Ossetic nominal inflection: Between morphology and syntax

Oleg Belyaev
Lomonosov Mosocow State University, Institute of Linguistics RAS

Danil Alekseev
Institute of Linguistics RAS

Ash Asudeh
University of Rochester

Bronwyn Bjorkman
Queen's University

Frances Dowle
University of Oxford

Nadeem Siddiqi
Carleton University

Lisa Sullivan
Carleton University

Proceedings of the LFG'25 Conference

Miriam Butt, Jamie Y. Findlay and Ida Toivonen (Editors)

2025

PubliKon

lfg-proceedings.org

Abstract

Ossetic, an Iranian language spoken in the Caucasus, has a system of eight cases that are mostly formed in an agglutinating fashion, with the possibility of suspended affixation. This system has a number of additional unconventional features, including inflectional irregularities in pronouns, complex stem allomorphy and syncretism patterns and the use of oblique forms as nonfinal conjuncts. In this paper, we review prior accounts of Ossetic case inflection and propose a novel LrFG analysis that we claim allows capturing the relevant facts in a more regular and straighforward manner.

1 Introduction

The system of nominal inflection of Ossetic[1] (Iranian > Indo-European) has several challenging features. While being predominantly agglutinating and allowing suspended affixation, it has numerous irregularities and complex stem allomorphy patterns in a number of pronominal paradigms. It also features suspended affixation in which the case form of non-final conjuncts depends on the structure of the paradigm of the lexeme in question, with nominative forms surfacing for nouns and "genitive" (or oblique-stem) forms for pronouns.

There have been several analyses of Ossetic nominal inflection to date, but they have mostly concentrated on the formal means of modelling suspended affixation. Erschler (2012b) proposed a morphological ellipsis account, while Belyaev (2014, 2021) proposed a feature-based account in LFG with lexical sharing (Wescoat 2002, Broadwell 2008, Lowe 2016). The latter account also included a Paradigm Function Morphology, Version 2 (PFM2, Stewart & Stump 2007, G. Stump 2016) model of nominal and pronominal inflection, as well as of the syntax-semantics interface, based on Dalrymple (2015) and Dalrymple et al. (2019) and integrating an additional mechanism for handling lexical sharing.

While the analysis proposed in Belyaev (2021) adequately handles the suspended affixation facts and basic paradigm structure, it did not aim to capture all properties of Ossetic nominal inflection. Furthermore, in spite of using lexical sharing, the analysis is still fully lexicalist in that all information associated with morphological words – including their lexical sharing patterns – is contributed by a separate morphological module. This means that the patterns of syncretism and stem allomorphy found in nominal inflection cannot be connected with the patterns found elsewhere – specifically, in the system of second-position clitics, whose forms are irregular and thus fully stored in the lexicon rather than handled in the morphology. Finally, to integrate lexical sharing into the morphology-syntax interface, this analysis also implements a mechanism for splitting the f-descriptions between the two shared heads, further complicating the translation between m-features and f-descriptions according to the model in Dalrymple (2015).

[1]Belyaev and Alekseev's work has been supported by the Russian Science Foundation, project no. 25-78-10222 "Between morphology and syntax: Challenging phenomena across frameworks". We are grateful to the audience of the LFG'25 Conference (Barcelona, 22–24 July 2025) and two anonymous reviewers for their insightful comments and suggestions, to Miriam Butt, Jamie Findlay and Ida Toivonen for their painstaking editorial work, and to the native speakers of Ossetic for their kind support. All errors are ours.

In this paper, we propose a new analysis of Ossetic nominal inflection that uses the LrFG framework (Asudeh & Siddiqi 2023). The main feature of LrFG is that it preserves the syntactic component of LFG, while implementing a non-lexicalist, realizational model of morphology. This offers several advantages that mitigate the shortcomings of the prior analysis. For the first time, the Ossetic system of case and number inflection can be given a uniform account that transcends its "morphological" and "syntactic" dimensions. Furthermore, using a hierarchical model of case inspired by Caha (2009) allows for a compact description of stem and affix allomorphy. Lack of a strict boundary between morphology and syntax allows for a simpler model that is based on a single set of case features. Finally, looking at Ossetic case from a non-lexicalist point of view allows one to see new descriptive problems and ask new questions that have remained unnoticed in prior accounts.

The paper is structured as follows. In section 2, we provide general information on Ossetic and its main varieties. In section 3, we provide a descriptive overview of Ossetic nominal paradigms, including pronominal clitics. In section 4, we discuss prior analyses of Ossetic case inflection, specifically concentrating on the lexical sharing analysis in Belyaev (2021) and its criticism. The new LrFG analysis is described in section 5, where we also show how it overcomes some of the problems faced by the earlier analysis and provides some motivation for a non-lexicalist variant of LFG.

2 General information on Ossetic

Ossetic is an Iranian language spoken by around 450 000 people, most of whom live in the Republic of North Ossetia – Alania (Russia) and in South Ossetia — with sizeable diasporae in Georgia and Turkey. Ossetic is divided into two varieties, Iron and Digor, which are traditionally treated as dialects, although both have distinct literary standards and are treated by some authors as separate languages (cf. Erschler 2020). Of these two, Iron has by far the highest number of speakers and is spoken in most of North Ossetia and in all of South Ossetia; Digor, in contrast, is mostly concentrated in two westernmost districts of North Ossetia (Digoræ and Iræf) and is generally considered the more archaic variety. In this paper, we will only discuss Iron data for reasons of both space and simplicity, but the analysis can potentially be extended to cover Digor as well.

Two kinds of data are used to motivate the analysis: inflection paradigms, which mostly repeat material already known from descriptive grammars such as Gagkaev (1952), Abaev (1958), Axvlediani (1963), and Bagaev (1965), and facts on nominal coordination, which have already been discussed in Erschler (2012a), Belyaev (2014, 2021), and Erschler (2022). Thus we present no new data, but propose a new analysis that, in our view, provides a better generalization of the facts than prior approaches.

3 Ossetic nominal morphology

3.1 Nouns

Nouns in Ossetic inflect in a fully agglutinating fashion, as shown in the paradigm in Table 1. Case is always expressed separately from number, and the form of affixes is gen-

Table 1: Inflection of nouns

	læg ‘man’		*k’aba* ‘dress’	
	sg.	pl.	sg.	pl.
NOM	læg	læg-tæ	k’aba	k’aba-tæ
GEN	læǯ-ə	læg-t-ə	k’aba-jə	k’aba-t-ə
DAT	læg-æn	læg-t-æn	k’aba-jæn	k’aba-t-æn
ALL	læg-mæ	læg-t-æm	k’aba-mæ	k’aba-t-æm
ABL	læg-æj	læg-t-æj	k’aba-jæ	k’aba-t-æj
INESS	læǯ-ə	læg-t-ə	k’aba-jə	k’aba-t-ə
SUPER	læg-əl	læg-t-əl	k’aba-jəl	k’aba-t-əl
EQU	læg-aw	læg-t-aw	k’aba-jaw	k’aba-t-aw

erally stable across singular and plural, with minor morphophonological differences.[2] The plural marker is always *-t(æ)* or *-t:(æ)* (gemination is phonologically conditioned; see Alekseev & Tyutyunnikova 2023). There are no inflection classes, and the only difference in the form of case affixes in the singular is dependent on whether the stem is consonant-final or vowel-final. Genitive and inessive are always syncretic, as highlighted in red in Table 1. Nouns ending in velar stops can display morphologically conditioned palatalization (/g/ → /ǯ/, /k/ → /č/, /k’/ → /č’/) before the genitive / inessive affix *-ə*, although this is always optional (*læg-ə* is available in addition to *læǯ-ə*).

3.2 Personal pronouns

Ossetic uses dedicated personal pronouns only in the 1st and 2nd persons; see Table 2. These inflect differently from nouns: the genitive / inessive affix *-ə* is not available. In the singular, the nominative and genitive are suppletive and lack segmental case affixes (highlighted in red), while the rest of the cases are based on the genitive form as the stem and attach the same affixes as in the nominal system. The 1st and 2nd person plural pronouns do not distinguish between nominative and genitive forms, utilizing the bare stem for both (higlighted in green).

Most grammars (Abaev 1958, Axvlediani 1963, Bagaev 1965) describe the personal pronoun paradigms as defective, lacking an inessive form.[3]

3.3 Demonstratives

The inflection of demonstrative pronouns, shown in Table 3, shows differences from the inflection of both nouns and personal pronouns. The basic stems of demonstratives are *a-* (proximal) and *wə-* (distal) and they appear not only in the independent pronouns discussed herein, but also in adnominal forms *a-sə* ‘this’ and *wə-sə* ‘that’ (e. g. *wəsə læg* ‘that man’). The nominative and genitive singular have an identical form, which

[2] We do not include the comitative in the case paradigm because its status as a case (rather than a fused postposition) is unclear; see Erschler (2020).

[3] Gagkaev (1952: 63) provides inessive forms that are the same as the genitive: *mæn*, *dæw*, *max*, *səmax*. However, we have been unable to find contexts where these forms could be used in the locative sense.

Table 2: Inflection of personal pronouns

	æž ‘I’	*də* ‘thou’	*maχ* ‘we’	*šəmaχ* ‘you’
NOM	æž	də	max	šəmax
GEN	mæn	dæw	max	šəmax
DAT	mæn-æn	dæw-æn	maχ-æn	šəmaχ-æn
ALL	mæn-mæ	dæw-mæ	maχ-mæ	šəmaχ-mæ
ABL	mæn-æj	dæw-æj	maχ-æj	šəmaχ-æj
INESS	—	—	—	—
SUPER	mæn-əl	dæw-əl	maχ-əl	šəmaχ-əl
EQU	mæn-aw	dæw-aw	maχ-aw	šəmaχ-aw

consists of the stem with the addition of *-j* (highlighted in red). Other forms, except the inessive, use the regular nominal case suffixes, with the exception of the superessive, which uses the historically archaic form *-wəl*[4] instead of the modern *-əl*. The allative, superessive and equative are based on the bare stem. The dative and ablative insert *-m-* between the stem and the case affix (highlighted in green). The inessive forms have just *-m* as the exponent of the inessive case.[5]

In the plural, demonstratives attach the irregular suffix *-don* (found only with demonstratives and *kæsə* ‘which’) to the bare stem. The rest of the cases attach regularly, with the exception of the genitive, which is optional (i.e. both *wədon* and *wədon-ə* can be used in the sense ‘of them’). It is notable that while the regular plural cannot be attached to the demonstrative stems directly (**a-tæ*, **wə-tæ*), it can attach to the *-don* forms, yielding double plurals with associative plural meaning: *a-dæ-ttæ* ‘these and others’, *wə-dæ-ttæ* ‘those and others’ (the change *-don* + *tæ* → *-dættæ* is regular; see Alekseev & Tyutyunnikova 2023).

Note that the form of the distal superessive singular in the Cyrillic orthography is ‹ууыл›, i.e. *uwəl* in our transcription. However, in our view, this orthographic convention is due to the phonetic realization of /wə/ as [u] before another consonant, and the phonological form is /wəwəl/.

3.4 Interrogatives

The inflection of interrogatives, shown in Table 4, has much in common with that of demonstratives. The base stems are *kæ-* for the pronoun ‘who’ and *sæ-* for the pronoun ‘what’. Genitive forms (highlighted in red) have a final *-j*: *kæ-j* ‘of whom’, *sæj* ‘of what’.

[4]Here we follow the analysis of Abaev (1958: 28). Alternatively, *-w-* could be treated as part of the stem or as an epenthetic consonant, as in Bagaev (1965: 251). However, there is evidence that the form of this case marker used to be *-wəl* throughout the nominal system: the Digor counterpart is *-bæl*, continuing Proto-Iranian **upari* (Miller 1903: 46–47), and the *-wəl* form of the affix is attested in nonstandard Iron varieties, especially after velars (Bekoev 1985: 159).

[5]It is unclear whether the forms *am* and *wəm* belong to the case system, or are rather demonstrative adverbs ‘here’ and ‘there’. The same applies to the interrogative *kæm*, whose normal function is to mean ‘where’ rather than the morphologically predicted ‘in whom’. But the existence of the form *sæm* ‘in what’, shown below, indicates that we do have to recognize *-m* as a marker of inessive case.

Table 3: Inflection of demonstrative pronouns

	proximal		distal	
	sg.	pl.	sg.	pl.
NOM	a-j	a-don	wə-j	wə-don
GEN	a-j	a-don(-ə)	wə-j	wə-don(-ə)
DAT	a-m-æn	a-don-æn	wə-m-æn	wə-don-æn
ALL	a-mæ	a-don-mæ	wə-mæ	wə-don-mæ
ABL	a-m-æj	a-don-æj	wə-m-æj	wə-don-æj
INESS	a-m	a-don-ə	wə-m	wə-don-ə
SUPER	a-wəl	a-don-əl	wə-wəl	wə-don-əl
EQU	a-jaw	a-don-aw	wə-jaw	wə-don-aw

Table 4: Inflection of interrogative and reflexive pronouns

	či 'who'		*sə* 'what'		*xi* 'self'
	sg.	pl.	sg.	pl.	
NOM	či	či-tæ	sə	sə-tæ	—
GEN	kæ-j	kæj-t-ə	sæ-j	sæ-j-t-ə	xi
DAT	kæ-m-æn	kæ-m-æn-t-ə	sæ-m-æn	sæ-m-æn-t-ə	xi-s-æn
ALL	kæ-mæ	kæ-mæ-t-ə	sæ-mæ	sæ-mæ-t-ə	xi-mæ
ABL	kæ-m-æj	kæ-m-æj-t-ə	sæ-m-æj	sæ-m-æj-t-ə	xi-s-æj
IN	kæ-m	kæ-m-ə-t-ə	sæ-m	sæ-m-ə-t-ə	xi
SUPER	kæ-wəl	kæ-wəl-t-ə	sæ-wəl	sæ-wəl-t-ə	xi-wəl
EQU	kæ-jaw	kæ-jaw-t-ə	sæ-jaw	sæ-jaw-t-ə	xi-jaw

Nominative is suppletive: *či* 'who', *sə* 'what'. In the dative and ablative, *-m-* is inserted between the stem and the affix, while the inessive has a final *-m* (highlighted in green).

Interrogatives also have plural forms, which are formed in an unusual way: the nominative attaches the regular plural affix *-tæ*, while oblique cases consist of the corresponding singular form and the genitive plural *-t-ə*. The Digor variant of this system, which has optional doubling of the case marker, has been analyzed in Erschler (2022) from the DM perspective. While it would be potentially interesting to implement an LrFG analysis of this system, it is beyond the scope of this paper.

3.5 The reflexive

The reflexive paradigm is shown in Table 4 next to the interrogatives. Reflexives are almost never used without a possessive proclitic that copies the features of the antecedent, thus *mæ=xi* 'myself', *dæ=xi* 'thyself', etc. In some sources, *xædæg* is given as the "nominative" form of the reflexive; however, it does not function as a reflexive, but rather, as an emphatic marker or intensifier. We thus treat the reflexive paradigm as lacking a nominative form.

The reflexive paradigm shares with the personal pronouns the lack of an overt affix in the genitive. Like the demonstratives and the interrogatives, a consonant is inserted

Table 5: Clitic pronouns in Ossetic

	1sg.	1pl.	2sg.	2pl.	3sg.	3pl.
NOM	—	—	—	—	—	—
GEN	=mæ	=næ	=dæ	=wæ	=æj / =jæ	=sæ
DAT	=mən	=nən	=dən	=wən	=(j)ən	=sən
ALL	=mæm	=næm	=dæm	=wæm	=(j)æm	=sæm
ABL	=mæ	=næ	=dæ	=wæ	=zə	=sæ =zə
INESS	=mæ	=næ	=dæ	=wæ	=zə	=sæ =zə
SUPER	=məl	=nəl	=dəl	=wəl	=(j)əl	=səl
EQU	—	—	—	—	—	—
POSS	mæ= me=	næ= ne=	dæ= de=	wæ= we=	jæ= je=	šæ= še=

in the ablative and inessive (highlighted in green); but, unlike the former two classes, the consonant is *-s* and it is not present in the inessive, whose form is equivalent to the genitive (bare stem). The superessive affix has the form *-wəl*, like in the demonstrative and interrogative paradigms.

3.6 Pronominal clitics

Ossetic has an extensive system of second-position enclitics for all person-number combination and all case forms, with the exception of nominative and equative (see Table 5). The forms of these enclitics are irregular, although in the dative, allative and superessive one can see some similarities with the corresponding case affixes.

The syncretism patterns of the clitics, however, are noteworthy. In the 1st and 2nd persons, genitive, ablative and inessive are expressed by the same forms (in red). In the 3rd person singular, the genitive has a special form (*=æj* after consonants, *=jæ* after vowels, in blue) while the ablative and inessive are both expressed by the clitic *=zə*. In the 3rd person plural, like in the 1st / 2nd persons, the clitic *=sæ* (in red) can be used for genitive, ablative and inessive, but for the ablative-inessive, it competes with *=zə* (in green).

Ossetic also has possessive proclitics, which appear at the left edge of the NP and are mostly homonymous with the correponding genitive enclitics; their last vowel turns to *e* when merged with an initial front or central vowel of the following word. Their distribution overlaps with that of the full genitive pronouns, but not entirely (see Erschler 2009); we view them as situated outside of the case system proper and do not include them in our analysis.

3.7 Phrasal affixation

Like other languages with agglutinating nominal inflection, Ossetic allows using the case affix only on the last conjunct. When non-final conjuncts are nouns, they stand in the

nominative (unmarked) form (1). But when the non-final conjuncts are pronouns which use two-stem inflection (i.e. the 1st and 2nd person singular pronouns), they appear in the genitive (oblique stem) rather than the nominative form (2).

(1) *žawər æmæ alan-æn*
Z. and A.-DAT
'to Zaur and Alan'

(2) *mæn* / **æž* *æmæ alan-æn*
I.GEN I.NOM and A.-DAT
'to me and Alan'

Unlike case, the plural affix cannot be suspended in Ossetic and has to be repeated under coordination (3). Also note that in (3b) the phonological form of the first conjunct is not the base to which the case suffix would be attached (final *-æ* is removed in the oblique cases in the plural).

(3) a. *me=fšəmær æmæ xo-t-æn*
my=brother and sister-PL-DAT
'to my brother and sisters', *'to my brothers and sisters'

b. *me=fšəmær-ttæ æmæ xo-t-æn*
my=brother-PL and sister-PL-DAT
'to my brothers and sisters'

These facts are problematic for lexicalist accounts, because the pattern of suspended affixation is not connected to fixed forms of non-final conjuncts or their morphosyntactic features, but depends on the internal makeup and paradigmatic properties of the conjuncts in question. In a way, the syntax has to "see" the internal structure of words, which can only be implemented in a purely lexicalist approach by including such information in the c- or f-structure, blurring the distinction between morphology and syntax.

4 Prior approaches

4.1 Ellipsis account

The first paper to describe the data above from a theoretical perspective was Erschler (2012b), which postulates morpheme ellipsis along the lines of (4).

(4) *mæn-~~æn~~* *æmæ alan-æn*
I.GEN-DAT and A.-DAT
'to me and Alan'

A critique of the ellipsis account was presented in Belyaev (2014), which relied on facts such as (3b), where the "remnant" in the non-final conjuncts is not the base stem for the affix that appears on the final conjunct. A further argument is the fact that the same pattern as in suspended affixation appears with the postposition *ænæ* 'without', which clearly does not involve any ellipsis (5). Thus an analysis that can explain both phenomena is to be preferred to an analysis that treats their similarity as a coincidence.

(5) a. *ænæ* *žawər* / **žawər-ə*
without Z. Z.-GEN

b. *ænæ* *mæn* / **æž*
without I.GEN I.NOM

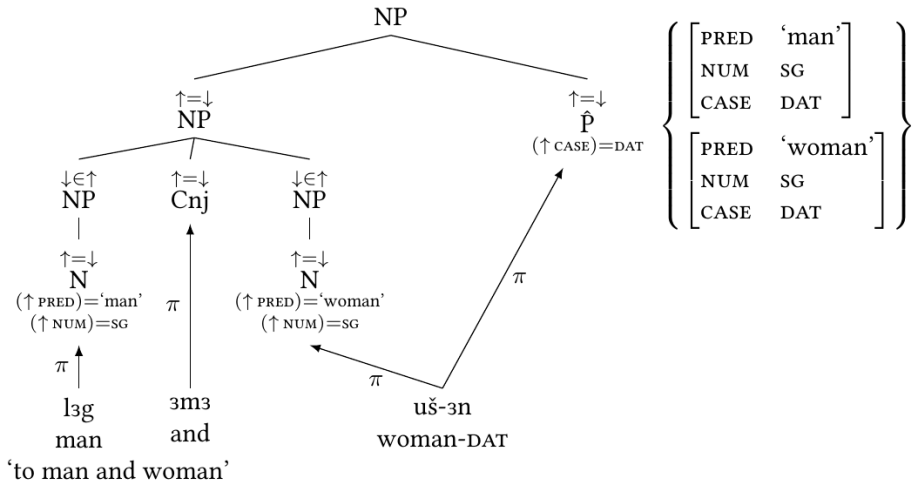

Figure 1: Coordination of nouns (Belyaev 2021)

It should be noted that Erschler (2018) presented another argument in favour of an ellipsis account: the fact that suspended affixation in Ossetic can also be used in alternative questions (6), which, according to Erschler, can be independently shown to involve ellipsis, both in Ossetic and cross-linguistically.

(6) *adæjmag* *kʷəd* *fæ-žənd?* *arv-ə* *c'æx(-æj)* *ævi* *šəǯət-æj*
person how PV-appear[PST.3SG] sky-GEN blue-ABL or earth-ABL
ra-jgʷərd?
PV-be_born[PST.3SG]
'How did the humans appear? Were they born from the sky blue or from clay?'
(Erschler 2018)

However, this argument is not theory-neutral, as it relies on a very specific understanding of ellipsis. While it is true that a full LFG account of alternative questions is (to the best of our knowledge) currently absent, it would be a *non sequitur* to adopt an ellipsis account for suspended affixation based on examples such as (6). Since LFG has no mechanism of postsyntactic deletion, in this paper we will assume that, all things being equal, a non-ellipsis account is preferable to an account that postulates the removal of morphological material.

4.2 LFG analysis with lexical sharing

The most recent version of the lexical sharing account of Ossetic case morphology and suspended affixation was presented in Belyaev (2021). The account is essentially lexicalist, but assumes that case features are introduced in a $\widehat{\text{P}}$ node that is adjoined to NP and is always coinstantiated with the adjacent N node. For nouns, the "nominative" form actually doubles as the nominative proper and as a "caseless" word that only instantiates N. This allows one to use bare nouns as non-final conjuncts in suspended affixation, in a structure like shown in Figure 1.

Personal pronouns require a different mapping between morphology and syntax. This time, the nominative (*æž*, *də*) is a fully marked case form (thus unavailable for

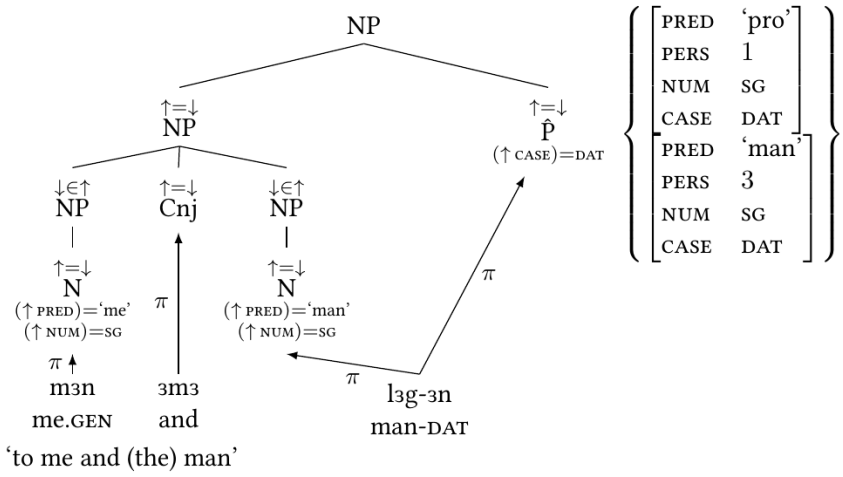

Figure 2: Coordination of a pronoun and noun (Belyaev 2021)

a. ⟨L, {NUM:sg}⟩
b. ⟨L, {NUM:sg, CASE:nom}⟩
c. ⟨L, {NUM:sg, CASE:gen}⟩
d. ⟨L, {NUM:pl}⟩
e. ⟨L, {NUM:pl, CASE:nom}⟩
f. ⟨L, {NUM:pl, CASE:gen}⟩

Figure 3: Content paradigm for Ossetic nominal inflection, fragment (Belyaev 2021)

suspended affixation), while the "genitive" (*mæn*, *dæw*) is either unmarked for case or marked as genitive. This accounts for the "genitive" appearing in nonfinal conjuncts; see Figure 2.

This analysis works on a technical level, but it is purely stipulative unless it is combined with a morphological module that can produce the needed lexical entries. Specifically, the morphology must generate lexical entries not only for all the cases-number combinations found in Ossetic, but also for the caseless forms, with the right homonymy patterns. In the standard model (Dalrymple 2015, Dalrymple et al. 2019), morphological features are formally independent from f-descriptions: hence, morphology itself must provide the needed information on the makeup of its paradigms. In the analysis of Belyaev (2021), this is handled by the PFM2 (G. T. Stump 2001, Stewart & Stump 2007) mechanism of "content paradigms": abstract sets of features that are to be expressed through the realizational rules. A fragment of the content paradigm for Ossetic nominal lexemes is shown in Figure 3. It can be seen that the paradigm includes both a nominative slot and a caseless slot.

The stems and realization rules ensure that correct syncretism patterns are achieved for the nominative, genitive and caseless forms. Nouns have a single stem which is unmarked for case, and thus the bare stem occurs in the caseless slot. Since there is no dedicated realization rule for the nominative, the same form also appears in the nominative slot through the Elsewhere Principle. The rest of the cases have their own separate suffixal exponents. The form paradigm for *læg* 'man' is shown in Figure 4.

For personal pronouns, nominative forms (*æž* 'I', *də* 'thou') are treated as suppletive, i.e. as marked nominatives. The "genitive" has the same status as the "nominative" of nouns, a bare stem (*mæn* 'me', *dæw* 'thee'). This form is not used for the nominative

a.	⟨*lɜg*, {sg}⟩	g.	⟨*lɜgtɜ*, {pl}⟩
b.	⟨*lɜg*, {sg, nom}⟩	h.	⟨*lɜgtɜ*, {pl, nom}⟩
c.	⟨*lɜǯə*, {sg, gen}⟩	i.	⟨*lɜgtə*, {pl, gen}⟩
d.	⟨*lɜgɜn*, {sg, dat}⟩	j.	⟨*lɜgtɜn*, {pl, dat}⟩
e.	⟨*lɜgmɜ*, {sg, all}⟩	k.	⟨*lɜgtɜm*, {pl, all}⟩
f.	⟨*lɜǯə*, {sg, in}⟩	l.	⟨*lɜgtə*, {pl, in}⟩

Figure 4: Form paradigm for *læg* 'man'

a.	⟨*mɜn*, {NUM:sg}⟩
b.	⟨*ɜž*, {NUM:sg, CASE:nom}⟩
c.	⟨*mɜn*, {NUM:sg, CASE:gen}⟩
d.	⟨*mɜnɜn*, {NUM:sg, CASE:dat}⟩

Figure 5: Paradigm for *æž* 'I', fragment

because there is a dedicated suppletive form, but it is used for the genitive because the affix *-ə* is restricted to occur only on nouns. This gives the form paradigm in Figure 5.

In the model of Dalrymple (2015) and Dalrymple et al. (2019), the morphological module provides pairs of forms and their associated m-features, which are then interpreted by the morphology-syntax interface to yield the category and f-description. Since this anlaysis relies on lexical sharing, m-features must also have information on which features are associated with which head. In Belyaev (2021), this is achieved within the PFM model by redefining the paradigm function so that it splits the morphological features into two bundles: one for N and one for $\widehat{\text{P}}$ (7). Coupled with the right mapping of m-features to m-descriptions, this ensures the structures in Figures 1 and 2.

(7) $\text{PF}\left(\langle \textsc{læg}, \{\textsc{num} : \text{sg}, \textsc{case} : \text{dat}\}\rangle\right) = \langle \textit{lægæn}, \langle \{\textsc{num} : \text{sg}\}_{\text{N}}, \{\textsc{case} : \text{dat}\}_{\widehat{\text{P}}}\rangle\rangle$

Although this analysis uses lexical sharing, it conforms to lexicalism in the wide sense: "words are built out of different structural elements and by different principles of composition than syntactic phrases" (Bresnan & Mchombo 1995: 181). Indeed, words are constructed entirely in the syntax-independent morphological module, and even their head sharing patterns are defined by the morphology rather than by the syntax. Lexical sharing itself is a fairly limited mechanism, and thus the analysis in Belyaev (2021) does not deviate much from the standard LFG model.

Yet we believe that there are a number of disadvantages to the analysis in Belyaev (2021). First, it is overly complex and includes a certain amount of redundancy. Not only are the m-features that are supplied by the morphology essentially duplicates of the corresponding f-structure features, but morphology also has to provide c-structure category information to determine which features are instantiated where, as in (7). The analysis also relies on PFM2's notion of content paradigms. As a realizational model, PFM2 needs to have information on what feature values are to be realized for a given lexical class. Yet, due to lexical integrity, this information cannot come from the syntax and has to be stipulated. But it is difficult to provide a purely morphological justification for the presence of caseless forms in the content paradigm, since they are always homonymous with other forms in the paradigm (nominative or genitive) and are only required for purely syntactic purposes (to be used in suspended affixation and with prepositions). Thus, while formally maintaining lexical integrity, the analysis effectively duplicates syntactic information in the morphology in the form of category annotations and content paradigms.

Second, the analysis fails to explain certain basic facts about Ossetic suspended affixation. It can readily be seen that suspended affixation is only possible when there is a case affix to suspend. When a case value does not have an affixal exponent, suspended affixation is not possible, as seen in (8).

(8) **žawər* / [OK]*žawər-ə æmæ mæn*
Z. Z.-GEN and I.GEN
'of Zaur and me'

In a lexicalist model, even with lexical sharing, the syntax does not have access to the internal structure of words. Hence, in the logic of Belyaev (2021), the only way to disallow the nominative in (8) is to stipulate – in the morphology – that for certain forms such as *mæn*, both case and number are associated with N and there is no "splitting" of features as in (7) and no co-instantiation of N and $\widehat{\text{P}}$. In this model, there is no way to state the obvious generalization that the reason why *žawər* is unavailable in (8) is that there is no affix that can scope over the coordinate phrase. This puts the analysis at an explanatory disadvantage vis-à-vis the ellipsis account (Erschler 2012b), which predicts (8) since there is no affix to be elided in this coordinate phrase.

Finally, adhering to lexical integrity means that enclitic pronouns have nothing to do with the morphological analysis: since they are irregular, they are simply provided to the syntax "as is", complete with their f-description. But the genitive–inessive–ablative syncretism found in the enclitic system has clear parallels in the inflection of nouns and pronouns. The strict separation between morphology and syntax obscures this similarity and requires one to use disjunctive f-descriptions for forms such as *=mæ* (1sg. genitive, inessive and ablative) instead of simpler, underspecified lexical entries.

In sum, in our view, all this shows that Ossetic suspended affixation presents a genuine problem for lexical integrity that cannot easily be overcome through partial solutions such as lexical sharing. While a lexicalist account is technically feasible, it suffers from redundancy and the need for *ad hoc* stipulations. Below we will show how most of these problems can be resolved if they key insights of Belyaev (2021) are carried over to LrFG, a framework inspired by both LFG and Distributed Morphology.

5 Analysis

5.1 Phrase structure and basic vocabulary items

The phrase structure that we propose for Ossetic case inflection in terms of LrFG is very similar to the one used in the analysis of Belyaev (2015), and shown in Figure 6.[6] The f-structure will become clear below, after the templates and vocabulary items (VIs) have been introduced.

The lowercase counterparts to category labels ("categorizers") are used following standard DM practice that has been carried over into most LrFG work. They attach to acategorial roots or functional elements to promote them to one of the major categories, acting as nominalizers, verbalizers, etc. Of course, no language treats all VIs for non-functional items as acategorial; if a VI is exclusively associated with some lexical category, it can be represented as a span of the root and the adjacent lowercase category. There is good evidence that many nominal roots in Ossetic are acategorial: most "adjectives" can also act as nouns (e.g. *xorž* can mean both 'good' and 'goodness'), and some nouns can attach adjectival morphology (e.g. *læg* 'man' has the comparative *læg-dær* 'manlier'); nouns can also productively form complex predicates with the verb *kænən*

[6] We analyze Ossetic as having a DP following arguments in Erschler (2019), which we find convincing.

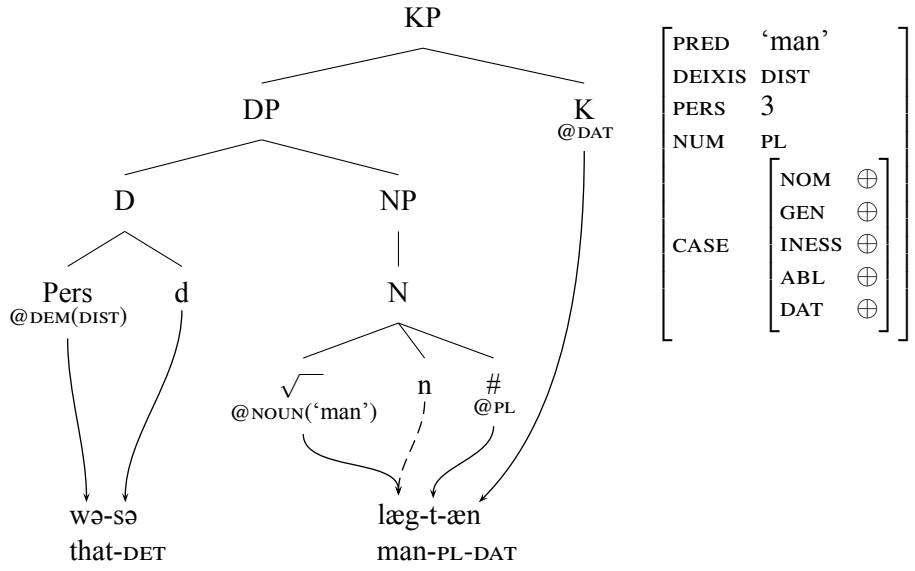

Figure 6: C-, v- and f-structures for Ossetic case-marked DPs

'do', which can be treated as a verbalizer, as done in the analysis by Grashchenkov (2018). Thus the decomposition of X^0 heads into roots and categorizers is not just a notational convention, but motivated in the syntax of Ossetic.

Overall, the tree in Figure 6 is an almost exact counterpart to the tree used in the lexical sharing analysis: the K node heads its own projection and is situated above NP/DP, just as $\widehat{\text{P}}$ in Belyaev (2021), while the plural morpheme is located below N, which indicates its syntactic irrelevance. In effect, this tree can be viewed as a "zoomed in" version of the tree in Figure 1, with the status of $\sqrt{\ }$, n/d and # not much different from "sub-lexical nodes" used in standard LFG (Bresnan et al. 2016: 368–369,384–385,395–396).

To get the realizations for case- and number-marked nouns, we propose the VI for nominal roots as in (9). Since the VI defines a realization only for the root, and there is no overt nominalizer for roots in Ossetic, the n node is "Pac-Man spanned" [7] with the root, which is indicated by a dashed line in Figure 6 and elsewhere. For the plural, the VIs in (10) can be used; we treat *-tæ* as a special realization that is constrained to occur in the nominative (double angle brackets signify equations that constrain the occurrence of the VI but do not participate in determining the most specific realization) due to examples like (3b), which show that *-æ* is not a nominative affix. Case markers are modeled as in (11), where the genitive is constrained as not occurring on pronouns.[8]

(9) $\langle [\sqrt{\ }], \{ @\text{NOUN}(\text{'man'}) \} \rangle \xrightarrow{v} \textit{læg}$

(10) a. $\langle [\#], \{ @\text{PL} \} \rangle \xrightarrow{v} \textit{-t}$

b. $\langle [\#], \left\{ \begin{array}{c} @\text{PL} \\ \langle\langle @\text{NOM} \rangle\rangle \end{array} \right\} \rangle \xrightarrow{v} \textit{-tæ}$

[7] Pac-Man spanning is a mechanism whereby a node which has no suitable exponent is spanned with an adjacent node if both map to the same f-structure; see, among others, Asudeh et al. (2022).

[8] An anonymous reviewer wonders whether the "suspended affixes" in Ossetic are actually clitics. Indeed, Ossetic case markers do not utilize the host identification mechanism (Asudeh et al. 2023) and are thus clitics or "leaners" rather than affixes in LrFG terms; however, due to their host sensitivity they should still be classified as affixes from the descriptive point of view.

(11) a. $\langle$ [K], $\left\{ \begin{array}{c} \text{@GEN} \\ \langle\!\langle \neg(\uparrow \text{PRED FN}) = \\ \text{pro} \rangle\!\rangle \end{array} \right\} \rangle \xrightarrow{\nu}$ *-ə*

b. $\langle$ [K], $\{$@DAT$\}\rangle \xrightarrow{\nu}$ *-æn*

c. $\langle$ [K], $\{$@ALL$\}\rangle \xrightarrow{\nu}$ *-mæ*

The VI for the demonstrative stem is given in (12a), while the suffix *-sə* that allows it to be used as an adnominal determiner is shown in (12b).

(12) a. $\langle$ [Pers], $\{$@DEM(DIST)$\}\rangle \xrightarrow{\nu}$ *wə* b. $\langle$ [d], _ $\rangle \xrightarrow{\nu}$ *-sə*

The templates for nouns (13) and demonstratives (14) are quite straightforward. For demonstratives, the PRED feature is optional because, as we will see below, the same stem occurs in the adnominal position and in independent pronouns. The @SG and @PL templates simply serve as shorthand for $(\uparrow \text{NUM}) = \text{SG}$ and $(\uparrow \text{NUM}) = \text{PL}$, respectively.

(13) NOUN(_P) := $(\uparrow \text{PRED}) = \text{\_P}$
$(\uparrow \text{PERS}) = 3$

(14) DEM(_DX) := $(\uparrow \text{PERS}) = 3$
$(\uparrow \text{DEIXIS}) = \text{\_DX}$

5.2 Case hirerachy

We model cases as a hierarchy inspired by the work of Caha (2009); however, instead of functional projections in a phrase structure tree, we use a system of privative features for each of the individual cases, organized into templates where the template for each successive case in the hierarchy inherits from the template for the preceding case (Asudeh et al. 2024); see a fragment in (15).

(15) a. NOM := $(\uparrow \text{NOM}) = \oplus$

b. GEN := @NOM $(\uparrow \text{GEN}) = \oplus$

c. INESS := @GEN $(\uparrow \text{INESS}) = \oplus$

The complete hierarchy that we assume for Ossetic is displayed in Figure 7. Note that unlike the configurational approach of Caha (2009), feature hierarchies of this type can be branching. In Ossetic, we claim that only the core five cases (nom., gen., iness., abl. and dat.) form a linear hierarchy; the other three (super., equ. and all.) are placed outside the hierarchy in that they do not inherit from any other cases. The motivations for specific inheritance patterns are indicated by the circled areas. We will discuss how exactly this case contingency operates for each individual instance below.

These templates for cases now allow us to construct the f-structure in Figure 6.

5.3 Nouns

In Figure 6, we saw the c- and f-structures for a noun-headed DP marked by an oblique case with a dedicated marker, dative. All the other case forms except the nominative have exactly analogous structures, modulo the case feature and its exponent. The nominative has no VI that can act as its exponent, and thus, per standard LrFG assumptions, the case node in this form forms a span with the closest node belonging to the same f-structure (so-called Pac-Man spanning). This is seen in Figure 8; ditto for the singular feature in the # node, which also has no VI that can instantiate it.

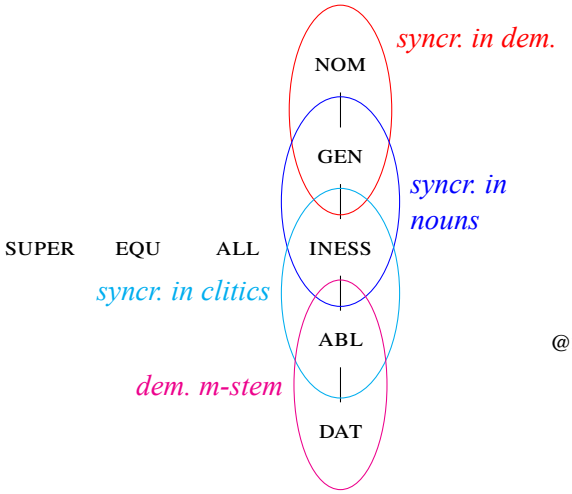

Figure 7: Case hierarchy for Ossetic

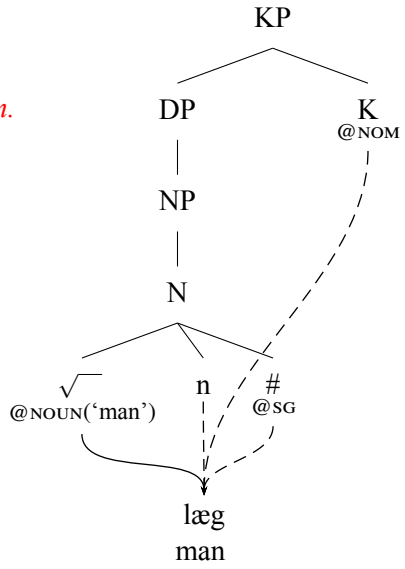

Figure 8: Structure of nominative nouns

Since the "nominative" form of the noun in this analysis is just the bare stem that is not specified as instantiating K in the vocabulary, it can be used as a nonfinal conjunct in the context of "suspended affixation" – which is, in our terms, coordination of two or more DPs under a single KP; see Figure 9. Since proper nouns like *žawər* 'Zaur' and *alan* 'Alan' can never act as adjectives or adverbs, we treat them as lexical spans, hence the solid lines in the mapping from n to the exponent.

Our case hierarchy in Figure 7 ensures the syncretism between genitive and inessive in noun inflection: the inessive directly inherits from the genitive, and thus they both share the feature [GEN ⊕]. There is no specialized VI that can act as an exponent for the inessive, thus the genitive VI, shown in (11a) above, is the most specific VI that is compatible with the features of the inessive.

5.4 Personal pronouns

1st and 2nd person singular pronouns differ from nouns in having dedicated suppletive nominative forms, which we treat as spans that include the sub-N^0 nodes as well as K (16a). The "genitive" is the bare, unmarked stem (16b). The template for personal pronouns is provided in (17).

(16) a. $\langle$ [Pers,n,#,K], $\left\{ \begin{matrix} @\text{PRON}(1\ \text{SG}) \\ @\text{NOM} \end{matrix} \right\} \rangle \xrightarrow{\nu}$ *æž*

b. $\langle$ [Pers,n,#], $\{ @\text{PRON}(1\ \text{SG}) \} \rangle \xrightarrow{\nu}$ *mæn*

(17) PRON(_PERS _NUM) :=
$(\uparrow \text{PRED}) = \text{'pro'}$
$(\uparrow \text{PERS}) = \text{\_PERS}$
$(\uparrow \text{NUM}) = \text{\_NUM}$

The structure of the suppletive nominative is shown in Figure 10. Unlike the bare stems of nouns, bare stems of pronouns cannot be used for the nominative, because both the c-structure features and the f-structures described by (16a) subsume those described by (16b). But in the genitive, using the bare stem with a Pac-Man spanned K head (mapping shown as dashed line), shown in Figure 11, is the only option because there is

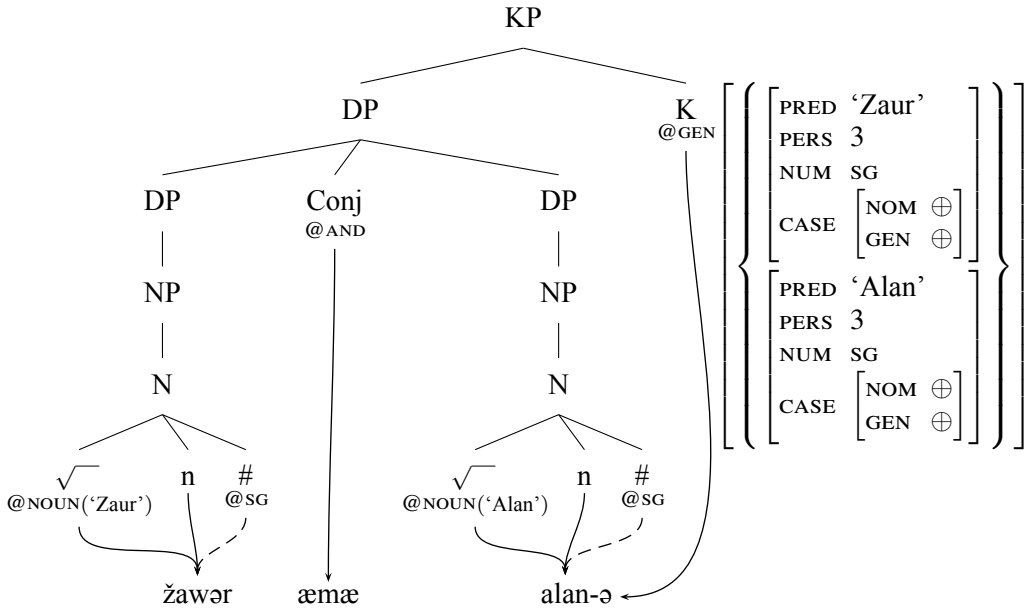

Figure 9: C- and f-structures for suspended affixation with nouns

neither a suppletive genitive nor a genitive affix compatible with pronouns available. At the same time, as shown in Figure 12, since the VI for the bare stem does not expone the K node or constrain the case feature, it can function as a non-final conjunct in suspended affixation and serve as the stem for all non-nominative cases.

Plural 1st and 2nd person pronouns have a single stem that is unmarked for case; see (18). Since the genitive *-ə* is unavailable, the same form also fills in the genitive slot; presumably, the inessive is unavailable for semantic reasons. Note that unlike the singular pronouns, the VIs do not span the # head, because the plural suffix is in fact available for these pronouns: the forms *max-tæ* (we-PL) and *šəmax-tæ* (you-PL) are attested in certain contexts.

(18) $\langle$ [Pers, n], $\{$@PRON(1 PL)$\}\rangle \xrightarrow{\nu}$ *max*

We can now turn to the question of how the ungrammaticality of (8), where the genitive Pac-Man spanned with the final conjunct *mæn* 'me' is shared with the first conjunct, is to be explained under this analysis. As seen in Figure 11, in the genitive forms of the 1st and 2nd person pronouns, the K node is Pac-Man spanned with the stem. It seems reasonable to assume the following general constraint on spanning (or at least on Pac-Man spanning): c-structure nodes that participate in a span must map to the same f-structure, or, in more formal terms: $\forall v.\exists! f.\forall n \in \nu^{-1}(v).\phi(n) = f$. That is, for every v-structure v (that is, a morphological exponent) there is one and only one f-structure f such that any node n that is realized by v maps to f. When two or more DPs are coordinated under one K, the nodes under N^0 map to the f-structure of the final conjunct, while K maps to the whole f-structure set for the coordinate phrase; thus the constraint is violated.[9] It remains to be seen, as an empirical question, whether this

[9]The same constraint explains why nominative coordinate phrases with a non-final pronominal stem like **mæn æmæ alan* 'me and Alan' are ungrammatical. In this example, too, the nominative K head is

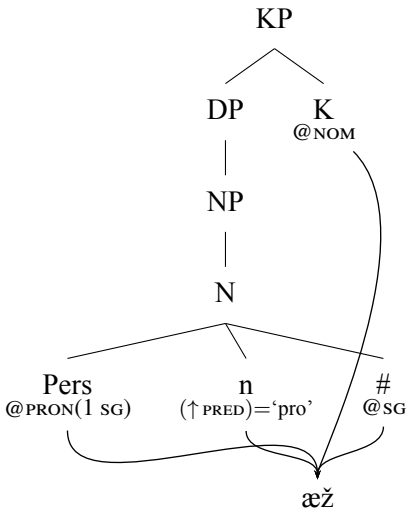

Figure 10: Suppletive nominative

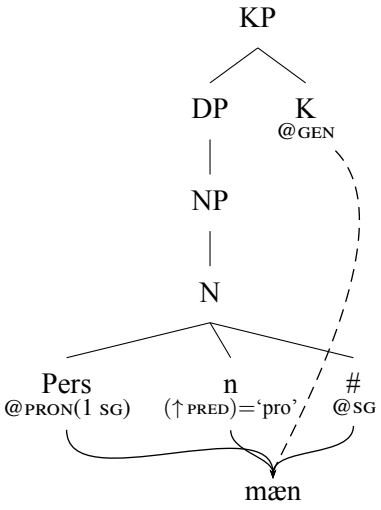

Figure 11: Bare oblique as genitive

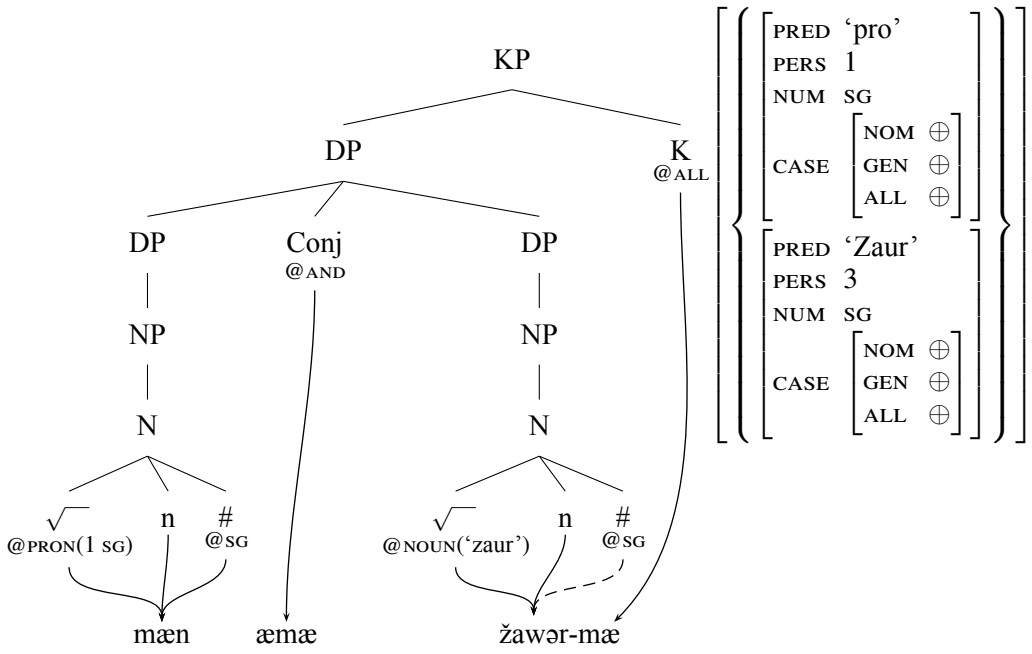

Figure 12: C- and f-structures for suspended affixation with pronoun and noun

constraint is too strong.

5.5 Demonstratives, interrogatives and reflexives

Demonstratives have a more complex paradigm structure. They appear to use three distinct irregular forms: (a) the *j*-form in the nominative and genitive (*wə-j*); (b) the *m*-stem in the dative, inessive and ablative; (c) the bare stem, as expressed by the VI in (12a) above, in the rest of the cases (*wə-*). The marker *-j* can be defined as an exponent of singular number in # and the nominative case in K (19); this predicts its use in the genitive as well (since the genitive *-ə* is constrained not to occur on pronouns).

(19) $\langle$ [#, K], $\left\{ \begin{array}{c} @\textsc{nom} \\ \langle\langle(\uparrow \textsc{deixis})\rangle\rangle \\ @\textsc{sg} \\ \langle\langle(\uparrow \textsc{pred fn}) =_c \textsc{pro}\rangle\rangle \end{array} \right\} \rangle \xrightarrow{\nu}$ *-j*

Since the inessive *wə-m* serves as the stem for abl. *wə-m-æj* and dat. *wə-m-æn*, we could define *-m-* as a stem extender (an exponent for the n head) constrained as $\langle\langle @\textsc{iness}\rangle\rangle$. This would mean that the inessive has no separate exponent and is Pac-Man spanned with the "inessive stem", which in turn predicts the possibility of using the inessive forms *am*, *wəm* in suspended affixation. This prediction is not borne out; neither the *m*-stem forms nor the bare stems can be used in suspended affixation:

(20) **wə-m* *æmæ* *alan-æn*
that-IN and A.-DAT
('to him and Alan')

(21) **wə* *æmæ* *alan-mæ*
that and A.-ALL
('towards him and Alan')

It thus appears more correct to consider the inessive *-m* as a case affix that is distinct from the stem-forming *-m*. An additional confirmation for this analysis is the reflexive paradigm (Table 4), in which the stem marker *-s-* surfaces in the ablative and dative, but not the inessive. This gives the following VIs for the two *-m* markers:

(22) a. $\langle$ [#, K], $\left\{ \begin{array}{c} @\textsc{iness} \\ \langle\langle(\uparrow \textsc{deixis})\rangle\rangle \\ @\textsc{sg} \\ \langle\langle(\uparrow \textsc{pred fn}) =_c \textsc{pro}\rangle\rangle \end{array} \right\} \rangle \xrightarrow{\nu}$ *-m*$_1$ b. $\langle$ [n, #], $\left\{ \begin{array}{c} \langle\langle @\textsc{abl}\rangle\rangle \\ \langle\langle(\uparrow \textsc{deixis})\rangle\rangle \\ @\textsc{sg} \\ \langle\langle(\uparrow \textsc{pred fn}) =_c \textsc{pro}\rangle\rangle \end{array} \right\} \rangle \xrightarrow{\nu}$ *-m*$_2$

In effect, we postulate two homonymous *-m* markers: the stem marker and the inessive case marker. This can be indirectly confirmed by data from Digor Ossetic, where the distal demonstrative forms for dative, ablative and inessive are *wo-m-æn*, *wo-m-æj* and *wo-m-i*, respectively. As in Digor, this suggests that in all three forms *-m* is a stem marker. Yet in the plural, where the distal stem is *won-*, the same three cases have the forms *won-æn*, *won-æj* and *won-æ-**mi***. The latter form suggests that the inessive exponent in Digor is *-mi*, and the *-m* in the inessive is not part of the stem.

We further have to explain why *-m*$_1$ (or *-s* in the reflexive) cannot appear without a following overt case affix. One way to explain this is to explicitly assert that *-m* forms a bound stem. In LrFG, this can be done by supplying the VI with the annotation (HOST •), an inside-out statement requiring this VI to be the host for some other VI.

Pac-Man spanned with the noun stem, and thus cannot scope over non-final conjuncts.

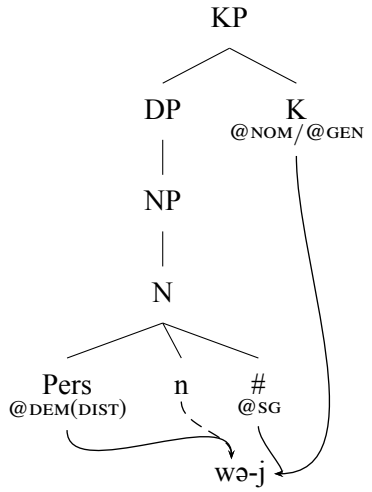

Figure 13: Demonstrative nom. / gen.

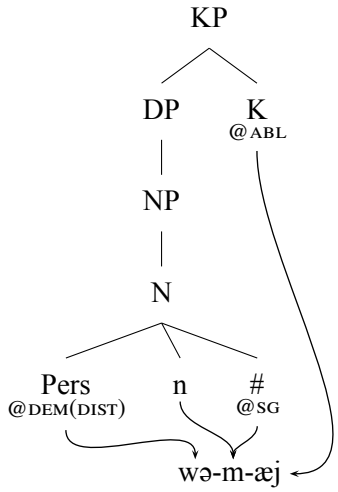

Figure 14: Demonstrative ablative

We can similarly characterize the demonstrative stem in (12) as a bound stem. It remains to be seen whether this stipulation is truly required, or a deeper explanation could be found for the bound status of these forms.[10] The structure for the nominative/genitive form is shown in Figure 13 (@NOM/@GEN abbreviates two different trees); for the *m*-stem ablative, in Figure 14.

The plural marker *-don* can be analyzed as occupying the n node (23), given that it is compatible with the second plural in *-tæ*. Note that in our analysis, the number features of pronouns are introduced by their functional heads, so *-don* does not really function as a plural marker *per se*, but rather, as a nominalizer that is licensed by a plural pronoun.

(23) $\langle$ [n], $\left\{ \begin{array}{c} \langle\langle(\uparrow \textsc{deixis})\rangle\rangle \\ \langle\langle @\textsc{pl}\rangle\rangle \end{array} \right\} \rangle \xrightarrow{\nu}$ *-don*

The paradigm structure of the interrogatives is essentially the same as that of demonstratives and we can generally use similar VIs, with the exception that the nominative *či* 'who' and *sə* 'what' should be defined as suppletive VIs; see (24).

(24) a.$\langle$ [Pers,n,#,K], $\left\{ \begin{array}{c} (\uparrow \textsc{pred}) = \text{'pro'} \\ (\uparrow \textsc{pers}) = 3 \\ (\uparrow \textsc{spec}) = \textsc{wh} \\ @\textsc{nom} \end{array} \right\} \rangle \xrightarrow{\nu}$ *či* b.$\langle$ [Pers], $\left\{ \begin{array}{c} (\uparrow \textsc{pred}) = \text{'pro'} \\ (\uparrow \textsc{pers}) = 3 \\ (\uparrow \textsc{spec}) = \textsc{wh} \end{array} \right\} \rangle \xrightarrow{\nu}$ *kæ*

Note that if the VIs *kæ-* and *sæ-* are defined as bound stems, interrogatives turn out to be the only lexical class that does not have caseless forms available for independent

[10] The ungrammaticality of *wə* as an independent word can be explained by the requirement that a phonological word in Ossetic be at least bimoraic; *wə* has a short vowel and thus only one mora (see Borise & Erschler 2022). As for *wəm*, there is independent evidence that syllable-final *-m* may or may not have a mora (Alekseev & Tyutyunnikova 2023), thus the two *-m* morphemes could have different phonological status. However, this explanation does not apply to *a* 'this', which has a long vowel yet cannot be used independently in modern Ossetic. Neither does it work for the reflexive stem *xi-s-*, which would be an admissible word from the prosodic point of view; however, *-s-* can alternatively be analyzed as an epenthetic, because the same consonant appears with some preverbs attaching to vowel-initial stems, cf.: *agurən* 'to look for' (ipfv.), *ba-s-agurən* 'to look for' (pfv.).

use. This correctly predicts, as in Belyaev (2021), that interrogatives cannot be used with suspended affixation; the only option is to repeat the case marker, which, in our analysis, means to coordinate two complete KPs:

(25) **či* / **kæj* / **kæm* / [OK]*kæm-æj* *æmæ* *sæm-æj*
who.NOM who.GEN who.IN who-ABL and what-ABL
'from whom and what'

For reflexives, *xi* is the exponent conditioned as @GEN, while *-s-* is defined exactly as *-m* in (22). Since there is no inessive exponent compatible with reflexives, *xi* also serves as the inessive, as predicted.

5.6 Clitics

Finally, we turn to the analysis of second-position clitics. As seen in Table 5, the forms of the clitics are not directly derivable from normal case endings, even though there are certain regularities within the clitic system: the single-consonant stems for the person-number features and the endings for some of the cases: *-ən* (dative), *-æm* (allative), *-əl* (superessive). However, irregularities far outweigh the regularities, and since this is a closed class of elements, we can assume that they are not synchronically decomposable and are instead stored in the lexicon as complete VIs. Following standard LFG practice, we also assume that clitics occupy the special syntactic category CL (Bögel et al. 2010, Lowe & Belyaev 2015).

The irregularity of the forms themselves does not mean that the structure of the *paradigm* cannot be generalized, since clitics encode the same case features as nouns do. We will now show that the hierarchy in Figure 7 handles the syncretism patterns here as well. The dative, superessive and allative have dedicated forms and are thus completely marked for their respective cases (note that these are all at the lower end of or outside the hierarchy, and thus these forms cannot be used for anything else). The syncretic genitive-ablative-inessive forms *=mæ* 'me', *=dæ* 'thee', *=næ* 'us', *=wæ* 'you' and *=sæ* 'them' can be viewed as realizing the @GEN template, from which the ablative and inessive inherit. No clitic can be used for the equative, because there is no dedicated form and the equative deos not inherit from any other case in the hierarchy in Figure 7.

(26) $\langle$ [CL], $\left\{ \begin{array}{c} @\textsc{pron}(3\ \textsc{pl}) \\ @\textsc{gen} \end{array} \right\}\rangle \xrightarrow{\nu}$ *=sæ*

The 3rd person clitics are somewhat special. The 3sg. genitive *=æj* / *=jæ* is not syncretic with any other case. In terms of our analysis, this means that in addition to the realizational specifications in (26), it is also explicitly prevented from expressing the inessive (and consequently, all cases lower in the hierarchy); see (27). The clitic *=zə* is used for the inessive and ablative in the singular and, optionally, in the plural, which means that it can be defined as realizing @INESS but unspecified for number; see (28).

(27) $\langle$ [CL], $\left\{ \begin{array}{c} @\textsc{pron}(3\ \textsc{sg}) \\ @\textsc{gen} \\ \langle\langle \neg(\uparrow \textsc{in}) \rangle\rangle \\ \langle\langle \neg(\uparrow \textsc{equ}) \rangle\rangle \end{array} \right\}\rangle \xrightarrow{\nu}$ *=æj*

(28) $\langle$ [CL], $\left\{ \begin{array}{c} @\textsc{iness} \\ (\uparrow \textsc{pers}) = 3 \\ (\uparrow \textsc{pred}) = \text{'pro'} \end{array} \right\}\rangle \xrightarrow{\nu}$ *=zə*

This definition of *=zə* leads to a welcome "side effect": since *=zə* is unmarked for number, and *=sæ* is underspecified for case, **MostInformative**$_f$ (see Asudeh & Siddiqi 2023) ranks both as equally appropriate candidates for exponing CL as neither of the f-structures required by the VIs subsumes the other, i.e. exactly the kind of free variation that we see in the paradigm in Table 5.

6 Behaviour of the preposition 'without'

The distribution of nominal and pronominal forms used with *ænæ* 'without', as seen in (5) above, can be accounted for within this analysis if we assume that this preposition attaches to DPs rather than KPs. In this configuration, it is only compatible with those forms that can be used independently without a case exponent – which are exactly the "nominative" of nouns and the "genitive" of personal pronouns.

This analysis also implies that those lexical items that lack free "caseless" forms, viz. interrogatives, are unable to be used with this preposition, just as they cannot be used in suspended affixation (25). This is indeed the case: both ***ænæ či*** (with the nominative) and ***ænæ kæj*** (with the genitive) are ungrammatical; to express the meaning 'without whom', one has to use the fallback ablative government option: *ænæ kæmæj*.

7 Conclusions

In this paper, we propose a novel analysis of Ossetic suspended affixation in terms of LrFG. While being conceptually close to the lexical sharing analysis of Belyaev (2021), it has the advantage of abandoning the redundant distinction between morphological and syntactic features and replacing the arbitrary content paradigms of PFM2 with standard LFG phrase structure rules. The lack of "suspended" affixation with portmanteau forms is also accounted for by constraints of the spanning mechanism of LrFG. Furthermore, using a model where morphology directly expones the syntax allows us to use a hierarchy in the spirit of Caha (2009) to model case syncretism and allomorphy in both regular inflection and in the clitic subsystem. This leads to the analysis capturing all the data of prior analyses as well as predicting the free variation between two clitic exponents in the 3rd person plural inessive and ablative. The use of features instead of functional projections used in Nanosyntax analyses also allows for a far more flexible and language-specific modeling of case hierarchies, with the option of branching. A question that is to be resolved in future work is the "syntactically inert" status of bare non-genitive stems, which requires stipulation in the current version of the analysis. It remains to be seen whether this stipulation, which was covertly present in Belyaev (2021) as well, is really needed, or the relevant facts can be explained by a deeper phonological or morphological generalization.

References

Abaev, Vasilij I. 1958. *Istoriko-ètimologičeskij slovar' osetinskogo jazyka*. [Historical etymological dictionary of Ossetic]. Vol. 1: *A-k'*. Moscow & Leningrad: Izdatel'stvo AN SSSR.

Alekseev, Danil A. & Varvara O. Tyutyunnikova. 2023. Est' li v osetinskom jazyke russkie ery? k tipologii «nevidimyx» glasnyx s osetinskoj perspektivy [Are there Russian *yer*s in Ossetic? On the typology of "invisible" vowels from the Ossetic perspective]. In *Dvadcataja konferencija po tipologii i grammatike dlja molodyx issledovatelej. tezisy dokladov*. [20th Conference on Typology and Grammar for Young Researchers. Book of Abstracts], 5–8. Saint Petersburg: ILI RAN.

Asudeh, Ash, Bronwyn Bjorkman, Frances Dowle, Neil Myler, Daniel Siddiqi & Lisa Sullivan. 2024. Fusional morphology, metasyncretism, and secondary exponence: A morphemic, realizational approach to Latin declension. In Miriam Butt, Jamie Y. Findlay & Ida Toivonen (eds.), *Proceedings of the LFG'24 conference*, 45–68. Konstanz: PubliKon.

Asudeh, Ash, Tina Bögel & Dan Siddiqi. 2022. Modelling exponents. Talk at Mo-MOT 2022. https://lrfg.online/wp-content/uploads/2022/11/Asudeh-Bogel-Siddiqi-2022-MOMOT22.pdf (24 July, 2023).

Asudeh, Ash, Tina Bögel & Daniel Siddiqi. 2023. Modelling exponents. In Miriam Butt, Jamie Y. Findlay & Ida Toivonen (eds.), *Proceedings of the LFG'23 Conference*, 23–44. Konstanz: Publikon. https://lfg-proceedings.org/lfg/index.php/main/article/view/38 (2 October, 2025).

Asudeh, Ash & Daniel Siddiqi. 2023. Morphology in LFG. In Mary Dalrymple (ed.), *The handbook of Lexical Functional Grammar*, 855–901. Berlin: Language Science Press. https://doi.org/10.5281/zenodo.10185976.

Axvlediani, Georgij S. (ed.). 1963. *Grammatika osetinskogo jazyka* [A Grammar of the Ossetic language]. Vol. 1: *Fonetika i morfologija* [Phonology and morphology]. Ordžonikidze: NII pri Sovete ministrov Severo-Osetinskoj ASSR.

Bagaev, Nikolaj K. 1965. *Sovremennyj osetinskij jazyk* [Modern Ossetic language]. *Fonetika i morfologija* [Phonology and morphology]. Ordžonikidze: Severo-Osetinskoe knižnoe izdatel'stvo.

Bekoev, Dmitrij G. 1985. *Ironskij dialekt osetinskogo jazyka* [Iron dialect of Ossetic]. Ordzhonikidze: Iryston.

Belyaev, Oleg. 2015. Systematic mismatches: Coordination and subordination at three levels of grammar. *Journal of Linguistics* 51(2). 267–326. https://doi.org/10.1017/S0022226714000450.

Belyaev, Oleg. 2021. Paradigm structure influences syntactic behaviour: Ossetic case inflection. In I Wayan Arka, Ash Asudeh & Tracy Holloway King (eds.), *Modular design of grammar*, chap. 16, 251–281. Oxford: Oxford University Press. https://doi.org/10.1093/oso/9780192844842.003.0016.

Belyaev, Oleg I. 2014. Osetinskij kak jazyk s dvuxpadežnoj sistemoj: gruppovaja fleksija i drugie paradoksy padežnogo markirovanija [Ossetic as a two-case language: Suspended affixation and other case marking paradoxes]. *Voprosy jazykoznanija* 6. 31–65.

Bögel, Tina, Miriam Butt, Ronald M. Kaplan, Tracy Holloway King & John T. Maxwell III. 2010. Second position clitics and the prosody-syntax interface. In Miriam Butt & Tracy Holloway King (eds.), *Proceedings of the LFG'10 conference*. Stanford, CA: CSLI Publications. https://web.stanford.edu/group/cslipublications/cslipublications/LFG/15/lfg10.html (14 October, 2020).

Borise, Lena & David Erschler. 2022. Mora count and the alignment of rising pitch accents in Iron Ossetic. In *Proccedings of Speech Prosody 2022*, 871–875. https://doi.org/10.21437/SpeechProsody.2022-177.

Bresnan, Joan, Ash Asudeh, Ida Toivonen & Stephen Wechsler. 2016. *Lexical-functional syntax*. 2nd edn. Oxford: Wiley Blackwell.

Bresnan, Joan & Samuel A. Mchombo. 1995. The lexical integrity principle: Evidence from Bantu. *Natural Language & Linguistic Theory* 13. 181–254. https://doi.org/10.1007/BF00992782.

Broadwell, George Aaron. 2008. Turkish suspended affixation is lexical sharing. In Miriam Butt & Tracy Holloway King (eds.), *Proceedings of the LFG'08 conference*. Stanford, CA: CSLI Publications. http://web.stanford.edu/group/cslipublications/cslipublications/LFG/13/papers/lfg08broadwell.pdf (23 December, 2025).

Caha, Pavel. 2009. *The nanosyntax of case*. University of Tromsø dissertation.

Dalrymple, Mary. 2015. Morphology in the LFG architecture. In Miriam Butt & Tracy Holloway King (eds.), *Proceedings of the LFG'15 conference*, 64–83. Stanford, CA: CSLI Publications.

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

Erschler, David. 2009. Possession marking in Ossetic: Arguing for Caucasian influence. *Linguistic Typology* 13. 417–450. https://doi.org/10.1515/LITY.2009.021.

Erschler, David. 2012a. From preverbal focus to preverbal "left periphery": the ossetic clause architecture in areal and diachronic perspective. *Lingua* 122(6). 673–699.

Erschler, David. 2012b. Suspended affixation in Ossetic and the structure of the syntax-morphology interface. *Acta Linguistica Hungarica* 59(1–2). 153–175. https://doi.org/10.1556/ALing.59.2012.1–2.7.

Erschler, David. 2018. Suspended affixation as morpheme ellipsis: Evidence from Ossetic alternative questions. *Glossa* 3(1). 12. https://doi.org/10.5334/gjgl.501.

Erschler, David. 2019. A new argument for existence of the DP in languages without articles. *Journal of Linguistics* 55(4). 879–887. https://doi.org/10.1017/S0022226719000288.

Erschler, David. 2020. Iron Ossetic. In Maria Polinsky (ed.), *The Oxford handbook of languages of the Caucasus*, 641–688. Oxford: Oxford University Press.

Erschler, David. 2022. Iterated D-layers and multiple case exponence: The structure and significance of a morphological *rarissimum*. *Glossa: a journal of general linguistics* 7(1). 1–38. https://doi.org/10.16995/glossa.9528.

Gagkaev, Konstantin E. 1952. *Očerk grammatiki osetinskogo jazyka* [A sketch of Ossetic grammar]. Ordžonikidze: Gos. izd-vo Severo-Osetinskoj ASSR.

Grashchenkov, Pavel V. 2018. Meždu leksikonom i sintaksisom, fonologiej, semantikoj — interfejsnye javlenija v osetinskix složnyx predikatax [Between Lexicon, Syntax, Phonology, Semantics: the Interface Phenomena in the Ossetic Complex Predicates]. *Typology of Morphosyntactic Parameters* 1(1). 73–87.

Lowe, John J. 2016. English possessive 's: clitic *and* affix. *Natural Language & Linguistic Theory* 34. 157–195. https://doi.org/10.1007/s11049-015-9300-1.

Lowe, John J. & Oleg Belyaev. 2015. Clitic positioning in Ossetic. In Miriam Butt & Tracy Holloway King (eds.), *Proceedings of the LFG15 Conference*, 229–249. Stanford, CA: CSLI Publications.

Miller, Wsewolod. 1903. *Die Sprache der Osseten*. Strassburg: Trübner.
Stewart, Tom & Gregory Stump. 2007. Paradigm Function Morphology and the morphology/syntax interface. In Gillian Ramchand & Charles Reiss (eds.), *The Oxford handbook of linguistic interfaces*, 383–421. Oxford: Oxford University Press.
Stump, Gregory. 2016. Paradigms at the interface of a lexeme's syntax and semantics with its inflectional morphology. In Daniel Siddiqi & Heidi Harley (eds.), *Morphological metatheory*, 27–58. Amsterdam: John Benjamins. https://doi.org/10.1075/la.229.02stu.
Stump, Gregory T. 2001. *Inflectional morphology: A theory of paradigm structure*. Cambridge: Cambridge University Press.
Wescoat, Michael T. 2002. *On lexical sharing*. Stanford University dissertation. https://searchworks.stanford.edu/view/4814040 (22 December, 2025).