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## SUSPENDED AFFIXATION IN OSSETIC AND THE STRUCTURE OF THE SYNTAX–MORPHOLOGY INTERFACE\*

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**Abstract:** I describe and analyze suspended affixation (a situation when an affix only appears on the rightmost coordinand, but takes scope over all the coordinands) of case markers in Ossetic. Based on how suspended affixation interacts with allomorphy and certain case conflicts, I propose that suspended affixation arises due to phonological deletion of exponents, and that semantic information is still available at this stage. I speculate that it is this stage of derivation that should be considered the morphological module.

**Keywords:** syntax–morphology interface, allomorphy, case conflicts, ellipsis

### 1. Introduction

A number of recent proposals converge on the idea that overt case marking is assigned by a separate morphological module (McFadden 2004;

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Heath 2007; Legate 2008). What operations are available to this module? What kind of information is visible to it? To more precisely delineate the position of morphology in derivation, in this paper I examine one ellipsis-like phenomenon of unclear nature, suspended affixation, and explore its interaction with allomorphy and case conflicts—morphological phenomena *par excellence*. Specifically, I study suspended affixation in Ossetic and its interaction with the morphosyntax of pronouns and numeral phrases.

Suspended affixation is a situation when an affix only appears on the rightmost coordinand, but takes scope over all coordinands (I will consider only examples with two coordinands in this paper):

- (1) (a) XP<sub>1</sub> & XP<sub>2</sub>-AFF instead of XP<sub>1</sub>-AFF & XP<sub>2</sub>-AFF  
 (b) amangul özi-niñ müšük wä it-**lar-i-ni** yaxši köridu  
 Amangul s/he-gen<sup>1</sup> cat and dog-pl-3sg-acc well looks  
 ‘Amangul loves her cats and dogs.’ Uyghur (Turkic, Northwestern China)

The “mirror image” structure is logically possible, but much less common cross-linguistically:

- (2) (a) AFF-XP<sub>1</sub> & XP<sub>2</sub> instead of AFF-XP<sub>1</sub> & AFF-XP<sub>2</sub>  
 (b) s-**jə**-pçaçe-re f’ale-re zezaox  
 1sg-al-girl-& boy-& fight.each.other  
 ‘My son and daughter are fighting.’<sup>2</sup> Adyghe (Northwestern Caucasian)

The term “suspended affixation” was apparently coined by Lewis (1967). Alternative terms used in the literature are *brachylogy*, *morphological ellipsis*, both used by Pounder (2006), *coordination reduction*, Kenesei (2007), and *unbalanced coordination*, Johannessen (1998). The latter work provides a number of examples of this phenomenon from the world’s languages.

Logically possible accounts for suspended affixation are listed in (3).

<sup>1</sup> The following abbreviations are used: abl—ablative; acc—accusative; aff—affix; al—alienable; all—allative; ctr—contrastive topic; dat—dative; def—definite; fut—future; idf—indefinite; loc—locative; nom—nominative; obl—oblique; pl—plural; poss—possessive; prs—present; pst—past; sg—singular; sup—superessive; &—coordination marker.

<sup>2</sup> I thank Yury Lander who elicited this example for me.

- (3) (a) affixation to &P  
 [ &P XP<sub>1</sub> & XP<sub>2</sub> ]-AFF (b) marking on one conjunct  
 [ &P XP<sub>1</sub> & XP<sub>2</sub> -AFF ]  
 (c) deletion  
 [ &P XP<sub>1</sub>-~~AFF~~ & XP<sub>2</sub>-AFF ]

While cross-linguistically all the three analyses might be applicable, in this paper, I argue for, and explore implications of, scenario (3c), post-spellout deletion.

Suspended affixation is obviously important for our understanding of the syntax–morphology interface structure. However, it is relatively rarely addressed in theoretical literature.<sup>3</sup> Kornfilt (1996) and Kahnemuyipour–Kornfilt (2011) deal with some specific verb forms in Turkish, whereas Broadwell (2008) proposes an LFG analysis of these facts. Orgun (1995) analyzes a constraint in Turkish, whereby a case marker can be suspended only together with plural marker and possessive suffixes, if the latter are present.

Kenesei (2007) assumes the deletion analysis and suggests a classification of morphemes based on their degree of autonomy. He proposes that only right-suspension can exist (based on semantic differences between rightward and leftward ellipsis), i.e., that examples of type (2) should be ungrammatical.

Pounder (2006) discusses the phenomenon at length, and suggests that “structure-sharing analyses of ellipsis may be preferable to deletion analyses”.

Johannessen (1998) uses suspended affixation data to argue for her theory of &P structure and favors the analysis in (3b): according to her theory, it is the coordinand in Spec &P that receives the marking.

Kabak (2007), a pre-theoretical study, proposes a constraint on non-final conjunct: “Terminal elements must be overtly marked in non-final conjuncts,” where the terminal element is understood as “a suffix that is allowed to appear at the end of a word, where further suffixation is not obligatory”. As we will see later, this constraint is operative in Ossetic as well, although it is not the only one that should be taken into account.<sup>4</sup>

<sup>3</sup> I leave aside word-part coordination, i.e., examples of the type *ortho- and peridotists*, Artstein (2005, 359), and only discuss “suspension” of functional morphemes. It remains to be seen whether word-part coordination in compounds and suspension of functional morphemes should be analyzed as one phenomenon.

<sup>4</sup> The constraint does not rule out certain ungrammatical instances of suspended affixation in Turkish either, as Kabak (2007, 337) acknowledges himself.

The paper is organized as follows: In section **2**, I specify my theoretical assumptions and formulate the proposal. In section **3**, I introduce the necessary background details about Ossetic, and describe Ossetic suspended affixation in detail. In section **4**, I use the data from the preceding section to argue for my analysis. In section **5**, I discuss (and reject) a number of possible alternative analyses. In section **6**, I proceed to discuss what kind of information is available to the computational system at the stage of deletion. Section **7** concludes.

## 2. Phenomenon and proposal

### 2.1. Suspended affixation and the structure of conjunction phrase

I stay agnostic about the actual structure of &P: the reason for that is that the available cross-linguistic evidence shows that, in languages with several structures of &P available, the grammaticality of suspended affixation does not depend on the specific structure. For instance, Noghay (Turkic, The North Caucasus) has two coordinating conjunctions: a free word *em*, and a harmonizing suffix, *man/men/pan/pen*, which presumably correspond to different structures of &P. For both, suspended affixation is grammatical:

- (4) (a) *ana-man ata-dəŋ söz-i* Noghay  
 mother.nom-and father-gen word-3sg  
 ‘father and mother’s words’ (Kalmykova–Sarueva 1973, 292)
- (b) *asker [madina em zarema]-ga šişik-ler berdi*  
 A. M. and Z-dat flower-pl gave  
 ‘Asker gave flowers to Madina and Zarema.’ (Mariya Bulgarova, p.c.)

Specifically for Ossetic, my contention is that the deletion scenario is necessary, no matter what structure of &P is adopted.

### 2.2. Phenomenon: The main contrast

For nouns, suspended affixation of a case marker results in the bare stem, i.e., the nominative form, being the first conjunct:

- (5) [alan ɐma soslan]-ɐj tarstɐn Digor Ossetic  
 A.**nom** and S-abl be.afraid.pst.1sg  
 ‘I was afraid of Alan and Soslan.’

For personal pronouns, however, it is the oblique case form that has to appear in suspended affixation contexts. If the order of the conjuncts is reversed, the noun would appear in the nominative form.

- (6) (a) **dɛw** ɐma alan-ɐj tarstɐn Digor Ossetic  
 you.**obl** and A-abl be.afraid.pst.1sg  
 ‘I am afraid of you and Alan.’  
 (b) **alan** ɐma dɛw-ɐj tarstɐn  
 A-nom and you-abl be.afraid.pst.1sg  
 ‘I am afraid of Alan and you.’

Another non-trivial manifestation of suspended affixation can be observed when the case assigned by a numeral and an ‘external’ case interact. When the numeral phrase stands in the nominative, the noun carries the oblique case marking:

- (7) səppar bɛχ-ə χizənc Iron Ossetic  
 four horse-**obl** graze.prs.3pl  
 ‘Four horses graze/are grazing.’

On the other hand, when the case assigned to the NumP as a whole differs from the nominative, the respective case marker replaces the oblique in Iron.<sup>5</sup> The ablative in (8) is assigned by the preposition *ɐnɐ* ‘without’:

- (8) ɐnɐ səppar bɛχ-ɐj Iron Ossetic  
 without four horse-**abl**  
 ‘without four horses’

However, under suspended affixation, no case marking at all appears on the first conjunct:

- (9) ɐnɐ səppar bɛχ(\*-ə) ɐmɐ gal-ɐj Iron Ossetic  
 without four horse(-obl) and bull-abl  
 ‘without four horses and a bull’

<sup>5</sup> In Digor, dedicated numeral morphology surfaces in this situation.

### 2.3. Proposal

The main points of my proposal are:

- The case markers in Ossetic are a spellout of features assigned to noun phrases (or extended noun phrases, the difference between NP and DP is irrelevant for my present purposes) and do not occupy a structural position of their own.
- The features are carried separately by the coordinands, and not by &P as a whole.
- The suspended affixation results from deletion.
- The deletion occurs after the phonological form of the morphemes in question is specified, that is, after the derivation is sent of to PF (or after Vocabulary Insertion, if one adopts tenets and terminology of distributed morphology).
- However, at the stage when the deletion occurs, the semantics of the feature is still visible to the computational system.

## 3. Presenting the data

In this section, I introduce background data on Ossetic and the case system of Ossetic, and use these data to describe suspended affixation in more detail.

### 3.1. Generalities on Ossetic

Ossetic is a cover term for two closely related Eastern Iranian languages, Digor and Iron, spoken in the Central Caucasus. Ossetic is head final (it shows SOV, postpositions, mostly suffixing morphology, and strictly head-final NP), with a moderately rich case system. The cases are the Nominative; Oblique<sup>6</sup> = Accusative/Genitive; Dative; Ablative; Inessive; Allative; Superessive; Equative; and Iron also has the Comitative. Unlike in many other Modern Iranian languages, the alignment is nominative–accusative in all tenses.

<sup>6</sup> The accusative and genitive are morphologically distinct only for pronominal clitics, Erschler (2009). The inessive differs from the oblique for enclitic pronouns (both in Iron and Digor), and, in Digor, for numerals and numeral phrases.

Ossetic shows differential object marking: definite animates, (10a), and personal pronouns, (10b), are obligatorily marked with the oblique, whereas inanimate objects usually stay in the nominative, (10c):

- (10) (a) soslan-\*(i) fɛ-wwitton Digor  
 Soslan-obl prv-see.pst.1sg  
 ‘I saw Soslan.Digor’
- (b) dɛw/\*du fɛ-wwitton  
 you.obl/\*nom prv-see.pst.1sg  
 ‘I saw you.’
- (c) toldɜ/\*tołɟ-i fɛ-wwitton  
 oak.nom/\*oak-obl prv-see.pst.1sg  
 ‘I saw a/the oak.’

Modifiers do not overtly agree with noun, and thus case markers are attached to the right edge of the noun phrase (which always coincides with the head noun):<sup>7</sup>

- (11) ači saw bɛχ-ɛn Digor  
 this black horse-dat  
 ‘for this black horse’

### 3.2. The Structure of Ossetic case system

Case markers are agglutinative. For nouns and most personal pronouns, the stems case markers attach to, can function as independent words: they are the nominative forms for nouns, and the oblique forms for pronouns. On the other hand, for *wh*-words, *wh*-word based indefinites and some other items, the non-nominative stems are not independent words.

#### 3.2.1. Case marking with nouns

As shown in (12) and (13), case suffixes are attached directly to stems, without triggering any deletion, except for the following classes of stems: all plurals, both in Iron and Digor, and Digor singulars with the final *-ɛ* (14). For singular nouns, the shape of case suffixes depends on whether the stem ends with a consonant or a vowel.

<sup>7</sup> Modulo the peculiar morphology of certain indefinites, see section 3.2.3 below.

- (12) Iron singular nouns
- |     |                |                 |                  |
|-----|----------------|-----------------|------------------|
| nom | bɛχ            | gɛdə            | ʒɛrdɛ            |
| obl | bɛχ-ə          | gɛdə- <b>jə</b> | ʒɛrdɛ- <b>jə</b> |
| abl | bɛχ- <b>ɛj</b> | gɛdə- <b>jɛ</b> | ʒɛrdɛ- <b>jɛ</b> |
|     | ‘horse’        | ‘cat’           | ‘heart’          |
- (13) Digor singular nouns
- |     |                |                     |
|-----|----------------|---------------------|
| nom | bɛχ            | k’ibila             |
| obl | bɛχ- <b>i</b>  | k’ibila- <b>ji</b>  |
| abl | bɛχ- <b>ɛj</b> | k’ibila- <b>jɛj</b> |
|     | ‘horse’        | ‘bucket’            |
- (14) *ɐ*-final singulars in Digor and plurals in Iron/Digor
- |     |                 |              |               |
|-----|-----------------|--------------|---------------|
|     | Digor singulars | Iron plurals | Digor plurals |
| nom | mad- <i>ɐ</i>   | bɛχ-tɛ       | biččewu-tɛ    |
| obl | mad- <b>i</b>   | bɛχ-t-ə      | biččewu-t-i   |
| abl | mad- <b>ɛj</b>  | bɛχ-t-ɛj     | biččewu-t-ɛj  |
|     | ‘mother’        | ‘horses’     | ‘boys’        |

I assume that, synchronically,<sup>8</sup> the final *-ɐ* is a part of the stem (respectively, of the plural marker *-tɛ*) and is deleted in order to avoid the hiatus.<sup>9</sup> The evidence for this is twofold. First, unlike real case markers, the final *ɐ* cannot be suspended:

- (15) (a) Singular Digor
- |                      |     |                     |
|----------------------|-----|---------------------|
| *mɛdin               | ɛmɛ | zɛlijnɛ             |
| <sup>ok</sup> mɛdinɛ | ɛmɛ | zɛlijnɛ             |
|                      |     | ‘Madina and Zalina’ |
- (b) Plural
- |                                  |     |                        |
|----------------------------------|-----|------------------------|
| *k’ibila- <b>t</b>               | ɛmɛ | bock’a- <b>t-ɛ</b>     |
|                                  |     | bucket-pl and tub-pl-? |
| <sup>ok</sup> k’ibila- <b>tɛ</b> | ɛmɛ | bock’a- <b>tɛ</b>      |
|                                  |     | ‘buckets and tubs’     |

Second, with consonant-initial case suffixes, *ɐ* is retained, whereas for vowel-initial suffixes it disappears.

<sup>8</sup> Diachronically, the word-final *-ɐ* is a rudiment of the nominative case marker, cf. Cheung (2008).

<sup>9</sup> Hiatus in Ossetic is in general disallowed. The means to avoid hiatus are insertion of epenthetic consonants (*-j-*, *-w-* or *-ʔ-*), vowel alternations, and vowel deletion.



- (16) Superessive *-bəl* Digor  
 (a) *mədin-ɐ-bəl* (b) *bɛχ-t-ɐ-bəl*  
 M-?-sup horse-pl-?-sup
- Allative *-mɐ*  
 (c) *mədin-ɐ-mɐ* (d) *bɛχ-t-ɐ-mɐ*  
 M-?-all horse-pl-?-all
- (17) (a) Oblique *-i* (b) Dative *-ɛn*  
*mədin-i* *mədin-ɛn*  
 (c) Ablative *-ɛj* (d) Equative *-aw*  
*mədin-ɛj* *mədin-aw*

It should be stressed that case stacking is impossible in Ossetic, and thus it is unnatural to analyze forms like *bɛχ-t-ɐ-bəl* as ‘horse-pl-nom-sup’, thus allowing the stacking of the nominative and the superessive.

The upshot of the discussion in this section is that, for nouns, case paradigms are built on the basis of a single stem.

### 3.2.2. Case marking with personal pronouns

1st and 2nd person plural pronouns in Iron and Digor, and 3rd person plural pronouns in Iron, have their paradigms built on one stem, like nouns. For other personal pronouns the situation is more complex (see Tables 1 and 2).

*Table 1*  
Declension of personal pronouns in Digor Ossetic

	1sg	2sg	3sg	3pl
Nominative	<i>ɛz</i>	<i>du</i>	<i>je</i>	<i>jetɐ</i>
Oblique	<b><i>mɛn</i></b>	<b><i>dɛw</i></b>	<b><i>wo-j</i></b>	<b><i>won-i</i></b>
Dative	<b><i>mɛn-ɛn</i></b>	<b><i>dɛw-ɛn</i></b>	<b><i>wo-m-ɛn</i></b>	<b><i>won-ɛm-ɛn</i></b>
Ablative	<b><i>mɛn-ɛj</i></b>	<b><i>daw-ɛj</i></b>	<b><i>wo-m-ɛj</i></b>	<b><i>won-ɛm-ɛj</i></b>
Superessive	<b><i>mɛn-bəl</i></b>	<b><i>dɛw-bəl</i></b>	<b><i>wo-bəl</i></b>	<b><i>won-ɐ-bəl</i></b>
Allative	<b><i>mɛn-mɐ</i></b>	<b><i>daw-ma</i></b>	<b><i>wo-mɐ</i></b>	<b><i>won-ɐ-mɐ</i></b>
Equative	<b><i>mɛn-aw</i></b>	<b><i>dɛw-aw</i></b>	<b><i>wo-j-aw</i></b>	<b><i>won-i-jaw</i></b>

Table 2

Declension of personal pronouns in Iron Ossetic

	1sg	2sg	3sg
Nominative	ɛʒ	də	wəj
Oblique	<b>mɛn</b>	<b>dɛw</b>	<b>wəj</b>
Dative	<b>mɛn-ɛn</b>	<b>dɛw-ɛn</b>	<b>wə-m-ɛn</b>
Ablative	<b>mɛn-ɛj</b>	<b>dɛw-ɛj</b>	<b>wə-m-ɛj</b>
Superessive	<b>mɛn-əl</b>	<b>dɛw-əl</b>	<b>wəl</b>
Allative	<b>mɛn-mɛ</b>	<b>dɛw-ma</b>	<b>wə-mɛ</b>
Equative	<b>mɛn-aw</b>	<b>dɛw-aw</b>	<b>wəj-aw</b>
Comitative	<b>mɛn-ime</b>	<b>dɛw-ime</b>	<b>wəj-ime</b>

The inessive case forms do not exist for pronouns. The historical inessive forms of the 3sg, *womi* in Digor and *wəm* in Iron, were re-analyzed into the word ‘there’. The inessive meaning is expressed by the combination of the oblique form of a pronoun with a postposition (e.g., *woj medɛgɛ* it.obl inside ‘inside it’).

### 3.2.3. Other declension classes

For the *wh*-words *sə/či* ‘what’ and *či/ka* ‘who’, the paradigm is more complex, see Table 3. Arguably, the 3sg personal pronoun in Iron belongs to the same declension type.

Table 3

Declension of ‘who’ and ‘what’

	‘who’, Iron/Digor	‘what’, Iron/Digor
Nominative	či/ka	sə/či
Accusative	kɛ-j/ <b>ke</b>	sə/či
Genitive	kɛ- <b>j/ke</b>	sɛ-j/cɛ-j
Dative	kɛ- <b>m-ɛn</b>	sɛ- <b>m-ɛn/ce-m-ɛn</b>
Ablative	kɛ- <b>m-ɛj</b>	sɛ- <b>m-ɛj/ce-m-ɛj</b>
Superessive	kɛ-wəl/kɛ-bəl	sɛ- <b>wəl/cɛ-bəl</b>
Allative	kɛ- <b>mɛ/kɛ-mɛ</b>	sɛ-mɛ/cɛ-mɛ
Equative <sup>a</sup>	?kɛ- <b>j-aw</b>	?sɛ-j-aw/cɛ-jaw
Comitative	kɛ- <b>jime/-</b>	<b>sɛ-jime/-</b>

<sup>a</sup> The respective forms are very uncommon, if at all attested.

No matter whether we analyze the *-m-* surfacing in the dative and the ablative as a part of the stem, part of the case marker, or an additional suffix, these paradigms show that the stems of the respective case forms are not independent words.

All **indefinites** are based on *wh*-stems. The suffixes marking the respective series of indefinites follow the case marking: *kəm-en-deritter* who-dat-idf ‘to whoever’, *kəm-en-der* who-dat-idf ‘to someone’.

*Wh*-words and indefinites of the ‘specific known’ series have plural forms. For these, the case is marked twice:

- (18) (a) *wh*-words (illustrated for Digor *ka* ‘who’)
- |     |        |     |                |     |                |
|-----|--------|-----|----------------|-----|----------------|
| nom | ka-tɛ  | obl | kɛ-t-i         | dat | kəm-ɛn-t-i     |
|     | who-pl |     | who-obl-pl-obl |     | who-dat-pl-obl |
- (b) ‘specific known’ indefinites (illustrated for Digor *kadɛr* ‘who’)
- |     |            |     |                    |     |                    |
|-----|------------|-----|--------------------|-----|--------------------|
| nom | ka-der-tɛ  | obl | kɛ-der-t-i         | dat | kəm-ɛn-der-t-ɛn    |
|     | who-idf-pl |     | who-obl-idf-pl-obl |     | who-dat-idf-pl-dat |

### 3.3. Suspended affixation in Ossetic

Unlike in many Turkic languages, the plural marker cannot be suspended in Ossetic. Suspended affixation of case markers<sup>10</sup> is subject to the following descriptive constraints:

1. Any case marker may be suspended.
2. The first conjunct in a suspended affixation construction must be a substring of the respective conjunct with the case marker present (modulo phonological changes, like palatalization or *-ɛ* deletion).
3. This substring must be an actual independent word.
4. This word should not have an idiosyncratic lexical meaning.
5. When both conjuncts are pronouns, suspended affixation is ungrammatical.

Accordingly, with nouns, suspended affixation is possible in Ossetic for any case marker, no matter what the case assigner is. The first conjunct then stands in the nominative, (19).

<sup>10</sup> Suspended affixation is also available for possessive prefixes; see Erschler (2009) for some arguments that these entities indeed may be indeed analyzed as prefixes, and certain derivational suffixes.

- (19) (a) Possessor marking Digor  
 soslan ɐma zalijn-**i** χɛczare  
 S-nom and Z-obl house  
 ‘the house of Soslan and Zalina’
- (b) Direct Object Marking  
 [alan ɐma soslan]-**i** fe-wwitton  
 A-nom and S-obl prv-see.pst.1sg  
 ‘I saw Alan and Soslan.’  
 Case idiosyncratically assigned to verb arguments
- (c) [alan ɐma soslan]-**bɛl** is-ɐmbalttɛn  
 A-nom and S-sup prv-meet.pst.1sg  
 ‘I met Alan and Soslan.’
- (d) [alan ɐma soslan]-**ɛj** tarstɛn  
 A-nom and S-obl be.afraid.pst.1sg  
 ‘I was afraid of Alan and Soslan.’
- (e) Adjunct case  
 [budur ɐma ɐɛd]-**i** bere ɕ’ewu-te iš-šerdtonce  
 field-nom and forest-loc many bird-pl prv-find.pst.3pl  
 ‘They found many birds in the field and the forest.’
- (f) Case assigned to the complement of a postposition  
 χucaw ɐma **mɛn** niχmɛ ɛnce  
 God and I.obl against be.prs.3pl  
 ‘They are against God and me.’<sup>11</sup> (Maliti B.)

For *ɐ*-final stems, in the cases, when *ɐ* should be deleted, it resurfaces under suspended affixation:

- (20) Digor, singular  
<sup>ok</sup>mɛdinɐ ɐma soslan-i fe-wwitton  
 M-nom and S-obl prv-see.pst.1sg  
 ‘I saw Madina and Soslan.’  
<sup>ok</sup>mɛdin-i ɐma soslan-i  
 M-obl and S-obl  
 \*mɛdin ɐma soslan-i

<sup>11</sup> ‘Against’, like almost all postpositions in Ossetic, assigns the oblique: *χucaw-i niχmɛ* god-obl against ‘against God’. Additionally, this example shows that the second, case-marked, conjunct may be a pronoun.

(21) Iron, plural

- |                        |               |                         |               |
|------------------------|---------------|-------------------------|---------------|
| <sup>ok</sup> beχ-tə   | eme gel-t-ime | <sup>ok</sup> beχ-t-ime | eme gel-t-ime |
| horse-pl               | and ox-pl-com | horse-pl-com            | and ox-pl-com |
| *beχ-t                 | eme gel-t-ime |                         |               |
| horse-pl               | and ox-pl-com |                         |               |
| ‘with horses and oxen’ |               |                         |               |

With personal pronouns, according to constraint 2, it is the oblique form that surfaces (see the paradigms in Tables 1 and 2):

- (22) (a) dəw/\***du**      ɛma alan-i fe-wwitton      Digor  
 you-obl/-nom and A-obl prv-see.pst.1sg  
 ‘I saw you and Alan.’
- (b) dəw/\***du**      ɛma alan-bəl is-embaltten  
 you-obl/-nom and A-sup prv-meet.pst.1sg  
 ‘I met you and Alan.’
- (c) dəw/\***du**      ɛma alan-ɛj tersun  
 you-obl/-nom and A-abl be.afraid.prs.1sg  
 ‘I am afraid of you and Alan.’

It should be acknowledged that, for some speakers of Iron, certain examples somewhat improve when the nominative-marked coordinand is the 1st person pronoun:

- (23) <sup>?</sup>ɛž      ɛmɛ dola-t-ə      čəžg-ən ɛnɛ      Iron  
 I.nom and Dola-pl-obl girl-dat without  
 kərəzi      sɛrɛn nal      i  
 each.other live no.more exist-3sg  
 ‘Dolaev’s daughter and I cannot live without each other anymore.’  
 (Max Dug<sup>12</sup> 2007)

However, this sentence was judged unacceptable or hardly acceptable by many speakers, despite its being extracted from a literary text. All the three examples of suspended affixation with a pronominal first conjunct in Kulaev (1981) are with *ɛž* ‘I’. In what follows, I will disregard such examples.

<sup>12</sup> An Iron literary journal, published monthly in Vladikavkaz.

To illustrate the effect of constraint 3, consider the following contrast between Iron and Digor. In Iron Ossetic, the reciprocal stem *kerezi* is a word (24a), whereas its Digor cognate, *kereǰe*, cannot be used without a case suffix, (24b):

- (24) (a) *maχ=ta mən-mə gešǰe* Iron  
 we=ctr I.obl-all according  
*kerezi χorž žonəm*  
 each.other well know.prs.1pl  
 ‘But we, in my opinion, know each other well.’ (Gwycmazty A.)
- (b) *wəd kereǰe-\*(j) χʷezdər ba-ləderdžinan* Digor  
 then each.other-obl better prv-understand.fut.1pl  
 ‘Then we will better understand each other.’ (Æghuzarti S.)

Accordingly, in Iron, but not in Digor, the reciprocal stem may serve as a non-last conjunct in suspended affixation constructions:

- (25) (a) <sup>?</sup>*nə=dəwə* *gədy-jə* [**kerezi** Iron/Digor  
 \**nə=duwə* *tikiš-i* [**kereǰe**  
 poss.1pl=two cat-obl each.other  
*ɐmə nə=kʷəz]-ej* *tərš-ənc*  
*ɐma nə=kuj]-ej* *tərs-uncə*  
 and poss.1pl=dog-abl be.afraid.prs.3pl  
 ‘Our two cats are afraid of each other and of our dog.’
- (b) *nə=duwə* *tikiš-i* [**kereǰem-əj** Digor  
 poss.1pl=two cat-obl each.other-abl  
*ɐma nə=kuj]-ej* *tərs-uncə*  
 and poss.1pl=dog-abl be.afraid.prs.3pl

Similarly, the 3pl pronoun in Digor (and, in both languages, *wh*-based indefinites, as well as the *wh*-words themselves) cannot serve as a non-final coordinand in suspended affixation, because no subparts of them are independent words.

To illustrate constraint 4 as was mentioned already consider the behavior of the 3sg pronoun in Iron, *wəɱ*. Although historically it is the inessive of *wəj* ‘he/she/it’, now it only has the meaning ‘there’. Accordingly, the putative example (26a) is ungrammatical, although its counterpart without suspended affixation (26b) is perfectly acceptable.

- (26) (a) \*wəm ɐmɐ mɛdɪnɛ-jɛn didɪŋɕətɐ ratta Iron  
 there and M-dat flowers gave  
 ‘S/he<sup>13</sup> gave flowers to her and Madina.’
- (b) wəməɲ ɐmɐ mɛdɪnɛ-jɛn didɪŋɕətɐ ratta  
 s/he-dat and M-dat flowers gave  
 ‘S/he gave flowers to her and Madina.’<sup>14</sup>

When two pronouns are coordinated, suspended affixation is ungrammatical even if conditions 1–4 are met:

- (27) (a) mən-bəl ɐmɐ dɛw-bəl ɐwwɛnduj Digor  
 I-sup and you-sup believe.prs.3sg  
 ‘S/he believes me and you.’
- (b) \*mən ɐmɐ dɛw-bəl ɐwwɛnduj  
 I-obl and you-sup believe.prs.3sg  
*idem.* (intended reading)

#### 4. Analysis

I first show that phonological deletion (whatever be the status of the deleted exponents) indeed gives the right prediction. Then I argue that case markers are not adpositions, and that suspended affixation cannot be treated as affixation to &P. Then I argue against the accounts assuming case feature transmission across &P (plus, possibly, some kind of impoverishment operation). Then, in section 5, I proceed to show that the oblique is not a default case in the sense of Schütze (2001). Lastly, I address the account of Johannessen (1998) and argue that it is not applicable to Ossetic data. This leaves the phonological deletion as the only logical possibility.

##### 4.1. Suspended affixation as phonological deletion

Constraints 1–3 immediately follow from the idea that suspended affixation in Ossetic is an instance of phonological deletion. The assumption

<sup>13</sup> Both Iron and Digor are pro-drop languages and lack grammatical gender, even for pronouns.

<sup>14</sup> This sentence also has a reading ‘Because he gave flowers to Madina’, but this is irrelevant for our discussion.

that case markers are deleted after the vocabulary insertion explains both the presence of the oblique pronoun in (28a) and the absence of any case marking in (28b).

- (28) (a) dəw-~~bet~~ əma soslan-bəl isembaldden Digor  
you.obl-~~sup~~ and S-sup I.met  
'I met you and Soslan.'
- (b) ɛnə səppar bəχ-~~ej~~ ɛmə gal-ɛj Iron  
without four horse-~~abl~~ and bull-abl  
'without four horses and a bull'

A natural question is why this phenomenon should not be treated as an instance of impoverishment (in the sense of Halle–Marantz 1993; 1994). However, impoverishment is usually assumed to take place word internally, and it appears more natural to me to treat the deletion within &P as ellipsis.

One more suspended affixation-like phenomenon that can be also explained by deletion under phonological identity is the distribution of the English 's-genitive (I owe this observation to Daniel Siddiqi, p.c.):

- (29) \*my and Bill's books / \*I and Bill's books/ \*mine and Bill's books

The ungrammaticality of (29) falls out from the incompatibility of 's with pronouns and the assumption that 's-marking of &P arises from deletion: *Mary's and Bill's books*.

#### 4.2. Case markers do not head projections of their own

Two types of fact militate against analyzing Ossetic case markers as adpositions. **First**, it is the multiple case marking in the plurals of some indefinites, as mentioned in section 3.2.3, for instance, Digor *kəm-en-t-i* who-**dat-pl-obl**, the dative of 'who-pl', and *kəm-en-der-t-en* who-**dat-idf-pl-dat**, the dative of 'someone-pl'. Any "adposition" approach clearly fails to account for this type of phenomenon.

**Second**, it is a contrast in binding properties that obtains between complements of true adpositions and case-marked bare noun phrases (which all have identical binding properties). The differences show up in the patterns of control of **depictives** and in the binding of reflexives. The complements of adpositions cannot control depictives, whereas case-marked NPs and pronouns can do so.



- (30) (a) soslan  $\chi\text{et}\text{e}\text{g}\text{-e}\text{j}$  rasug-ej ters-uj Digor  
 S.nom X-abl drunk-abl be.afraid-prs.3sg  
 ‘Soslani is afraid of Xetagi when he<sub>i/j</sub> is drunk.’
- (b) soslan  $\chi\text{et}\text{e}\text{g}\text{-b}\text{el}$  rasug-ej=der ewwend-uj  
 S.nom X-sup drunk-abl=emp believe-prs.3sg  
 ‘Soslani believes in Xetagi even when he<sub>i/j</sub> is drunk.’
- (c) soslan  **$\chi\text{et}\text{e}\text{g}\text{-i}$**   **$\chi\text{e}\text{c}\text{c}\text{e}$**  rasug-ej dzor-uj  
 S.nom X-obl with drunk-abl talk-prs.3sg  
 ‘Soslani is talking to Xetagi when he<sub>i/\*j</sub> is drunk.’

The same pattern obtains for reflexive binding: case-marked noun phrases can bind reflexives, whereas adposition complements cannot do so. A reflexive should be bound, and any case-marked NP in the same clause may serve as a binder:<sup>15</sup>

- (31) (a) soslan-m<sub>e</sub><sub>i</sub>  $\text{e}=\chi\text{e}_{i/*j}$  ba-vdiston Digor  
 S-all poss.3sg=self prv-show.pst.1sg  
 ‘I have shown Soslan to himself.’
- (b)  $\text{e}=\chi\text{e}\text{-m}_{e_{i/*j}}$  soslan-i<sub>i</sub> ba-vdiston  
 poss.3sg=self-all S-obl prv-show.pst.1sg  
*idem.*

But reflexives cannot be bound by complements of adpositions:

- (32) (a) soslan-i  **$\text{e}=\chi\text{e}$**   **$\chi\text{e}\text{c}\text{c}\text{e}$**  ba-zong<sub>e</sub> kotton Digor  
 S-obl poss.3sg=self with prv-known do.pst.1sg  
 ‘I introduced Soslan to himself.’
- (b) \* **$\text{e}=\chi\text{e}$**  soslan-i  $\chi\text{e}\text{c}\text{c}\text{e}$  ba-zong<sub>e</sub> kotton  
 poss.3sg=self S-obl with prv-known do.pst.1sg

The conclusion is that, while the hierarchical structure is relevant for establishing binding relations, case marked noun phrases do not show any case-dependent contrasts. Therefore, I assume that Ossetic case markers lack a separate structural position. So it is natural to assume that any such marker is the spellout of certain features.

These data have an additional consequence for our discussion: it shows that Ossetic semantic cases cannot be assigned by null postpositions, as assumed in a number of proposals (e.g. McFadden 2004; Nikanne

<sup>15</sup> This fact strongly suggests that the Ossetic VP is flat.

1993 for Finnish). The principal argument in favor of analyses of this type is that NPs marked by semantic cases pattern with PPs in their binding properties, which is indeed the case for Finnish. This argument does not go through for Ossetic: the would-be null adpositions assigning these cases would then need to have binding properties that differ drastically from those of phonologically overt adpositions.

I am not considering here KP types of approach, but, as an anonymous reviewer has observed, if one assumes the existence of KP, one faces the challenge of explaining why that projection does not count for c-command relations, whereas PP does.

### 4.3. Affixation to &P

Assume now that case affixes attach to &P (like *to* [*her and him*]). That would predict that case markers attach to well-formed words. However, as we have seen, for a number of items their stems are non-words. Moreover, stems like *kəm-* (the stem of ‘who’ that combines with the dative and the ablative) are definitely possible as independent words,<sup>16</sup> and thus we cannot assume that the case marker attaches to &P and then the respective structure is filtered out phonologically.

### 4.4. Agreement between the conjuncts

Case agreement is unattested in Ossetic. Therefore it would be completely stipulative to assume that the oblique form of pronouns in examples of type (6a) is due to agreement between conjuncts. There is no possible way to predict the shape of the agreeing conjunct.

## 5. Alternative analyses

In this section, I discuss two potential alternative analyses. One possibility is that the oblique forms of Ossetic pronouns may be default forms, like the “accusative” forms of English pronouns, Schütze (2001). I show that neither of these analyses works for Ossetic. Another one is the analysis of Johannessen (1998), who proposes that &P is headed by the conjunction and it is the conjunct in Spec &P that gets the case marking.

<sup>16</sup> And, indeed, both exist in Iron with lexicalized meanings ‘where’ and ‘there’.

### 5.1. Default forms

It is well known that in English, in many environments it is the “accusative” forms of personal pronouns that surface:

- (33) (a) Left dislocation  
**Me/\*I**, I like beans.
- (b) Elliptical answers  
 Q: Who wants to try this game?  
 A: **Me/\*I**.
- (c) Gapping  
 Why shouldn't he take my car, or **me/?I** his?
- (d) Coordination  
**Her and us/\*She and we** have been friends for ages. (Schutze 2001, 210–4)
- (e) ‘Mad Magazine’ sentences  
**Me** worry? No way!

Nothing of this sort obtains in Ossetic: the only environments where the oblique-marked pronoun may surface are where it is actually in a position requiring the oblique for a non-pronominal argument as well, or in the suspended affixation construction.

While Ossetic lacks left dislocation or “Mad Magazine” sentences, the tests with coordination, answers, and various kinds of ellipsis give an unambiguous answer: in all these situations, only the nominative forms of pronouns are grammatical.

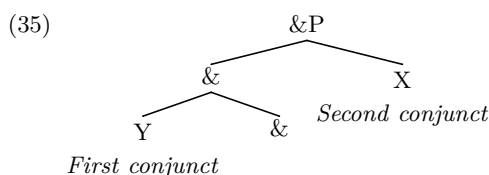
- (34) (a) Conjuncts in the nominative  
 kəd=də fenduj wəd duw-eməj **əz ɛma du** Digor  
 if=acc.2sg wants then two-abl I.nom and you.nom  
 ‘If you want, then both of us, you and I.’ (Maliti V.)
- (b) Conjuncts in the oblique  
 \*kəd=də fenduj wəd duw-eməj **mən ɛma dəw**  
 if=acc.2sg wants then two-abl I.obl and you.obl
- (c) Elliptical answers  
 A: womi ka adtəj? B: ɛz/\*mən  
 there who was I.nom/I.obl  
 ‘Who was there?’ ‘Me.’

- (d) Elliptic contexts  
 du seržant de **ez**=ba rjadovoj ~~den~~  
 you.nom sergeant be.prs.2sg I.nom=ctr private be.prs.1sg  
 ‘You are a sergeant and I a private.’
- (e) \*du seržant de **men**=ba rjadovoj  
 you.nom sergeant be.prs.2sg I.obl=ctr private

Thus this analysis should be rejected.

## 5.2. The analysis of Johannessen (1998)

Johannessen’s (1998, 109) proposed the asymmetric structure of &P, as shown in (35) for a head-final language, and assumes that suspended affixation arises because it is only the specifier of &P, the second conjunct, that gets the respective feature.



However, in the case of Ossetic we need to explain the marking on the first conjunct in sentences like the one in (6a). The discussion in section 5.1 shows that the oblique is not the default case in Ossetic. Therefore, its appearance cannot be explained away by assuming that the first conjunct actually stays caseless.

Another argument against the absence of ‘external’ case on the first conjunct comes from the behavior of numeral phrases (as discussed in section 2.1): if the “external” case were absent, we would assume that the oblique, which is assigned by numerals, would surface in (36). However, this is not the case:

- (36) \**enə* [səppar bəχ-ə] *enə gal-əj* Iron  
 without four horse-**obl** and bull-**abl**  
 ‘without four horses and a bull’ (intended reading)

To sum up the discussion of sections 4 and 5, available alternatives to post-insertion deletion do not seem to be able to account for Ossetic facts.

## 6. What is visible to the morphological module?

Having shown that post-insertion deletion is the only possible account for Ossetic facts, I now turn to the question as to what kind of information is available to the computational system at the deletion stage.

I submit that the feature specification of case suffixes still remains visible at that stage. First, assume that the rule is purely phonological: “delete the suffix on the first coordinand, if the suffix on the second coordinand is identical to it.” This rule would over-generate. Observe the plural marker (*-tɕ*) that is also agglutinative. Then we would assume that suspended affixation is available for plural markers as well. However, that is not the case:

- (37) kuj ɤma tikis-**tɕ** Digor  
 dog and cat-pl  
 ‘a dog and cats’/\*‘dogs and cats’

Furthermore, at least for some functions of some of the cases, the case features are interpretable:<sup>17</sup> (38a) and (38b) differ only in the case marking on the noun ‘city’.

- (38) (a) goret-**mɛ** cɛwun (b) goret-**ɔl** cɛwun Digor  
 city-all I.go city-sup I.go  
 ‘I go towards the city.’ ‘I go through the city.’

An additional argument supporting this position comes from the fact, already mentioned, that the stems of *wh*-items, although not actual words, are phonologically possible words. It indicates that some kind of lexicon information is available at the deletion stage. Therefore, we are forced to assume that the feature specification remains visible to the computational system at the stage where deletion occurs. The deletion of interpretable features must occur after this stage.

## 7. Conclusion

In this paper, I have described a contrast between nouns and pronouns under suspended case affixation in Ossetic. The analysis I have sketched

<sup>17</sup> And, as we have seen above, the case marking cannot be assigned by a null adposition. Hence the semantics cannot be relegated to it either.

assumes that this phenomenon results from post-insertion deletion of respective exponents. Although this process is apparently phonological, semantic features should be visible to the computational system when it occurs. Probably this stage of derivation, with phonological exponents already inserted but semantic features yet undeleted, is precisely the morphological module.

I leave for further research the question why suspended affixation is ungrammatical when two pronouns are conjoined. This constraint could be processing-based (the cost of tracking reference for two pronouns and of parsing a suspended affixation construction might be too high) but, given that native speakers unanimously reject such sentences, the constraint is apparently incorporated in the grammar proper.

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