

# A case of morphologically bound complementation in Abaza: an LFG analysis

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## Abstract

The present paper deals with morphologically bound complementation, a type of construction where a matrix predicate and the head of its clausal complement constitute a single verb morphologically but retain their syntactic and semantic independence. I analyze one instance of this type of subordination: the construction with an element  $\text{ʒəʃ}^{\prime}a$  ‘seem’ in Abaza (Northwest Caucasian). I discuss previous LFG analyses of morphologically bound complementation constructions and suggest that this class of constructions is a potential domain for expanding the mechanism of Lexical Sharing.

## 1 Introduction

Morphologically bound complementation<sup>1</sup> is a construction where a matrix predicate and the head of its clausal complement constitute a single verb morphologically but retain their syntactic and semantic independence. Example (1) presents a case of morphologically bound complementation in Abaza (Northwest Caucasian): a construction with the element  $\text{ʒəʃ}^{\prime}a$  ‘seem’.

- (1) sara [awəj d-ʕa-j-wa]-ʒə-s-ʃ<sup>ʹ</sup>-əj-t  
1SG DIST 3SG.H.ABS-CSL-go-IPF-LOC-1SG.IO-**seem**-PRS-DCL  
‘I think s/he is coming.’<sup>2</sup> (*lit.* ‘It seems to me that s/he is coming.’)

The semantic and syntactic independence of the predicates in the construction with  $\text{ʒəʃ}^{\prime}a$  can be illustrated by the fact that each predicate has its own argument structure and can be modified by adverbs, cf. (2).

- (2) sara pasata [wara ʃabəʒta  
1SG earlier 2SG.M fast  
wə-ʕ-wa]-ʒə-s-ʃ<sup>ʹ</sup>-əw-n  
2SG.M.ABS-run-IPF-LOC-1SG.IO-**seem**-IPF-PST  
‘Before, I thought you run fast.’

The morphological boundness of the construction can be illustrated by single morphological marking. For example, when a temporal subordinate clause contains a complementation construction, the temporal prefix  $an(\text{ə})$ - ‘when’ always appears on the matrix predicate (3). However, in the construction with  $\text{ʒəʃ}^{\prime}a$  (4) the prefix  $an(\text{ə})$ - appears to the left of the dependent verb stem, even though it modifies the matrix verb.

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<sup>1</sup>The term was first introduced in Maisak (2016: 837-838).

<sup>2</sup>A list of abbreviations is given in the end of the paper.

- (3) d-š-psə-z **anə-l-ba**  
 3SG.H.ABS-REL.MNR-die-PST.NFIN **TMP**-3SG.F.ERG-see  
 d-čəwa d-a-la-ga-t  
 3SG.H.ABS-cry.IPF 3SG.H.ABS-3SG.N.IO-LOC-begin-DCL  
 ‘When she saw that he had died, she started crying.’
- (4) [d-**an**-psə]-ʒə-l-š’a d-čəwa  
 3SG.H.ABS-**TMP**-die-LOC-3SG.F.IO-**seem** 3SG.H.ABS-cry.IPF  
 d-a-la-ga-t  
 3SG.H.ABS-3SG.N.IO-LOC-begin-DCL  
 ‘When she thought he had died, she started crying.’

Likewise, when circumfixal negation applies to the construction with ʒəš’a, the prefix g’- appears in the prefixal part of the whole construction, even when only its second part (the main clause) is negated, cf. (5) and (6).

- (5) sara [d-ʔa-j-ta] **g’-qa-s-č-əw-m**  
 1SG 3SG.H.ABS-CSL-go-ADV **NEG-LOC**-1SG.ERG-believe-IPF-**NEG**  
 ‘I don’t believe he came.’
- (6) [awəj d-**g’**-ʔa-j]-ʒə-s-š’-əw-**m**  
 DIST 3SG.H.ABS-**NEG**-CSL-go-LOC-1SG.IO-seem-IPF-**NEG**  
 ‘I don’t think he came.’

From a typological perspective, morphologically bound complementation can be divided into different types depending on the semantics of the matrix predicate (similarly to standard complementation, see e.g. Givón 1980). First, some of the constructions with manipulative predicates (‘order’, ‘cause’, etc.), better-known as “morphological causatives”, demonstrate biclausal properties and thus can be considered a type of morphologically bound complementation. A good example is constructions with the morphological causative in Japanese where, in particular, both the matrix predicate and the embedded predicate can be in the scope of an adverbial (7).

Japanese (Shibatani 1990: 310)

- (7) Taro wa Hanako ni 6-zi ni oki-**sase**-ta  
 Taro TOP Hanako AGT 6-o’clock at wake\_up-**CAUS**-PST  
 ‘Taro woke up Hanako at 6 o’clock.’ / ‘Taro made Hanako wake up at 6 o’clock.’

Other common types are morphologically bound constructions with phasal (e.g., ‘start’), modal (e.g., ‘want’) and so-called perception-cognition-utterance (PCU) predicates (‘know’, ‘say’, etc.). An example illustrating the last semantic type is

given in (8); the Abaza construction with  $\text{ʒəʃ}^a$  also belongs to this type.<sup>3</sup>

Yaqui, Uto-Aztecan (Guerrero 2006: 178)

- (8) Joan-Ø tuuka enchi siim-**maachia**-Ø  
 Juan-NOM yesterday 2SG:ACC go-**believe**-PRS  
 ‘Juan believes you to have left yesterday.’

Table 1 shows the main differences of morphologically bound complementation from other types of subordinated constructions which at first glance might look similar. The classification is made according to three parameters: complement vs. adjunct, two clauses vs. one clause and morphologically free vs. morphologically bound. Morphologically bound types of constructions are discussed below in some more detail.

Table 1. Syntactic and morphological relations between heads (partly based on Maisak (2016: 837)).

		morphologically free	morphologically bound
complement	two clauses	complementation (e.g., propositional attitude or knowledge predicates in English)	<b>morphologically bound complementation</b> (e.g., $\text{ʒəʃ}^a$ -construction in Abaza)
	one clause	clause union (e.g., <i>faire</i> -causative in French)	lexical union (e.g., continuative in Abaza)
adjunct	two clauses	adverbial clauses (e.g., <i>when</i> -clauses in English)	morphologically bound adverbial clauses
	one clause	serial verb constructions (e.g., verb serialization in Ewe)	verb-verb compounds (e.g., verbal incorporation in Bininj Gun-wok)

In contrast to morphologically bound complementation, constructions called “lexical union” are monoclausal. Lexical union can be illustrated by the Abaza continuative suffix  $\text{-rk}^w\text{a}$  (9), which, according to Avidzba (2017), originates from the copula verb, but since synchronically it does not show any semantic and syntactic independence, it does not have its own PRED function (10).

- (9) d-apχ<sup>ʼ</sup>a-**rk**<sup>w</sup>-əj-t  
 3SG.H.ABS-read-CNT-PRS-DCL  
 ‘S/he continues to read.’

<sup>3</sup>For more examples of morphologically bound complementation, see Panova (2018).

$$(10) \left[ \begin{array}{ll} \text{PRED} & \text{'continue to read} \langle (\uparrow \text{SUBJ}) \rangle \\ \text{TENSE} & \text{PRS} \\ \text{FINITENESS} & + \\ & \left[ \begin{array}{ll} \text{PRED} & \text{'pro'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{HUM} & + \end{array} \right] \\ \text{SUBJ} & \end{array} \right]$$

Verb-verb compounds which constitute a morphologically bound subtype of serial verb construction (see, e.g., verb serialization in Ewe (Kwa) (Ameka 2006))<sup>4</sup> are also monoclausal, cf. my hypothetical f-structure (12) of the Biniñ Gun-wok wordform in (11).

Biniñ Gun-wok (Gun-djeihmi dialect), Gunwinyguan (Evans 2003: 536)

- (11) ga-ganj-ngu-nihmi-re  
 3-meat-eat-IVF-go.NPST  
 'He goes along eating meat.'

$$(12) \left[ \begin{array}{ll} \text{PRED} & \text{'go eating} \langle (\uparrow \text{SUBJ})(\uparrow \text{OBJ}) \rangle \\ \text{PRED-TYPE} & \text{incorporating-verb-form} \\ \text{TENSE} & \text{NON-PAST} \\ & \left[ \begin{array}{ll} \text{PRED} & \text{'pro'} \\ \text{PERS} & 3 \end{array} \right] \\ \text{SUBJ} & \\ & \left[ \begin{array}{ll} \text{PRED} & \text{'meat'} \end{array} \right] \\ \text{OBJ} & \end{array} \right]$$

Morphologically bound constructions with adverbial clauses are expected to be similar to morphologically bound complementation with the difference that a subordinate predicate is not a complement but an adjunct. However, at least for now I do not know any proven examples of this strategy (perhaps some verb-verb compounds actually have biclausal properties but I do not know any studies which would demonstrate that).

Thus, the aim of the present paper is to propose an LFG analysis of the construction with the element  $\text{ʒəʃ'a}$  'seem' in Abaza (1), an example of morphologically bound complementation. A preliminary version of the proposed analysis has been discussed earlier in Panova (2020).

## 2 The Abaza language and LFG

Abaza is a polysynthetic Northwest Caucasian (Abkhaz-Adygean) language spoken by some 50 thousand people, mainly in Russian North Caucasus and in Turkey.

<sup>4</sup>Aikhenvald (2006) discusses wordhood as a parameter of variation across serial verb constructions. For a definition of serial verb constructions, see also Haspelmath (2016).

Elicited data presented in this paper were collected in 2017-2019 during field-trips to the village Inzhich-Chukun in the Karachay-Cherkess Republic, Russia.

For the basics of Abaza grammar, see Genko (1955), Tabulova (1976), Lomtadidze (2006) and Arkadiev (to appear). An example of the Abaza sentence from an oral narrative is given in (13).

- (13) s-ph<sup>w</sup>əs            nina d-ŋa-s-c-qrəŋ-əw-mca  
 1SG.IO-woman Nina 3SG.H.ABS-CSL-1SG.IO-COM-help-IPF-CVB  
 s-š'ap' -k<sup>w</sup>a        s-rə-k<sup>w</sup>-lə-r-gəl-χ-d  
 1SG.IO-foot-PL 1SG.ABS-3PL.IO-LOC-3SG.F.ERG-CAUS-stand-RE-DCL  
 'My wife Nina helped me to get on my feet.'

Abaza has never been analyzed within LFG, so before starting the analysis of the *zəš'a*-construction, several decisions concerning representation of some basic grammatical features of Abaza have to be made. First, due to the lack of compelling evidence for clause-level configurationality I postulate a flat c-structure of S. Second, Abaza is a morphologically ergative language (cf. argument prefixes in (13)) but there are no evidence for syntactic ergativity in Abaza, so in f-structure I will use standard notions SUBJ and OBJ. As a result, in examples below a subject can be encoded in the verb by the absolutive prefix, by the ergative prefix or in case of predicates which presuppose an oblique subject — by the indirect object prefix (importantly, *zəš'a* 'seem' belongs to this class of predicates).

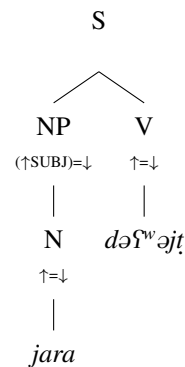
Example (14) shows an intransitive clause, where the argument is cross-referenced on the verb by the absolutive prefix and encoded as a subject in the lexical entry (15) and in the f-structure (16).

- (14) jara            də-ŋ<sup>w</sup>-əj-t  
 3SG.M/N 3SG.H.ABS-run-PRS-DCL  
 'He is running.' (Tabulova 1976: 118)

- (15) *dəŋ<sup>w</sup>əjt* V (↑ PRED) = 'run ((↑SUBJ))'  
 (↑ TENSE) = PRS  
 (↑ FINITENESS) = +  
 (↑ SUBJ PERS) = 3  
 (↑ SUBJ NUM) = SG  
 (↑ SUBJ HUM) = +

- (16)

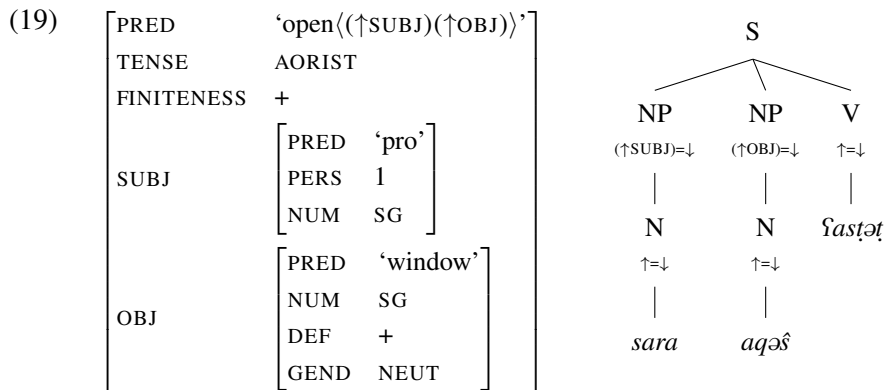
PRED	'run ((↑SUBJ))'								
TENSE	PRS								
FINITENESS	+								
SUBJ	<table style="border-collapse: collapse; margin-left: 20px;"> <tr> <td style="border-right: 1px solid black; padding: 2px 5px;">PRED</td> <td style="padding: 2px 5px;">'pro'</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px 5px;">PERS</td> <td style="padding: 2px 5px;">3</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px 5px;">NUM</td> <td style="padding: 2px 5px;">SG</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px 5px;">GEN</td> <td style="padding: 2px 5px;">MASC</td> </tr> </table>	PRED	'pro'	PERS	3	NUM	SG	GEN	MASC
PRED	'pro'								
PERS	3								
NUM	SG								
GEN	MASC								



Example (17) illustrates a transitive clause. Note that there is an ergative prefix in the verb, while the absolutive prefix is omitted. The absolutive prefix *j-* (3SG.N or 3PL) is usually dropped when a coreferential nominal expression (in this case *aqəṣ* ‘the window’) immediately precedes the verb. The lexical entry is presented in (18) and the f- and c-structures of sentence (17) are shown in (19).

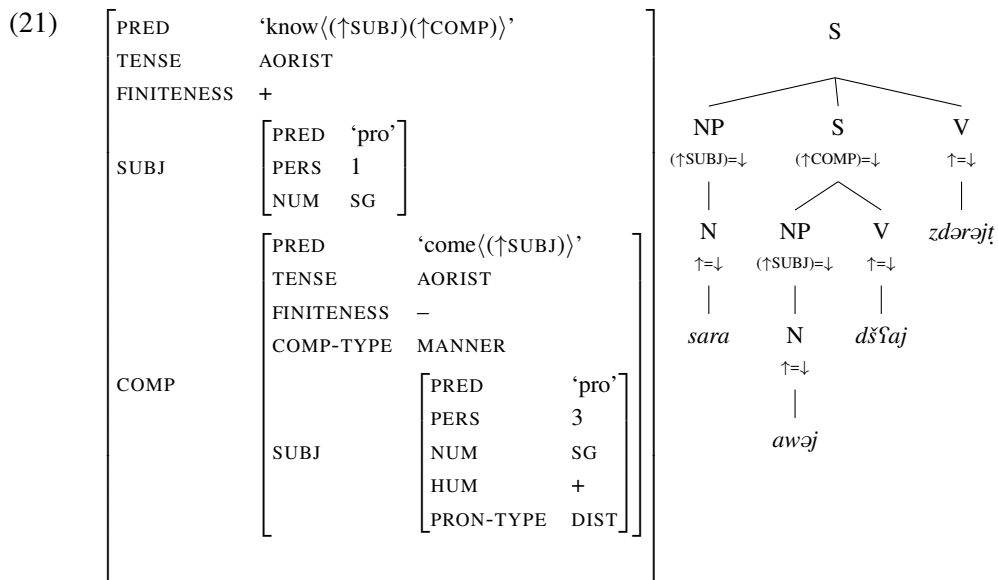
- (17) *sara a-qəṣ*            *ʕa-s-tə-t*  
 1SG DEF-window CSL-1SG.ERG-open-DCL  
 ‘I opened the window.’

- (18) *ʕastət* V (↑ PRED) = ‘open ((↑SUBJ)(↑OBJ))’  
 (↑ TENSE) = AORIST  
 (↑ FINITENESS) = +  
 (↑ OBJ PERS) = 3  
 {(↑ OBJ NUM) = SG  
 (↑ OBJ GEND) = NEUT |  
 (↑ OBJ NUM) = PL}  
 (↑ SUBJ PERS) = 1  
 (↑ SUBJ NUM) = SG



Example (20) shows the most common complementation strategy in Abaza — manner relativization. A sentential complement is formed as a headless manner relative clause, thus (20) literally means ‘I know (that) how he came’. In the f-structure (21) of sentence (20) I introduce the attribute COMP-TYPE, which indicates the complementation strategy.

- (20) *sara [awəj d-š-ʕa-j]*                                    *z-dər-əj-t*  
 1SG DIST 3SG.H.ABS-REL.MNR-CSL-go 1SG.ERG-know-PRS-DCL  
 ‘I know that he came.’



Now, having shown how standard Abaza complementation can be formalized in terms of LFG, I proceed to morphologically bound complementation. I assume that the f-structure of the  $\text{ʒəʃ}'a$ -construction is simply equal to the f-structure of standard (morphologically free) Abaza complementation. What is less obvious is how the morphological boundness of the  $\text{ʒəʃ}'a$ -construction should be encoded in c-structure. In the next section I show how this question has been answered in previous literature for cases of morphologically bound complementation in other languages.

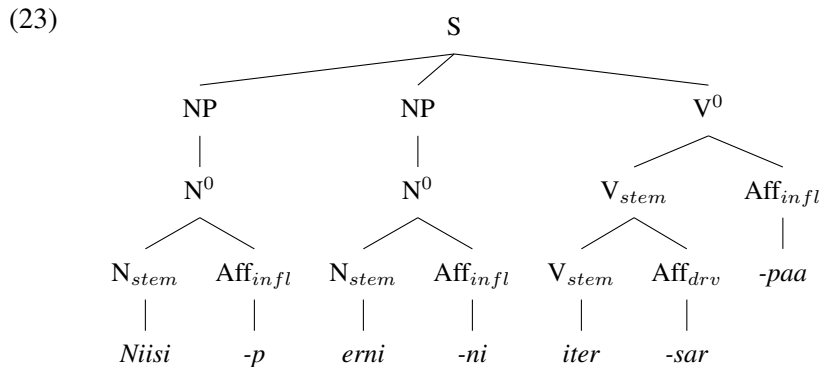
### 3 Previous studies and Analysis 1

Morphologically bound complementation constructions in West Greenlandic have been analyzed within LFG by Manning (1994). In the c-structure of example (22) he postulates a sublexical level which allows to show relations between morphemes constituting the verbal complex and, in particular, between the matrix and the embedded predicate, cf. (23).

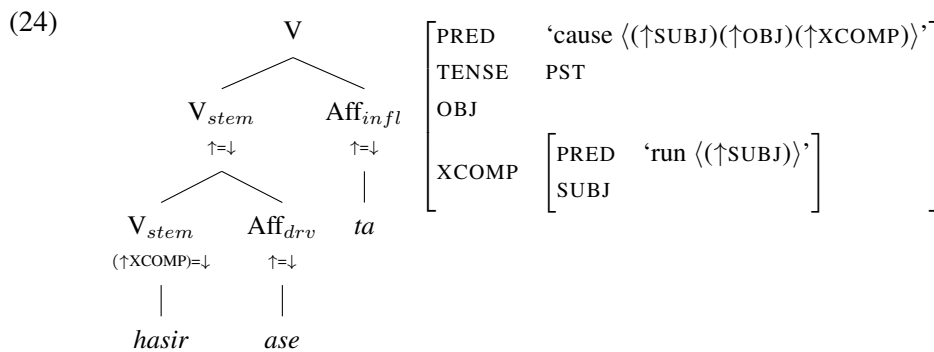
West Greenlandic, Eskimo-Aleut (Manning 1994: 99-100)

- (22) Niisi-p erni-ni iter-sar-paa  
 Niisi-ERG son-SG.RFL(ABS) wake.up-try-IND.TR.3SG.3SG  
 'Niisi<sub>i</sub> tried to wake up his<sub>i</sub> son.'





A similar solution has been proposed for the morphological causative in Japanese by Bresnan et al. (2016: 395-396). For the wordform *hasir-ase-ta* ‘run-CAUS-PST’ they suggest an expanded c-structure involving a sublexical level at which the causative morpheme *-ase-* and the verbal root *hasir-* ‘run’ appear as two separate nodes, cf. (24).



In both examples discussed above the subject of the embedded predicate is a part of the argument structure of the matrix, so there are no dependents belonging exclusively to the embedded clause. However, in the  $\text{ʒəʃ}^a$ -construction the embedded predicate can have its own dependents, cf. (2) repeated here as (25).<sup>5</sup>

- (25) sara pasata [wara šabəʒta  
 1SG earlier 2SG.M fast  
 wə-ʎ-wa]-ʒə-s-šʹ-əw-n  
 2SG.M.ABS-run-IPF-LOC-1SG.IO-**seem**-IPF-PST  
 ‘Before, I thought you run fast.’

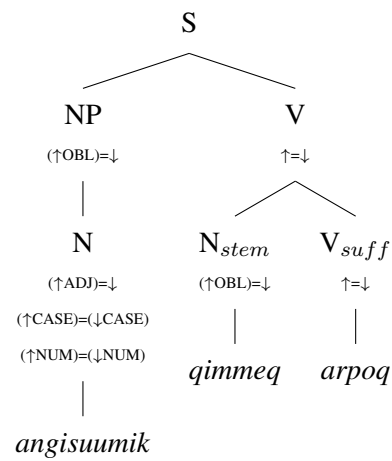
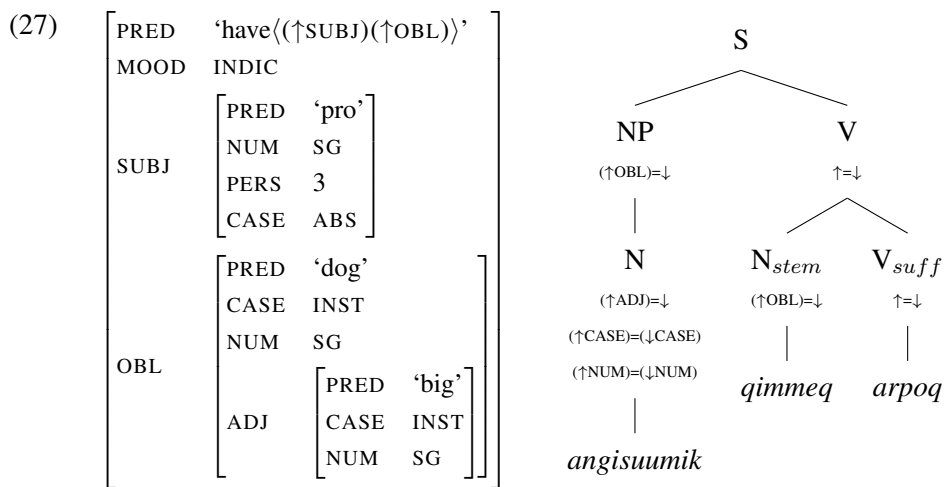
Thus, before applying the “sublexical” analysis to the  $\text{ʒəʃ}^a$ -construction, it has to be decided how the unshared arguments and other dependents (if any) of the incorporated predicate should be represented in c-structure.

<sup>5</sup>This property of morphologically bound complementation is well-described, in particular, for the morphologically bound construction with the matrix predicate ‘check, find out’ in Agul (Nakh-Daghestanian), see Maisak (2016).

Essentially the same issue has already been resolved for a very similar case of modifier stranding in noun incorporation. Analyzing examples with modifier stranding in West Greenlandic (26), Bresnan et al. (2016: 446) introduce a headless NP which contains a modifier ('big'), while the incorporated head ('dog') appears as a dependent of the V node (27).

West Greenlandic, Eskimo-Aleut (Sadock 1980: 309)

- (26) **angisuu-mik** qimmeq-arpoq  
**big-INST** dog-have.IND.3SG  
 'He has a big dog.'



In a similar fashion, the S phrase dominating the dependents of the incorporated predicate can be introduced for the *ʒəʃ'a*-construction in Abaza. This is illustrated in (29): the c-structure of sentence (28) contains a headless S phrase with the absolutive argument of the embedded predicate, while the embedded predicate is placed together with the matrix.

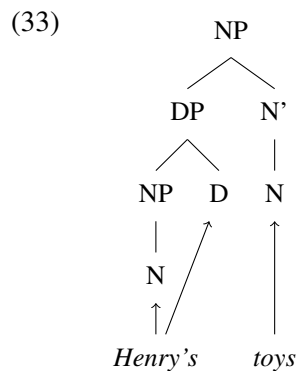
- (28) sara [awəj d-ʕa-j-wa]-ʒə-s-š'-əj-t  
 1SG DIST 3SG.H.ABS-CSL-go-IPF-LOC-1SG.IO-**seem**-PRS-DCL  
 'I think s/he is coming.'





## 4 Analysis 2

Lexical Sharing is a mechanism which allows two adjacent terminal nodes to be co-instantiated by one word (Wescoat 2002). For example, according to the Lexical Sharing analysis of the English possessive marker 's (Lowe 2015a), a head noun and the possessive constitute a single element in the lexicon but correspond to two distinct nodes in the c-structure (33).

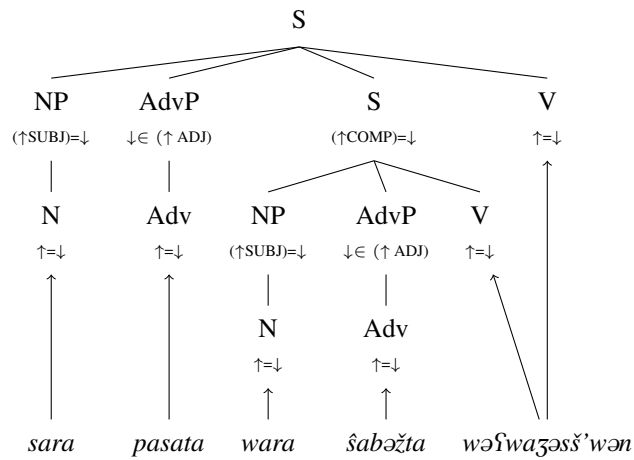


Previously this mechanism has been applied to such grammatical phenomena as pronoun-auxiliary constrictions (Wescoat 2005), suspended affixation (Broadwell 2008, Belyaev 2014), nominal compounds (Lowe 2015b), etc. Lowe (2015a) notes that the Lexical Sharing approach can account for syntactic change, i.e. diachronic processes.

The c-structure of (34) demonstrates how the Lexical Sharing mechanism can be used to model morphologically bound complementation. According to (35), the complex verbal form with  $\text{ʒəʃ'a}$  appears as a morphologically fully formed verb which maps to two neighboring positions in the c-structure and this allows it to have dependents in both embedded and matrix clauses.

- (34) sara pasata [wara šabəʒta  
 1SG earlier 2SG.M fast  
 wə-ŋ-wa]-ʒə-s-š'-wə-n  
 2SG.M.ABS-run-IPF-LOC-1SG.IO-**seem**-IPF-PST  
 'Before, I thought you run fast.'

(35)



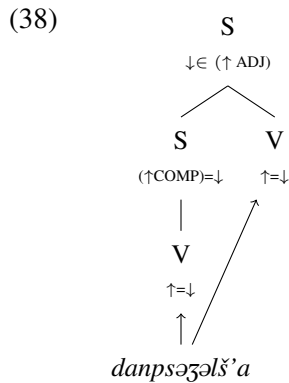
A lexical entry for the complex verbal form is given in (36). It consists of two parts: features associated with the embedded verb and features associated with the matrix. Note that Lexical Sharing requires predicates to be together, so there is no need to postulate any additional rules to exclude word order pattern (32a) discussed earlier.

(36) *wəŋwaʒəsš'wən*:

V	(↑ PRED) = 'run ((↑SUBJ))'	V	(↑ PRED) = 'seem ((↑SUBJ)(↑COMP))'
	(↑ TENSE) = PRS		(↑ TENSE) = IMPERFECT
	(↑ FINITENESS) = -		(↑ FINITENESS) = +
	(↑ SUBJ PERS) = 2		(↑ OBJ PERS) = 3
	(↑ SUBJ NUM) = SG		{(↑ OBJ NUM) = SG
	(↑ SUBJ GEND) = M		(↑ OBJ GEND) = NEUT
			(↑ OBJ NUM) = PL}
			(↑ SUBJ PERS) = 1
			(↑ SUBJ NUM) = SG

As for the cases with non-compositionally located morphemes, they can also be modeled with Lexical Sharing, cf. (37)-(39). Since the linear position of morphemes in the wordform is determined by a morphological template that is independent from c-structure, all features in the lexical entry can be already assigned in the right way.

(37) [d-**an**-psə]-ʒə-l-š'a  
 3SG.H.ABS-TMP-die-LOC-3SG.F.IO-seem  
 'when she thought he had died'



- (39) *danpsəʒəlš'a*:
- |   |   |
|---|---|
| <p>V (↑ PRED) = ‘die ((↑SUBJ))’</p> <p>(↑ TENSE) = AORIST</p> <p>(↑ FINITENESS) = –</p> <p>(↑ SUBJ PERS) = 3</p> <p>(↑ SUBJ NUM) = SG</p> <p>(↑ SUBJ HUM) = +</p> | <p>V (↑ PRED) = ‘seem ((↑SUBJ)(↑COMP))’</p> <p>(↑ TENSE) = AORIST</p> <p>(↑ FINITENESS) = –</p> <p>(↑ OBJ PERS) = 3</p> <p>{(↑ OBJ NUM) = SG</p> <p>(↑ OBJ GEND) = NEUT  </p> <p>(↑ OBJ NUM) = PL}</p> <p>(↑ SUBJ PERS) = 3</p> <p>(↑ SUBJ NUM) = SG</p> <p>(↑ SUBJ GEND) = F</p> <p>(↑ <b>ADJ-TYPE</b>) = <b>TMP</b></p> |
|---|---|

Of course, a more detailed analysis should involve a model of the relevant Abaza morphology in some lexicalist model, e.g., PFM (Stump 2001), and a description of the morphology-syntax interface, e.g., in terms of Dalrymple (2015) and Dalrymple et al. (2019), but I leave this for further research.

## 5 Conclusion

In this paper two analyses of the case of morphologically bound complementation in Abaza were discussed: the analysis with a sublexical level and the analysis involving Lexical Sharing. Although both analyses are possible, I tried to show that Lexical Sharing is a more elegant way to formalize morphologically bound complementation because it requires co-instantiated nodes to be adjacent in the c-structure and thus excludes impossible word order patterns. Moreover, I believe that morphologically bound complementation, being a result of the morphologization of the complementation construction, is a peculiar phenomenon that can hardly be well-formalized in a purely synchronically-oriented model. Therefore, Lexical Sharing that has been shown to be a good tool for modeling diachronic change (Lowe 2015a) seems to be a more natural way to account for morphologically bound complementation constructions.

## Abbreviations

1 — 1<sup>st</sup> person; 2 — 2<sup>nd</sup> person; 3 — 3<sup>rd</sup> person; ABS — absolutive; ACC — accusative; ADV — adverbial; AGT — agentive; CAUS — causative; CNT — continuative; COM — comitative; CSL — cislocative; CVB — converb; DCL — declarative; DEF — definite; DIST — distal demonstrative; ERG — ergative; F — feminine; H — human; IND — indicative; IO — indirect object; INST — instrumentalis; IPF — imperfective; IVF — incorporating verb form; LOC — locative preverb; M — masculine; MNR — manner subordination; N — neuter; NEG — negation; NFIN — non-finite; NOM — nominative; PL — plural; PRS — present; PST — past; RE — repetitive; REL — relativization; RFL — reflexive; SG — singular; TMP — temporal subordination; TR — transitive.

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