transitives

As already mentioned in section 2, Adyghe displays two productive strategies to produce bivalent predicates: intransitives with an applied object and regular transitives. Since the applicative marker is often covert in applicative intransitives, the main way to distinguish between the two types is by the order of prefixes on the verb (besides case marking on the arguments). Concretely, the agent is cross-referenced by the outermost prefix in applicative intransitive but by the innermost prefix in regular transitives, while the object's features are reflected by the innermost prefix in applicative intransitives but the outermost prefix in regular transitive predicates. Arkadiev (2020) notes that the cislocative is entirely absent in regular transitives – an observation that matches the judgements of our three main consultants of Shapsug Adyghe. The online study, however, revealed that there is speaker variation. The cislocative seems to be optional in contexts which would require a canonical inverse marker, shown in (63). For example, out of the speakers who participated in the study, 100% required the marker in the *2 > 1* contexts for applicative intransitives (5-b), but only 37.5% required the marker for transitives in the machting context (63-b). The empirical picture for regular transitives is thus strikingly different from the obligatory occurrence of the cislocative within applicative intransitives.

(63) *Optional cislocative with transitives*
   a. Se wo wə-sə-ɬeʁə.
      1SG 2SG 2SG-1SG-see
      'I see you.'   AG: 1SG, PAT: 2SG, ✗ CIS

   b. Wo se   sə-(qʷə-)wə-ɬeʁə.
      2SG 1SG 1SG-CIS-2SG-see
      'You see me.'   AG: 2SG, PAT: 1SG, (✓) CIS

   c. Se Hasan-ər   sə-ɬeʁə.
      1SG Hasan-ABS 1SG-see
      'I see Hasan.'   AG: 1SG, PAT: 3SG, ✗ CIS

d. Hasan-əm se sə-(qʷə-)ɬeʁə.
   Hasan-OBL 1SG 1SG-CIS-see
   'Hasan sees me.' AG: 3SG, PAT: 1SG, (✔) CIS

e. Wo Hasan-ər wə-ɬeʁə.
   2SG Hasan-ABS 2SG-see
   'You see Hasan.' AG: 2SG, PAT: 3SG, ✗ CIS

f. Hasan-əm wo wə-(qʷə-)ɬeʁə.
   Hasan-OBL 2SG 2SG-CIS-see
   'Hasan sees you.' AG: 3SG, PAT: 2SG, (✔) CIS

Since the subject is assigned ergative case, we expect it to be irrelevant for the distribution of the cislocative. With everything set up so far, the marker should be absent within transitive paradigms, as only the direct object requires person licensing via clitic doubling. For the rest of this section, we will suggest one possible avenue to explain the speaker variation.

Suppose there is an implicit goal argument also present in transitives, parallel to the intransitive structure in (57). This goal argument is co-indexed with the agent. Under standard locality considerations, for example as made explicit in Rackowski and Richards (2005), both implicit argument and direct object are equidistant to v.[21] As can be seen in the illustration in (64), this configuration will not lead to the insertion of an added probe for any person combinations since the probe can in principle choose which goal it will target first.

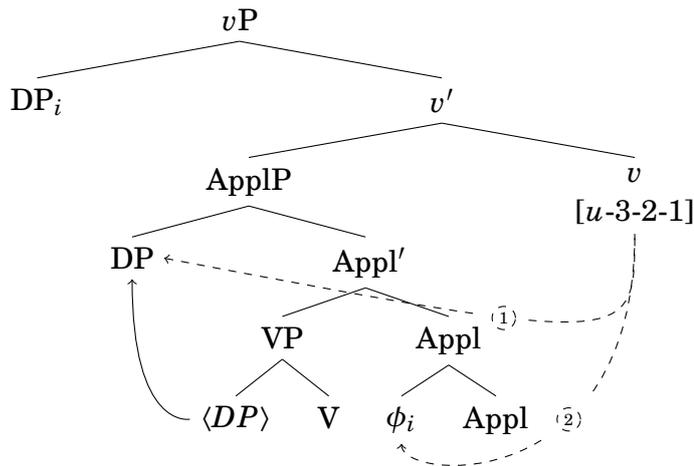(64)   *Implicit goal argument in transitives*
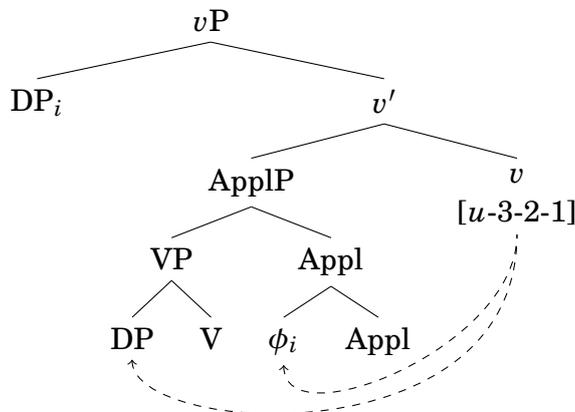
We now speculate that the speakers of our study who require a cislocative in the contexts shown in (63), display obligatory object shift along the lines of (65). Under this assumption, v will be closer to the direct object than to the implicit argument co-indexed to the agent. Thus, a probe will be added on v whenever the patient argument outscopes the agent on the person scale, leading to the distribution in (63).

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[21]Rackowski and Richards (2005: 579):

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

(65)   *Grammar for cislocative with transitives*

$$
\begin{array}{c}
v\text{P} \\
\diagup \quad \diagdown \\
\text{DP}_i \qquad v' \\
\diagup \quad \diagdown \\
\text{ApplP} \qquad v \\
\diagup \quad \diagdown \qquad [u\text{-}3\text{-}2\text{-}1] \\
\text{DP} \qquad \text{Appl}' \\
\diagup \quad \diagdown \\
\text{VP} \qquad \text{Appl} \\
\diagup \diagdown \qquad \diagup \diagdown \\
\langle DP \rangle \quad \text{V} \quad \phi_i \quad \text{Appl}
\end{array}
$$

It is worth pointing out that the type of object shift the analysis permits for this cluster of speakers does not extend to PCC contexts, as we do not find canonical PCC in Adyghe. The difference to transitive contexts lies in the fact that for PCC scenarios the indirect object is fully projected in the specifier of ApplP. This indicates that object shift to Spec,ApplP either depends on the number of specifiers or is always order preserving.

7   Conclusion

In this paper, we present an intricate set of PCC and inverse patterns from the North-West Caucasian language Adyghe, resulting from elicitations with 3 native speakers of Shapsug Adyghe and an online survey including various dialects of the Circassian languages. The repair for canonical inverse scenarios in applicative intransitives and reverse PCC scenarios takes the form of a cislocative marker in Adyghe. We provide independent evidence coming from tense-sensitive allomorphy which indicates that the marker indexing the ergative argument results from ϕ-Agree, while the markers indexing other arguments result from clitic doubling. Consequently, we argue that the person features of ergative arguments do not take part in the computation of PCC and inverse effects, by making use of feature stacks and Parasitic Agree. Our analysis is superior to previous analyses of the pre-verbal morphology in Adyghe, as it ties the verbal prefix order to the distribution of the cislocative marker. The linear order follows directly from the feature stack order that is motivated independently by inverse/PCC effects. More broadly, we provide a way to implement the use of a cislocative marker as a repair for person hierarchy restrictions. We claim that directional markers can in fact be analyzed as abstract person licensers, with the potential to indicate implicit goal arguments for motion verbs. In doing so, we provide genuine evidence for the syntactic projection of implicit arguments, as most diagnostics, including binding, control, predication, and ellipsis, are inconclusive in this regard.

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