(Almost) everything is oblique in West Circassian

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Abstract

This paper provides a novel analysis of grammatical function marking in West Circassian (West Caucasian, Russia), a polysynthetic language whose syntactic features do not quite fit the standard types of polysynthesis described in the literature. We argue that there is a straightforward connection between GF status, verbal indexing, and case marking. Namely, subjects are Absolutive-marked and never indexed, while all other core arguments are indexed and marked by Oblique case. We show that the description of argumenthood in West Circassian only requires the features SUBJ, OBJ_θ and OBL_θ; OBJ is not needed. SUBJ is most often the $\mathcal{S}/\mathcal{P}$ argument, but 1st and 2nd person pronouns, being indexed on the verb, map to OBJ_θ in all semantic roles. Therefore, GF assignment in West Circassian is dependent on person, and it is possible to have subjectless sentences. We provide a sketch formalization of this analysis and discuss its wider implications.

1 Introduction

While grammatical functions are viewed as theoretical primitives in LFG, the exact patterns of mapping from semantic roles to GFs, and the extent to which languages may choose to use elements of the universally available inventory of GFs, are the subject of much debate. It is widely accepted that languages with non-accusative alignment types can have a GF mapping that differs from that in syntactically accusative languages; for instance, Manning (1996) proposes that SUBJ and OBJ (CORE in his terminology) in ergative languages receive an inverse mapping; namely, the absolutive argument is mapped to SUBJ, while the ergative argument is OBJ/CORE. Falk (2006) splits the grammatical function SUBJ into two functions: $\widehat{\text{GF}}$ (the most prominent argument, corresponding to the traditional $\mathcal{A}/\mathcal{S}$ "subject") and PIV (responsible for licensing long-distance dependencies). The identification of PIV with either $\widehat{\text{GF}}$ or OBJ produces the traditional syntactically accusative/ergative typology, but other patterns of PIV assignment are possible and indeed, according to Falk, attested in various languages of the world.

In this paper, we argue that the data of West Circassian, a polysynthetic West Caucasian language of southern Russia, suggest a complex relationship between case marking, verbal indexing and syntactic behaviour that, in LFG terms, should be analyzed as a rather unusual pattern of GF assignment. Specifically, we suggest that verbal[1] indexing and case marking directly correlate with GF status: all

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[1]West Circassian has no well-defined lexical class of verbs as opposed to nouns and adjectives;

indexed arguments have the grammatical function $\textsc{obj}_\theta$ and are Oblique-marked; the sole non-indexed argument marked by Absolutive is SUBJ;[2] all other (non-indexed and non-Absolutive) arguments are marked by postpositions. This analysis entails some surprising effects, such as the fact that, since 1st and 2nd person $\mathcal{S}/\mathcal{P}$ arguments are always indexed and Oblique-marked (where allowed by the morphology), they should be treated as $\textsc{obj}_\theta$; thus, GF assignment is dependent on person, and sentences without SUBJ are possible. The existence of such sentences is consistent with earlier claims, such as Kibort (2006), but the person-motivated, rather than lexical, split is highly unusual.

The paper is organized as follows. In section 2, we describe the West Circassian pattern of case marking and verbal indexing. In 3, we describe the syntactic properties of the core arguments, demonstrating that indexing and case marking correlate with certain syntactic diagnostics that reveal their GF status. In 4, we provide a generalization of our analysis with respect to different types of arguments and case marking patterns in West Circassian.

2 Indexing and case marking in West Circassian

2.1 Indexing

West Circassian (also known as Adyghe, although the same term is applied to Circassian languages – West Circassian and Kabardian – in general) is a polysynthetic language which uses both case marking and verbal indexing of core arguments.[3] Indexing is expressed by a set of verbal prefixes, whose main allomorphs are shown in Table 1. The system of indexing is ergative: there is a set of absolutive indices that refer to $\mathcal{S}/\mathcal{P}$ arguments, and an ergative set for coindexing ergative ($\mathcal{A}$) arguments. Markers labeled as "IO" in Table 1 are used together with applicative prefixes to coindex arguments of various oblique semantic roles (recipients, goals, locations, etc.); they are largely identical to ergative markers. Importantly, 3SG and 3PL absolutive markers are left unmarked.[4]

the terms *verb* and *verbal* are thus used informally, to refer to predicative forms. Statements about verbs equally apply to nominals serving as clausal predicates.

[2]Falk's (2006) split subject analysis is not needed for West Circassian, because while there is some evidence for syntactic processes that specifically target $\widehat{\text{GF}}$ ($\mathcal{A}/\mathcal{S}$) in Lander and Testelets (2017), it is unclear and could also have a semantic explanation.

[3]In what follows, we will sometimes use the typological term "flagging" (Haspelmath 2019) to refer to Absolutive/Oblique case marking. It is in fact debatable whether Absolutive and Oblique should be treated as case markers proper, as will be discussed below.

[4]This is sometimes described in the literature as zero marking. As we show in this paper, this view is incorrect: 3rd person $\mathcal{S}/\mathcal{P}$ arguments are indeed *not* indexed on the verb, which correlates with their flagging and syntactic properties.

Table 1: West Circassian argument indexing prefixes

	ABS	IO	ERG
1SG	*sə-*	*s-*	
1PL	*tə-*	*t-*	
2SG	*wə-*	*p-/w-*	
2PL	*ŝʷə-*	*ŝʷ-*	
3SG	—	*∅-*	*ə-/jə-*
3PL	—	*a-*	
REL/RFL	*zə-*		

2.2 Case marking

Overt case marking in West Circassian is optional (depending on referentiality, see Arkadiev and Testelets 2019). When it appears, the system is two-term: either the Absolutive (*-r*, often called Nominative) or the Oblique (*-m*, also *-š'/j* with certain pronouns and *-me* in the plural; often called Ergative) is used. The Instrumental and Adverbial, also shown in the table, are peripheral cases that display somewhat different properties compared to the Absolutive and Ergative; they are not generally used to mark core arguments, but the Adverbial marks the internal head in relative clauses (see section 3.1.1). Under the traditional view of the West Circassian flagging system (see e.g. Rogava and Keraševa 1966; Kumakhov and Vamling 2019), the Absolutive is used on $\mathcal{S}/\mathcal{P}$ arguments, while the Oblique is used on $\mathcal{A}$, as well as on all arguments that have been introduced by applicative prefixes. As an example of both flagging and indexing, see (1).[5]

(1) *ç'ale-m*$_i$ *pŝaŝe-m*$_j$ *laʁe-xe-r* *we*$_k$
boy-OBL girl-OBL dish-PL-ABS you.SG

qə- b-$_k$*də- ∅-*$_j$*r- jə-*$_i$ *tə -ʁe -x*
DIR-2SG.IO-COM-3SG.IO-DAT-3SG.ERG-give-PST-PL

'The boy gave the dishes to the girl with you (sg.).'

In this example, the 3rd person $\mathcal{P}$, 'dishes', is not indexed in the verb but flagged by Absolutive case; the 3rd person agent, 'boy', is flagged by Oblique and coindexed by the ergative prefix *jə-*. Two additional arguments – comitative, 'with you', and recipient, 'to the girl', – are introduced by applicative prefixes used together with "indirect object" indices. The recipient is also expressed

[5]The formatting of examples follows the Leipzig Glossing Rules (https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf), using the following abbreviations: ABS – absolutive; ADV – adverbial case; ADD – additive; COM – comitative; DAT – dative; DIR – directive (verbal orientation marker); ERG – ergative (indexing prefix); FUT – future tense; IMP – imperative; INS – instrumental; IO – indirect object; LOC – locative; MOD – modal; NEG – negative; OBL – oblique; PL – plural; PST – past tense; RE – refactive; REL – relative; SG – singular.

by an independent NP that is flagged by Oblique. Crucially, the applicatives in West Circassian are quite different from their namesakes in many other languages (Bresnan and Moshi 1990): namely, they do not change the syntactic status of the core arguments, but merely introduce additional secondary objects into the verbal valency frame.

Non-$\mathcal{S}/\mathcal{P}$ arguments that are not indexed on the verb are mainly expressed by postpositional phrases[6] where the complement is marked by Oblique, see (2).

(2) *ʔeše-deʁʷ-jə* *ɯ-jə-šʾəčʾaʁ-ep* ***mə*** ***ʔʷefə-m*** ***paje***
weapon-good-ADD 2SG.IO-POSS-necessity-NEG this deed-OBL for
'You don't even need a good weapon **for this deed**.'

3 Syntactic properties of arguments

3.1 Subjecthood

A natural question that arises here is how exactly flagging and indexing are related to grammatical function assignment and subjecthood. West Circassian has a rich inventory of valency-increasing operations but has no real valency-decreasing operations (Lander and Letuchiy 2017); therefore, there are no constructions where it could be argued, for example, that the direct object is promoted to subject status. On the syntactic ergativity of valency-changing operations, also see Letuchiy (2012). Overall, it seems that only the absolutive ($\mathcal{S}/\mathcal{P}$) can be singled out as having a special subject (pivot) function; for an overview of arguments in favour of syntactic ergativity, see Ershova (2019). All other arguments can be treated as secondary objects or obliques, as argued in Lander (2005). This can be demonstrated by two syntactic tests: the behaviour of internally-headed relativization and the "raising-like" construction with the verb 'must'.[7]

3.1.1 Internally-headed relativization

West-Circassian has both internally- and externally-headed relative clauses (thoroughly described in Lander 2012; also see Lander and Daniel 2019 for an overview of the use of relative prefixes in these constructions). Externally-headed relative clauses are prenominal, where NP_{rel} is not expressed by a full NP (3a); the external head receives the Oblique case from the matrix verb. In contrast, the head is inside the relative clause in internally-headed relative clauses; it is always marked by the Adverbial suffix. As seen in (3b), it is the verb of the relative clause that receives external case marking.

[6] With the exception of temporal, and partly locative, expressions, which can also be marked by Oblique while not being indexed.

[7] There are also some other constructions that contrast between the absolutive and other arguments which include very specific constraints on relativization not discussed here, see Lander (2010), Lander (2012), and Ershova (2019) for details.

(3) a. [*a-čʼe* *ḳʷe-šʼt*] ***çəfə-m*** *sə-λ-e-χʷə*
that-INS go-FUT person-OBL 1SG.ABS-LOC-DYN-search

b. [*a-čʼe* ***çəf-ew*** *ḳʷe-šʼtə-**m***] *sə-λ-e-χʷə*
that-INS person-ADV go-FUT-OBL 1SG.ABS-LOC-DYN-search
'I am looking for **a person** [who would go there.]'
(Arkadiev et al. 2009)

The word order in internally-headed relative clauses is somewhat more restricted than in main clauses. Namely, the Adverbial-marked internal head normally cannot separate the Absolutive-marked NP from the verb (Beliaeva 2006; Lander 2010; Lander 2012):

(4) a. *təʁʷaḳʷ-ew* ***dəŝe-r*** *zə-ʔe.pə-teqʷə-ʁe-r*
thief-ADV gold-ABS REL.IO-LOC-disperse-PST-ABS
'the thief who dropped **the gold**', lit. 'out of whose hands the gold fell'

b. ****dəŝe-r*** *təʁʷaḳʷ-ew* *zə-ʔe.pə-teqʷə-ʁe-r*
gold-ABS thief-ADV REL.IO-LOC-disperse-PST-ABS

No such restrictions exist for OBL-marked NPs, regardless of their semantic role:

(5) ***thamate-m*** *qebar-ew* *q-ə-ʔʷete-šʼtə-m*
chief-OBL news-ADV DIR-3SG.ERG-tell-FUT-OBL
'the news that **the chief** would tell' (Lander 2012, 250)

This means that the Absolutive noun phrase has a designated position somewhere in the clause structure (at least in internally-headed relative clauses), at a relatively low level, while the position of Oblique-marked arguments is free. While the rule itself could be explained in terms of case, it is more economical to intepret it in terms of a privileged syntactic status of the Absolutive NP, with Absolutive merely serving to flag the GF SUBJ: Case assignment in West Circassian is always fully predictable from semantic roles and verbal marking, and it is never lexically idiosyncratic.

3.1.2 Raising-like construction

Another construction that displays the pivot status of the Absolutive is the raising-like construction with the verb 'must' (Testelets 2009, 688). This verb takes an Adverbial-marked complement clause and may (for some speakers) agree in number with the Absolutive argument of the subordinate clause:[8]

[8]Predicates in West Circassian may always – optionally – agree with Absolutive arguments of their own clauses in number. This could in itself be taken as a piece of evidence in favour of the subject status of the Absolutive, although clause-internal agreement by itself may be case-driven.

(6) a. ***a-xe-r*** *qe-ŝʷe-n-x-ew* *š'ə.tə-**x***
that-PL-ABS DIR-dance-MOD-PL-ADV must-PL
'**They** should dance.'

b. *a-š'* ***pjəsme-xe-r*** *ə-txə-n-x-ew* *š'ə.tə-**x***
that-OBL letter-PL-ABS 3SG.ERG-write-MOD-PL-ADV must-PL
'S/he must write **letters**.'

c. ****a-xe-me*** *ʔʷef* *a-ṣ̂ə-n-ew* *š'ə.tə-**x***
they-PL-OBL.PL work 3PL.ERG-do-MOD-ADV must-PL
(intended: '**They** should work.')

This rule could also be formulated in terms of case rather than grammatical function ("agree with the clause-level absolutive, or with the absolutive of your COMP"). However, given the lack of independent evidence in favour of the pivot status of other arguments, this is more complex than simply stating that the Absolutive-marked NP is the subject. The behaviour of this construction also converges with the behaviour of internally-headed relative clauses. Furthermore, according to Falk's (2006, 78) Pivot Condition, all paths that link arguments across clauses must terminate in a PIV. Hence, long-distance agreement (or functional control) by itself presents enough evidence in favour of the pivot status of the Absolutive.[9]

3.1.3 Analysis

There are two ways in which the pivot status of the Absolutive argument may be analysed in LFG. The simpler would be, in terms of Manning (1996), to treat it as the SUBJ. A more complex analysis, following Falk (2006), is to postulate that the Absolutive is PIV, while maintaing that all clauses also have the $\widehat{\text{GF}}$ function that corresponds to the traditional notion subject ($\mathcal{A}/\mathcal{S}$). In this case, PIV would be identified with $\widehat{\text{GF}}$ in intransitive clauses and with PIV in transitive ones.

The latter solution is, of course, technically possible for West Circassian, but there are no good examples of constructions which are syntactically $\widehat{\text{GF}}$-oriented. Reflexives may seem to target $\mathcal{S}/\mathcal{A}$, but they are better described as targeting the more agent-like argument. Specifically, in the Potential construction, where Ergative indexing of $\mathcal{A}$ is replaced by IO indexing, $\mathcal{A}$ still has binding priority over $\mathcal{P}$.

Furthermore, adopting Falk's (2006) analysis implies maintaining the traditional grammatical function OBJ as opposed to $\widehat{\text{GF}}$ and OBJ_θ. However, this creates an artificial split between $\mathcal{S}/\mathcal{A}$ ("ergative") arguments (which would have to be $\widehat{\text{GF}}$) and other indexed arguments (which would have to be OBJ_θ). In morphological terms, the only difference is that the latter require applicative prefixes, while

[9] A full analysis of the construction with the verb 'must' is outside the scope of this paper. Regardless of whether it is a case of long-distance agreement or functional control, the data clearly present evidence in favour of the pivothood of the Absolutive.

the former is indexed directly; the morphology itself is largely identical (see Table 1). In syntactic terms, we have seen above that the only distinction that can be drawn among core arguments in West Circassian is two-way: between Absolutive and Oblique-marked arguments. Since the number of the latter in a clause is not syntactically restricted, and they always receive indexing depending on their semantic role, they should be viewed as semantically restricted objects (OBJ_θ). Therefore, using OBJ or $\widehat{\text{GF}}$ is redundant; all that is required is a three-way distinction:[10]

SUBJ/PIV $\mathcal{S}/\mathcal{P}$, Absolutive-marked, not indexed on the verb;

OBJ_θ Oblique-marked, indexed on the verb (both $\mathcal{A}$ and introduced by applicatives);

OBL_θ postposition-marked, not indexed on the verb.

Abandoning the distinction between OBJ and OBJ_θ may seem like a radical move, given that, in most LFG work, OBJ_θ only appears in the presence of a primary object (OBJ). However, such analyses have been proposed before. For example, Dahlstrom (2009) claims that some verbs in Meskwaki (Algonquian) select only SUBJ and OBJ_θ. More radically, Börjars and Vincent (2008) propose abandoning the distinction altogether, treating all objects as OBJ_θ. We do not go so far as to claim that OBJ is universally useless as a GF; what we claim is that it is unnecessary for West Circassian, which only specially distinguishes the subject among the term arguments.

Thus, (1), repeated here, may be analyzed as having the f-structure in (7).

[1, repeated] *ç̣'ale-m$_i$ pŝaŝe-m$_j$ laʁe-xe-r we$_k$*
boy-OBL girl-OBL dish-PL-ABS you.SG

qə- b-$_k$də- ∅-$_j$r- jə-$_i$ tə -ʁe -x
DIR-2SG.IO-COM-3SG.IO-DAT-3SG.ERG-give-PST-PL

'The boy gave the dishes to the girl with you (sg.).'

[10]Indexed arguments could also be viewed as OBL_θ, which would perhaps be more palatable to a traditional view, because having OBJ_θ without OBJ seems unusual. However, OBL_θ is required to distinguish non-indexed arguments – usually expressed by PPs – from Absolutive and Oblique arguments. Furthermore, verbal coindexing is a standard criteria for term (direct, non-oblique) status, see Dalrymple, Lowe, and Mycock (2019, 16).

(7)

$$\begin{bmatrix}
\textsc{pred} & \text{`give}\langle \textsc{subj}\ \textsc{obj}_{\textsc{ag}}\ ,\ \textsc{obj}_{\textsc{goal}}\ ,\ \textsc{obj}_{\textsc{com}} \rangle\text{'} \\
\textsc{tense} & \textsc{past} \\
\textsc{dir} & q\text{ə} \\
\textsc{subj} & \begin{bmatrix} \textsc{pred} & \text{`dish'} \\ \textsc{pers} & 3 \\ \textsc{num} & \textsc{pl} \end{bmatrix} \\
\textsc{obj}_{\textsc{ag}} & \begin{bmatrix} \textsc{pred} & \text{`boy'} \\ \textsc{pers} & 3 \\ \textsc{num} & \textsc{sg} \end{bmatrix}_i \\
\textsc{obj}_{\textsc{goal}} & \begin{bmatrix} \textsc{pred} & \text{`girl'} \\ \textsc{pers} & 3 \\ \textsc{num} & \textsc{sg} \end{bmatrix}_j \\
\textsc{obj}_{\textsc{com}} & \begin{bmatrix} \textsc{pred} & \text{`PRO'} \\ \textsc{pers} & 2 \\ \textsc{num} & \textsc{sg} \end{bmatrix}_k
\end{bmatrix}$$

In (7), it can be seen that the grammatical function OBJ is not used. $\mathcal{P}$ is SUBJ, while $\mathcal{A}$ is $\textsc{obj}_{\textsc{ag}}$, not different from other Oblique-marked, indexed arguments.

3.2 1st and 2nd person arguments

Thus far, our analysis has presented a rather regular, straigtforward relationship between case-marking, verbal indexing and GF status in West Circassian. However, there is one seeming exception from this pattern: 1st and 2nd person arguments. As seen in Table 1, unlike 3rd person arguments which are unmarked when $\mathcal{S}/\mathcal{P}$ (i.e. SUBJ in our analysis), these are always overtly indexed on the verb, even when corresponding to $\mathcal{S}/\mathcal{P}$. Furthermore, 1st and 2nd person arguments are never marked by either Oblique or Absolutive in the core functions:

(8) *we* *sə-b-de-haš'xə-ʁ-ep* *se*
you.SG 1SG.ABS-2SG.IO-LOC-laugh.at-PST-NEG I
'I did not laugh at you.'

If uniformity of semantic role to GF mapping is assumed, we can conclude that full pronouns do not morphologically distinguish case, but are $\textsc{obj}_{\theta}$ when $\mathcal{A}$ (as the agent of 8) and SUBJ when $\mathcal{S}/\mathcal{P}$ (as the object of 8), just as 3rd person NPs. However, unlike full NPs, they are always indexed. This would mean that 1st and 2nd person pronouns are exceptions from the generalization on the direct connection between GF status, case marking and indexing.

The actual status of 1st and 2nd person $\mathcal{S}/\mathcal{P}$ is more complicated, however. First, if a lexical noun, quantifier or adjective is used in place of the full pronoun, or as a postposed modifier of the pronoun, it always stands in the Oblique, even where the Absolutive is expected:

(9) *zeč'e-**m**-jə* *tə-adəg*
all-OBL-ADD 1PL.ABS-Circassian
'We all are Circassians.'[11]

(10) a. *te* *č'ale-xe-**m*** *tə-qe-ḳ^{w}a-ʁ*
we boy-PL-OBL 1PL.ABS-DIR-GO-PST
'We boys came.'

b. **te* *č'ale-xe-**r*** *tə-qe-ḳ^{w}a-ʁ*
we boy-PL-ABS 1PL.ABS-DIR-GO-PST

(Arkadiev et al. 2009, 81)

Thus, lack of case marking on pronouns is a fact of morphology. However, when the syntactic context allows overt case marking to surface, it contradicts our expectations in always being Oblique.

Second, unmarked 1st and 2nd person pronouns in $\mathcal{S}/\mathcal{P}$ position allow an internal head to appear between them and the predicate of the relative clause – something which, as we just saw in section 3.1.1, is not allowed for Absolutive (SUBJ) arguments:

(11) [***we*** *çəf-ew* *wə-zə-λeʁ^{w}ə-ʁe-r*] *ʔ^{w}əč'ə-ž'ə-ʁ*
thou person-ADV 2SG.ABS-REL.ERG-see-PST-ABS leave-RE-PST
'The man who saw **you** left.' (Beliaeva 2006)

In the logic of our proposal, (9) and (11) show that 1st and 2nd person $\mathcal{S}/\mathcal{P}$ arguments, regardless of their overt expression, are thematically restricted objects (OBJ_θ). This means that intransitive clauses with 1st/2nd person $\mathcal{S}$ arguments, such as (9), have no SUBJ, but only an OBJ_{ABS},[12] as in (12).

(12)
$$\begin{bmatrix} \text{PRED} & \text{'Circassian}\langle \text{OBJ}_{\text{ABS}} \rangle\text{'} \\ \text{TENSE} & \text{PRES} \\ \text{OBJ}_{\text{ABS}} & \begin{bmatrix} \text{PRED} & \text{'PRO'} \\ \text{SPEC} & \textit{all} \\ \text{PERS} & 1 \\ \text{NUM} & \text{PL} \end{bmatrix} \end{bmatrix}$$

Hence, the Subject Condition (Bresnan and Kanerva 1989) does not hold in West Circassian, but this idea, in itself, is not new. For instance, in Falk's (2006, 184) analysis of Choctaw, verbs like 'afraid' select only OBJ_θ and OBJ. Kibort (2006)

[11] As suggested by Ash Asudeh (p.c.), the syntactic peculiarity of this sentence could be expressed in English as *Circassians us all*, with the difference that *all* in West Circassian is not an appositive modifier of *us* but an oblique NP occupying an argument position.

[12] Although Absolutive is not a proper thematic role, we use this label as a cover term for $\mathcal{S}$ and $\mathcal{P}$. In this example, using THEME is also possible, but would require mapping the agreement prefix to different grammatical functions with transitive and intransitive verbs, somewhat complicating the analysis.

analyses certain impersonal sentences in Polish as being truly subjectless. What distinguishes West Circassian from these cases is that this mapping pattern is not lexical, but determined by the person of the verb's arguments. Such a person-dependent GF mapping has not, to our knowledge, previously been proposed in the literature.

4 Discussion

4.1 Generalization

The discussion above, and our analysis, can be summarized in the following way. Grammatical function assignment in West Circassian follows a person-based split. 3rd person arguments are assigned to SUBJ if $\mathcal{S}/\mathcal{P}$ and to OBJ$_\theta$ if $\mathcal{A}$ or introduced by an applicative prefix. In the 1st and 2nd persons, the mapping pattern is different: all core arguments and applicative-introduced arguments are mapped to OBJ$_\theta$. For all persons, oblique arguments that are not introduced by applicatives have the status of OBL$_\theta$. This pattern is summarized in Table 2.

Table 2: GF mapping in West Circassian

	$\mathcal{S}/\mathcal{P}$	$\mathcal{A}$	**appl.**	**obl.**
1/2p.	OBJ$_\theta$	OBJ$_\theta$		OBL$_\theta$
3p.	SUBJ			

Morphosyntactic encoding is almost completely determined by GF status.[13] SUBJs are case-marked by Absolutive and never indexed on the verb. OBJ$_\theta$s are case-marked by Oblique and always indexed on the verb. OBL$_\theta$s are marked by postpositions and never indexed on the verb. This is summarized in Table 3.

Table 3: Morphosyntactic marking in West Circassian

	case	**index**
SUBJ	Absolutive	✘
OBJ$_\theta$	Oblique	✓
OBL$_\theta$	postposition	✘

[13]The only exception is the existence of indexed PPs (Lander 2015; Lander 2016, 3509), which we do not discuss here. This would be relatively straightforward to formally implement, but would make the generalizations on argument mapping and case marking more complicated.

4.2 Formalization

A full LFG formalization of this analysis requires a more thorough formalization of West Circassian morphology, which is not currently available. Nevertheless, a set of rules and definitions can be sketched using sublexical morphology as used e.g. in Bresnan et al. (2016). The verb consists of the base stem (which we will not analyze at this point) together with a number of coreferencing prefixes:[14]

(13) $\mathrm{V} \rightarrow \underset{\substack{(\uparrow \textsc{obj}_{\textsc{abs}})=\downarrow \\ (\downarrow \textsc{pers}) =_{\mathrm{c}} 1|2}}{(\mathrm{V}_{\mathrm{cref}})} \quad \underset{\uparrow=\downarrow}{(\mathrm{V}_{\mathrm{dir}})} \quad \underset{(\uparrow(\downarrow \textsc{pcase}))=\downarrow}{\mathrm{V}_{\mathrm{appl}}{}^{*}} \quad \underset{(\uparrow \textsc{obj}_{\textsc{ag}})=\downarrow}{(\mathrm{V}_{\mathrm{cref}})} \quad \underset{\uparrow=\downarrow}{\mathrm{V}_{\mathrm{stem}}}$

The three $\mathrm{V}_{\mathrm{cref}}$ nodes stand for the positions of prefixes that can index arguments without additional applicative morphology. These are, first, the 1st and 2nd person $\mathcal{S}/\mathcal{P}$ arguments; second, the "ergative" prefix (ERG in 1).[15] The annotations on the nodes ensure that only $\textsc{obj}_{\theta}$ arguments receive verbal indexing.

The internal structure of the $\mathrm{V}_{\mathrm{appl}}$ node is akin to a PP. It consists of a $\mathrm{V}_{\mathrm{cref}}$ node[16] followed by a $\mathrm{V}_{\mathrm{post}}$ node:

(14) $\mathrm{V}_{\mathrm{appl}} \rightarrow \mathrm{V}_{\mathrm{cref}}\ \mathrm{V}_{\mathrm{post}}$

Turning to the lexical content of these nodes, $\mathrm{V}_{\mathrm{stem}}$ introduces the PRED value and morphosyntactic features such as tense, mood, etc.

(15) *tə-ʁe-x* $\mathrm{V}_{\mathrm{stem}}$ $(\uparrow \textsc{pred}) = \text{`give } \langle \textsc{obj}_{\textsc{ag}}\ \textsc{subj}\ \textsc{obj}_{\textsc{goal}}\ \textsc{obj}_{\textsc{com}} \rangle\text{'}$
$(\uparrow\ \textsc{tense}) = \textsc{past}$
$(\uparrow\ \textsc{subj}\ \textsc{num}) = \textsc{pl}$

The cross-reference prefixes act as agreement markers and, optionally, as incorporated pronouns (since this is a *pro*-drop language):

(16) *ə-* $\mathrm{V}_{\mathrm{cref}}$ $((\uparrow \textsc{pred}) = \text{'PRO'})$
$(\uparrow \textsc{pers}) = 3$
$(\uparrow \textsc{num}) = \textsc{sg}$

Finally, $\mathrm{V}_{\mathrm{post}}$ nodes define the PCASE feature that ensures correct grammatical function mapping in the way that it is usually done in LFG analyses of semantically null/case-like adpositions. For example, the following lexical entry defines *de-* as a comitative applicative prefix:

(17) *de-* $\mathrm{V}_{\mathrm{post}}$ $(\uparrow \textsc{pcase}) = \textsc{obj}_{\textsc{com}}$

At clause level, we assume a non-configurational structure:[17]

[14]The role of the "directive" prefix ($\mathrm{V}_{\mathrm{dir}}$) is not relevant here. In general, the view of West Circassian morphology presented herein is simplified and only serves expository purposes.

[15]Note that the latter prefix does not have a person specification, because markers of any person can appear in this position; it is only the absolutive position that is reserved for 1st and 2nd person arguments only.

[16]We ignore the minor morphological differences between "direct object" and "indirect object" prefixes in Table 1 for the purposes of this discussion.

[17]This is an oversimplification, given the facts described in section 3.1.1. However, a full analysis of West Circassian clause structure requires a separate study that is beyond the scope of this paper.

(18) S → $\underset{(\uparrow \text{GF})=\downarrow}{\text{NP}^*}$ $\underset{\uparrow=\downarrow}{\text{V}}$

Nouns have a simple internal structure that consists of the stem and an optional "case" (Absolutive/Oblique) marker. The stems only introduce PRED and NUM features.[18]

(19) N → $\underset{\uparrow=\downarrow}{\text{N}_{\text{stem}}}$ $\underset{\uparrow=\downarrow}{\text{N}_{\text{case}}}$

(20) *č'ale* N_{stem} $(\uparrow \text{PRED}) = \text{'boy'}$
$(\uparrow \text{NUM}) = \text{SG}$

Absolutive and Oblique markers directly encode the grammatical function of the NP (SUBJ for "Absolutive" *-r*, OBJ_θ for "Oblique" *-m*), in a Constructive Case (Nordlinger 1998) fashion:

(21) *-m* N_{case} $(\text{OBJ}_\theta \uparrow)$

(22) *-r* N_{case} $(\text{SUBJ} \uparrow)$

This simple system correctly describes the case marking and indexing pattern when both are present. Unfortunately, it has a serious problem: namely, it does not make verbal indexing of Oblique arguments obligatory, licensing ungrammatical examples such as (23b) alongside the grammatical (23a):

(23) a. *č'ale-m* *apč'ə-r* ***ə-****q*^{w}*ətа-*ʁ
boy-OBL glass-ABS 3SG.ERG-break-PST
'The boy broke the glass.' (Arkadiev et al. 2009, 73)

b. **č'ale-m* *apč'ə-r* *q*^{w}*ətа-*ʁ
boy-OBL glass-ABS break-PST

To capture this obligatoriness in the syntax, two options are available. First, a special case-like feature can be introduced by the prefixes and checked by oblique NPs using constraining equations: this will ensure that oblique NPs only occur when there is a corresponding prefix on the verb. An alternative, suggested by an anonymous reviewer, is to use another, already existing feature (such as person or number) in the same way to ensure coindexation.

The latter approach seems preferable, since it avoids stipulating an extra feature solely for the purposes of indexation. We believe that it is person that should be used as a checking feature. In fact, number cannot be used in this function because there are number mismatches with distributive NPs, which are morphologically singular but can occur with a plural prefix (Bagirokova, Lander, and Phelan, n.d.); this was earlier described for the closely related Besleney Kabardian in Arkadiev and Lander (2013). More substantially, examples like (9) suggest that nouns in West Circassian are actually unmarked for person and receive this feature from the verbal prefixes, such that a noun can appear in an argument posi-

[18]Number is also agglutinatively expressed, and number morphemes could be described as occupying their own N_{num} nodes.

tion coindexed for the 1st or 2nd person. This approach is also in line with earlier suggestions in Lander and Bagirokova (2017) that verbal prefixes are functionally akin to determiners. Furthermore, requiring each NP to have a person feature makes sense from a semantic point of view.

Thus, no modifications to indexing prefixes are required; they assign person features as in (16). Nominal stems should be modified to require the presence of a person feature:[19]

(24) *ç'ale* N_{stem} $(\uparrow \textsc{pred}) = \text{'boy'}$ (from ex. 20)
$(\uparrow \textsc{num}) = \textsc{sg}$
$(\uparrow \textsc{pers})$

The Absolutive must be redefined as introducing the third person feature, because it appears without verbal indexation and is only used with third person arguments:

(25) *-r* N_{case} $(\textsc{subj} \uparrow)$ (from ex. 22)
$(\uparrow \textsc{pers}) = 3$

Case marking in West Circassian is optional, which means that bare nouns can occur in any core argument position regardless of verbal indexing. In our system, this can be expressed via a disjunction in the sublexical N rule, shown in (26). If the stem is used without a suffix, it includes an optional third person definition[20]

(26) $N \longrightarrow \{ N_{stem}\ N_{case} \mid N_{stem} \}$
$\uparrow{=}\downarrow \quad \uparrow{=}\downarrow \qquad \uparrow{=}\downarrow$
$((\uparrow \textsc{pers})=3)$

Pronouns, somewhat counterintuitively, license their person features via constraining equations rather than define them:

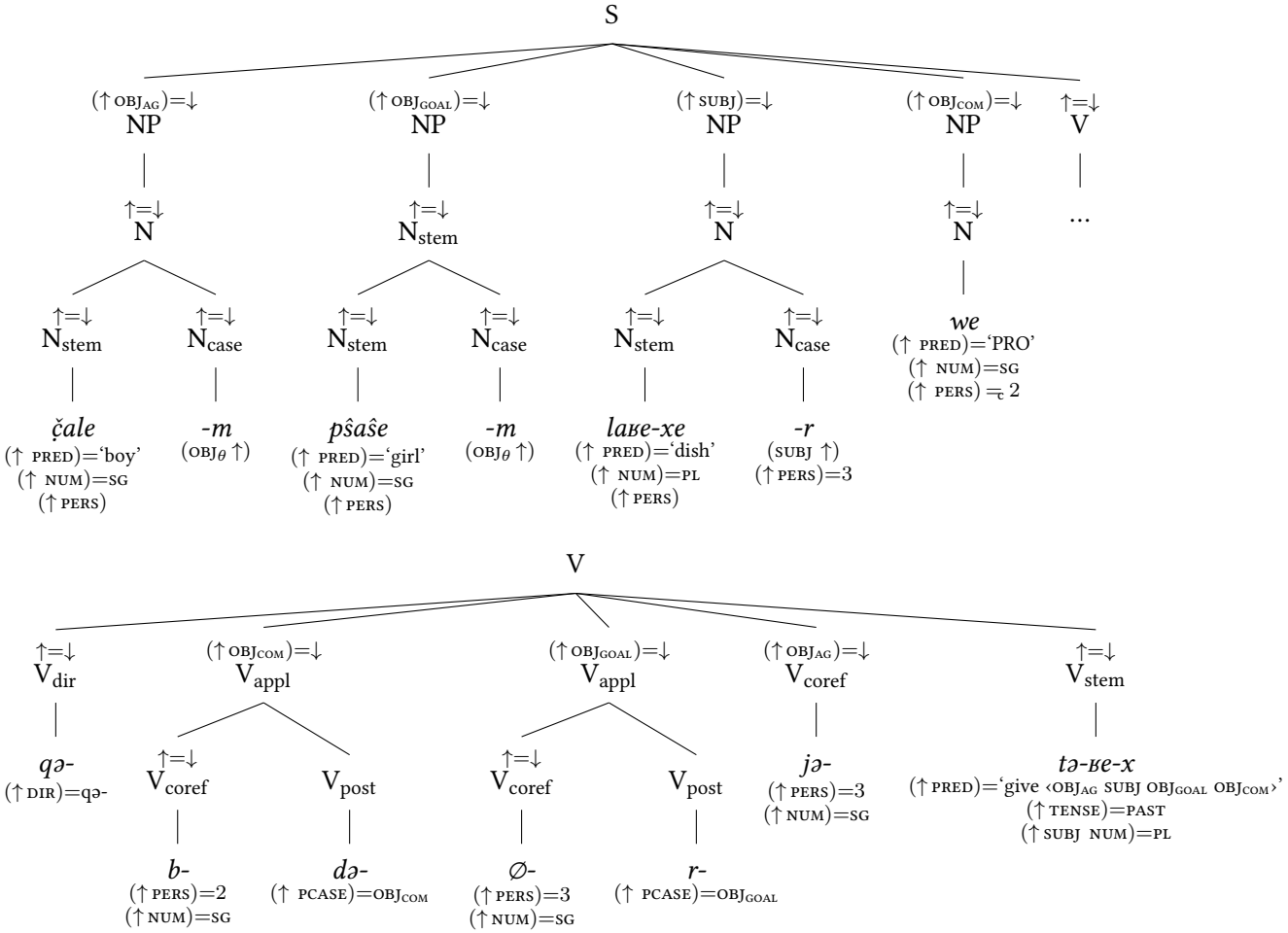
(27) *we* N $(\uparrow \textsc{pred}) = \text{'PRO'}$
$(\uparrow \textsc{pers}) =_c 2$
$(\uparrow \textsc{num}) = \textsc{sg}$

With these definitions, we can finally provide a full analysis for (1). The c-structure tree with annotations is given in Figure 1. It produces the f-structure in (7).

[19]This person constraint can be viewed as a syntactic placeholder for a proper semantic constraint on arguments having person (that is, being defined as speakers, hearers, or neither).

[20]A possibly more elegant way would be to capture this lexically via a morphological module like PFM (Stump 2001) coupled with a morphology-syntax interface (Dalrymple 2015), which would produce three different definitions for unmarked, absolutive and oblique noun forms.

Figure 1. Annotated c-structure for (1)



Curiously, our analysis appears to strike a balance between the pronominal argument hypothesis of polysynthesis as defined in Jelinek (1984) and Baker (1996) and the standard LFG approach where most verbal indexing markers are analyzed in essentially the same way as agreement (Austin and Bresnan 1996), unless there are clear syntactic arguments in favour of dislocation/topicalization of the indexed argument, as for the Chicheŵa verbal object marker Bresnan and Mchombo (1987). On the one hand, we generally follow the latter approach, since pronominal PRED values are only introduced optionally, in the absence of full NPs, just like verbal inflection in *pro*-drop languages. But on the other hand, the licensing of person makes the verbal prefixes more "argument-like" in the sense of their obligatoriness: they are the only elements that define this essential feature, while full NPs only check it via constraining equations. Furthermore, the internal structure of applicative markers closely mimics that of PPs; it is they that define the specific OBJ$_\theta$ function that the argument will take. Finally, non-pronominal NPs are undefined for person and only receive this feature from the verbal prefix, which

leads to the grammaticality of examples such as (9).[21] If the analysis is augmented with semantics, meaning constructors associated with person (and possibly other features) will be introduced by the prefixes, not by the nouns. Verbal prefixes thus work somewhat akin to determiners in languages that have articles: They do not define the lexical content of NPs, but are obligatory and contribute essential semantic information. In that, they differ strikingly from ordinary agreement morphemes.

5 Conclusion

West Circassian presents an interesting pattern of case marking, indexing and GF assignment that does not quite fit any of the well-known alignment types. While the core system is syntactically ergative ($\mathcal{S}/\mathcal{P}$ has SUBJ status), unlike most syntactically ergative systems, $\mathcal{A}$ does not have any special syntactic role (ĜF in Falk 2006, CORE in Manning 1996); all arguments indexed on the verb (direct objects, indirect objects, obliques) are OBJ_θ. Furthermore, GF assignment is different for 1st and 2nd person arguments, which never have SUBJ status and are mapped to OBJ_θ ($\mathcal{A}$, $\mathcal{S}/\mathcal{P}$, applicative arguments) or OBL_θ (postpositional phrases). This means that the Subject Condition (Bresnan and Kanerva 1989) is violated, which is not without precedent (Falk 2006; Kibort 2006), but unusual in this case because the violation is not lexically determined, but person-dependent.

The sketch analysis we propose in this paper mainly views verbal prefixes as agreement morphemes, but has certain features that resemble the pronominal argument hypothesis (Jelinek 1984; Baker 1996), in particular the fact that it is the verbal prefixes, not the nominal heads, that define the person of lexical nouns and pronouns; the lexical heads only constrain the person value. In this sense, verbal prefixes may also be said to resemble determiners, as proposed in Lander and Bagirokova (2017). A semantic analysis of West Circassian case marking and indexing will be essential for exploring this resemblance in more detail.

An open question that remains is how this analysis can be reconciled with Lexical Mapping Theory (LMT, Bresnan and Kanerva 1989; Kibort 2014). Syntactic ergativity, understood as inverse mapping (Manning 1996), is rather straightforward to implement: In terms of Kibort (2007), Patients/Themes map to arg_1 [-r], Agents to arg_3 [+o]; arg_2 is not used. However, LMT does not allow OBJ_θ [+o, +r] to be present in the absence of OBJ [+o, -r]: the highest-ranking [+o] should map to OBJ, and the highest-ranking [+r] to OBL_θ, according to the Markedness Hierarchy. A possible solution is to state that the OBJ function is simply unavailable in West

[21] An anonymous reviewer observes that it is counter-intuitive to propose that person is not inherent in nouns, especially in light of constructions where nouns do not appear in the presence of a verb yet receive a third-person interpretation (appositives, answers to questions). But the statement that nouns are unmarked for person only applies to forms that include case marking, which is optional in West Circassian. Forms unmarked for case can appear in any position – both Absolutive and Oblique – and do have an (optional) inherent third person feature, as shown in (26).

Circassian, hence arguments map to the next available slot(s) on the Markedness Hierarchy.[22]

Another problem is the effect of person on semantic role to GF mapping. Such constraints have not been formalized in current versions of LMT. More importantly, the change from SUBJ to OBJ_θ is impossible in the LMT system, as there is no way to transform [-r] to OBJ_θ [+o, +r] due to conflicting features. Only the change to OBJ [+o, -r] is possible, which is clearly not what is required. A possible solution is to state that person in West Circassian influences inherent feature specifications; such a solution, however, seems to be contrary to the general ideas behind LMT.

Finally, West Circassian verb morphology, the semantics of applicative marking, the nature of these "derived" arguments, and differences between Oblique-marked and postposition-marked arguments, will have to be worked out in future analyses.

References

Arkadiev, Peter, and Yury Lander. 2013. "Non-quantificational distributive quantifiers in Besleney Kabardian." *Snippets* 27 (September): 5–7.

Arkadiev, Peter M., Yury A. Lander, Alexander B. Letuchiy, Nina R. Sumbatova, and Yakov G. Testelets. 2009. "Vvedenie: Osnovnye svedenija ob adygejskom jazyke" [Introduction. General information on Adyghe]. In *Aspekty polisintetizma: Očerki po grammatike adygejskogo jazyka,* [Aspects of polysynthesis. Explorations in Adyghe grammar], ed. by Yakov G. Testelets, in collab. with Peter M. Arkadiev, Alexander B. Letuchiy, and Nina R. Sumbatova. Moscow: Izdatel'stvo RGGU.

Arkadiev, Peter M., and Yakov G. Testelets. 2019. "Differential nominal marking in Circassian." *Studies in Language* 43 (3): 715–751.

Austin, Peter, and Joan Bresnan. 1996. "Non-configurationality in Australian aboriginal languages." *Natural Language and Linguistic Theory* 14 (2): 215–268.

Bagirokova, Irina, Yury Lander, and Paul Phelan. n.d. "Number in West Circassian." In *Number in the World's Languages,* ed. by Paolo Acquaviva and Michael Daniel. Toappear, Berlin: Mouton de Gruyter.

Baker, Mark. 1996. *The Polysynthesis Parameter.* M: Blackwell Publishers.

Beliaeva, Anna. 2006. "Konstrukcii s postpozitivnoj utočnjajuščej gruppoj" [Constructions with postposed appositive modifiers]. Handout from a talk at the Adyghe Seminar, July 15, 2006.

[22]Clauses with OBJ_θ in the absence of OBJ are claimed to occur even in languages which generally have the OBJ function, notably in Dalrymple and Nikolaeva (2011) for unmarked direct objects in differential object marking systems. Hence, a more general solution may be required anyway.

Börjars, Kersti, and Nigel Vincent. 2008. "Objects and OBJ." In *Proceedings of the LFG '08 Conference,* ed. by Miriam Butt and Tracy Holloway King, 150–168. S: CSLI Publications.

Bresnan, Joan, Ash Asudeh, Ida Toivonen, and Stephen Wechsler. 2016. *Lexical-functional syntax.* Second edition. Blackwell Textbooks in Linguistics 16. Oxford: Wiley Blackwell.

Bresnan, Joan, and Jonni M. Kanerva. 1989. "Locative inversion in Chichewa: A case study of factorization in grammar." *Linguistic Inquiry* 20 (1): 1–50.

Bresnan, Joan, and Sam A. Mchombo. 1987. "Topic, pronoun, and agreement in Chichewa." *Language* 63 (4): 741–782.

Bresnan, Joan, and Lioba Moshi. 1990. "Object asymmetries in comparative Bantu syntax." *Linguistic Inquiry* 21 (2): 147–185.

Dahlstrom, Amy. 2009. "OBJθ without OBJ: A typology of Meskwaki objects." In *Proceedings of the LFG '09 Conference,* ed. by Miriam Butt and Tracy Holloway King, 222–239. S: CSLI Publications.

Dalrymple, Mary. 2015. "Morphology in the LFG architecture." In *Proceedings of the LFG15 Conference,* ed. by Miriam Butt and Tracy Holloway King, 64–83. Stanford, CA: CSLI Publications.

Dalrymple, Mary, John J. Lowe, and Louise Mycock. 2019. *The Oxford reference guide to Lexical Functional Grammar.* Oxford: Oxford University Press.

Dalrymple, Mary, and Irina Nikolaeva. 2011. *Objects and information structure.* Cambridge Studies in Linguistics 131. Cambridge: Cambridge University Press.

Ershova, Ksenia. 2019. "Syntactic Ergativity in West Circassian." PhD diss., University of Chicago.

Falk, Yehuda N. 2006. *Subjects and Universal Grammar: an explanatory theory.* Cambridge: Cambridge University Press.

Haspelmath, Martin. 2019. "Indexing and flagging, and head and dependent marking." *Te Reo* 62, no. 1 (Special issue in honour of Frantisek Lichtenberk): 93–115.

Jelinek, Eloise. 1984. "Empty categories, case, and configurationality." *Natural Language and Linguistic Theory* 2:39–76.

Kibort, Anna. 2006. "On three different types of subjectlessness and how to model them in LFG." In *Proceedings of the LFG '06 Conference,* ed. by Miriam Butt and Tracy Holloway King. S: CSLI Publications.

Kibort, Anna. 2007. "Extending the applicability of Lexical Mapping Theory." In *Proceedings of the LFG '07 Conference,* ed. by Miriam Butt and Tracy Holloway King, 250–270. Stanford, CA: CSLI Publications.

Kibort, Anna. 2014. "Mapping out a construction inventory with Lexical Mapping Theory," ed. by Miriam Butt and Tracy Holloway King, 262–282. Stanford, CA: CSLI Publications.

Kumakhov, Mukhadin, and Karina Vamling. 2019. *Circassian Clause Structure.* Malmö: Malmö University.

Lander, Yury A. 2005. "«Pronominal'nye argumenty» i «ad"junktnye imennye gruppy» v adygejskom jazyke" ["Pronominal arguments" and "adjunct noun phrases" in West Circassian]. In *Vtoraja konferencija po tipologii i grammatike dlja molodyx issledovatelej. Materialy,* 90–95. Saint Petersburg.

Lander, Yury. 2010. "Subject properties of the Adyghe absolutive: evidence from relatives." Unpublished manuscript.

Lander, Yury A. 2012. "Reljativizacija v polisintetičeskom jazyke: Adygejskie otnosite'lnye konstrukcii v tipologičeskoj perspektive" [Relativization in a polysynthetic language. Adyghe relative clauses in typological perspective]. Cand. thesis, Russian State University for the Humanities.

Lander, Yury A. 2015. "Aktanty i sirkonstanty v morfologii i sintaksise adygejskogo jazyka." [Arguments and adjuncts in the morphology and syntax of Adyghe]. *Vestnik RGGU. Serija: Istorija. Filologija. Kul'turologija. Vostokovedenie: [Russian State University for the Humanities Bulletin]* 1:7–31.

Lander, Yury. 2016. "Adyghe." In *Word-Formation: An International Handbook of the Languages of Europe,* ed. by Peter O. Müller, Ingeborg Ohnheiser, Susan Olsen, and Franz Rainer, vol. Vol. 5, 3508–3527. HSK 40.5. Berlin: Mouton de Gruyter.

Lander, Yury, and Irina Bagirokova. 2017. "Pronominal cross-reference in Circassian: description and theory." Conference presentation, Debrecen Workshop on Pronouns, University of Debrecen, February 25, 2017.

Lander, Yury, and Michael Daniel. 2019. "West Circassian relative prefixes as resumptives." *Linguistics* 57 (6): 1239–1270.

Lander, Yury, and Alexander Letuchiy. 2017. "Valency-decreasing operations in a valency-increasing language?" In *Verb valency changes: Theoretical and typological perspectives,* ed. by Albert Álvarez González and Ìa Navarro, 286–304. Typological Studies in Language 120. Amsterdam: John Benjamins.

Lander, Yury, and Yakov Testelets. 2017. "Adyghe." In *The Oxford Handbook of Polysynthesis,* ed. by Michael Fortescue, Marianne Mithun, and Nicholas Evans, 948–970. Oxford: Oxford University Press.

Letuchiy, Alexander. 2012. "Ergativity in the Adyghe system of valency-changing derivations." In *Ergativity, valency and voice,* ed. by Gilles Authier and Katharina Haude, 323–354. Belin: Mouton de Gruyter.

Manning, Christopher D. 1996. *Ergativity: Argument structure and grammatical relations.* S: CSLI Publications.

Nordlinger, Rachel. 1998. *Constructive case: evidence from Australian languages.* Dissertations in Linguistics. Stanford: CSLI Publications.

Rogava, Georgij V., and Zajnab I. Keraševa. 1966. *Grammatika adygejskogo jazyka* [A grammar of Adyghe]. Krasnodar and Majkop: Krasnodarskoe knižnoe izdatel'stvo.

Stump, Gregory T. 2001. *Inflectional morphology: a theory of paradigm structure.* Cambridge Studies in Linguistics 93. Cambridge: Cambridge.

Testelets, Yakov G. 2009. "Nevyražennye aktanty v polipredikativnoj konstrukcii" [Unexpressed arguments in complex clauses]. In *Aspekty polisintetizma: Očerki po grammatike adygejskogo jazyka,* ed. by Yakov G. Testelec, in collab. with Peter M. Arkadiev, Alexander B. Letuchiy, and Nina R. Sumbatova, 654–711. Moscow: Izdatel'stvo RGGU.