A Stem-less Description of Lezgian Inflectional Morphology

Tatjana Scheffler

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1 Noun Morphology

Lezgian nouns inflect for number (singular and plural) and case. There is no gender, and there are no articles. The case system has 18 cases, most of which are "locative" cases. Synchronically, however, these cases have mostly purely grammatical functions, as actual locations are expressed by postpositions.

  The cases are listed together with an example of the singular inflection in the following table (from Haspelmath, 1993). The Indirective case is missing from Lezgian.

Absolutive (Nominative)	*sew*	*(= bear)*
Ergative	*sew-re*	
Genitive	*sew-re-n*	
Dative	*sew-re-z*	
Adessive	*sew-re-w*	
Adelative (Ablative)	*sew-re-w-aj*	
Addirective	*sew-re-w-di*	
Postessive	*sew-re-q^h*	
Postelative	*sew-re-q^h-aj*	
Postdirective	*sew-re-q^h-di*	
Subessive	*sew-re-k*	
Subelative	*sew-re-k-aj*	
Subdirective	*sew-re-k-di*	
Superessive	*sew-re-l*	
Superelative	*sew-re-l-aj*	
Superdirective	*sew-re-l-di*	
Inessive	*sew-re*	
Inelative	*sew-räj*	

Table 1: Singular nominal inflection.

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1.1 The "Oblique Stem"

According to Haspelmath, an "oblique stem" is underlying most case forms except for the Absolutive. It is expressed by one of the 10 suffixes listed in (1). Suffixes are chosen idiosyncratically by the root, but there are some generalizations (such as that all personal names take *-a*).

(1)   *-di, -a, -i, -u, -Adi, -rA, -Uni, -A, -U, -ci/-c'i/-či/-ži* [1]

    A look at plural nouns shows that this morphosyntactic marker can not derive a "stem".

(2)   *balk'an-ar*   obl.:   *balk'án-r-i*
       horse-PL   horse-PL-obl

(3)   *buba-jar*   obl.:   *buba-jr-i*
       father-PL   father-PL-obl

    The oblique suffix is ordered syntactically after the plural marker. Thus the oblique marker is further away from the root than number, and it can't in any sense build a "stem" from the root. The oblique suffix is part of inflectional, and not derivational morphology.

Selection of the Oblique Marker. In the singular, the oblique suffix is selected by the root. The default oblique marker is *-di*. In the plural, however, the nouns are grouped differently: all plural nouns take the oblique suffix *-i*, independent of their singular class. Only nouns that form their plural with the plural suffix *-bur* (these are the nominalized adjectives) take the oblique marker *-u* instead.

(4)   *didé*, obl.: *didé-di*; pl.: *didé-jar*, pl.obl.: *didé-jr-i* (= *mother*)

(5)   *jaru*; pl.: *jaru-bur*, pl.obl.: *jaru-bur-u* (= *red ones*)

    So obviously the oblique marker is not directly selected by the root. Instead, it is determined by the morphological *piece* that precedes its own position. In the singular, there is no number marking, and the oblique marker depends directly on the noun root. In the plural, the distinct plural marker determines the oblique suffix unambiguously. Note also that *-i*, the oblique marker on standard plural nouns, is not the default oblique marker. For singular nouns, the default oblique suffix (used for almost all polysyllabic and many monosyllabic nouns[2]) is *-di*.

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[1] Capitalized vowels throughout this paper denote vowels that vary according to Palatal Vowel Harmony: *A* stands for a low vowel, *U* for a high vowel.

[2] Monosyllabic words ending in a vowel, monosyllabic loanwords, and abbreviations all take this suffix (see Haspelmath, 1993, 7.1.2.2.(A)).

The Oblique Marker as Case Marker. All Lezgian cases are formed with the oblique marker, with the exception of the Absolutive (or Nominative) case. In an ergative language like Lezgian, the Absolutive is the *unmarked* case.[3] It is also used for naming nouns, etc. We will therefore propose that nouns in Absolutive case are in fact *unmarked* for case, i.e., they lack a case node.

In the framework of Distributed Morphology, all morphological pieces are at the leaves of the syntactic tree: so all pieces belong to positions in the tree. Some of these nodes are introduced in the course of the syntactic derivation. Nodes may, however, also be introduced after Spellout (after the split into the phonological and logical branches of derivation). These nodes contain only non-interpretable features (because the LF never gets to see them), and their introduction is called *Ornamental Morphology.* Case features are uninterpreted, and they are therefore introduced as necessary after Spellout.

In Lezgian, we propose that a case node is only introduced for non-absolutive noun phrases. How exactly that process happens is a question of general interest, but not very specific to this language.

Then, a Case node always undergoes fission into a node with just the feature [+ case], and another node with all the specific case features.

(6) **Case node fission.**

Case   Case

| $\rightarrow$ ⟨⟩

[X]   [+ case]   [X]
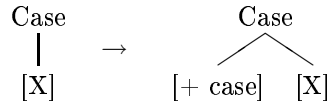
The Spellout rules for [+ case] depend on the linearly preceding piece. Some examples of vocabulary items (for the cases discussed above) are:

(7)   [+ case] $\leftrightarrow$ *-u* /   [+ pl] ____

                       |

                   -bur

(8)   [+ case] $\leftrightarrow$ *-i* / [+ pl] ____

(9)   [+ case] $\leftrightarrow$ *-di*   (default)

1.2   Morphosyntactic Structure of Nouns

As can be seen from the paradigm in table 1, the case features of a noun are actually realized in three distinct pieces. We have discussed one of them above, the oblique marker (glossed in the following as OBLique).

It is followed by the LOCalization suffix (Ad, Post, Sub, Super or In), and then the DIRection suffix (Essive, Elative, or Directive). The linear structure is thus:

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[3]Evidence for the ergativity of Lezgian can only come from the syntax, and therefore the case-marking, because there is no verbal agreement. It is thus possible to argue that Lezgian is in fact not an ergative language. Mel'cuk (1982) takes such a position, claiming that all Lezgian verbs are inherently intransitive, and ergative noun phrases are optional by-phrases. Even in this view, though, noun phrases in Absolutive (or then, Nominative) case are still considered the unmarked NPs.

(10) $\sqrt{\text{root}}$ + (PL) + OBL + LOC + DIR

The non-locative cases don't show the split into locative and directive exponent. Ergative is marked only by the oblique suffix, whereas Genitive and Dative have an additional casemarker, -*n* and -*z*, respectively.

We therefore propose that the locative cases trigger a second fission operation on the case node. Case is split into Location and Direction. Note, however, that the Essive cases do not have a separate exponent for Direction (or else they have a null exponent). That means we can assume that there is one feature [± directive] which triggers the fission rule. In the Essive (which is the stative case), as well as in the Ergative, Genitive and Dative (which aren't directive either) this feature is not present. Directive cases have the [+ dir] feature, whereas Elatives (the opposite of Directive, i.e., "leading away from") have the feature [− dir].

(11) **Direction fission.**

Case   Case

| →   ⟋⟍

[dir,X]   [X]   [dir]
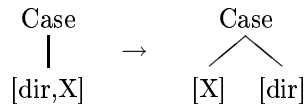
The resulting Vocabulary Items we need to posit for the Directive piece are:

(12) [+ dir] ↔ -*di*

(13) [− dir] ↔ -*aj*

The Location exponent. The features that have been depicted by X in the rules above account for the remaining case distinctions, between Ergative, Genitive, and Dative, and the five Localizations.

As the pieces are all completely distinct, we will just assume distinct features for each Localization and Genitive and Dative, for the time being. Of course, the same data could be captured with a more compact feature set, if there is any motivation to do so.

Ergative, as well as the In localization, has a null exponent. This will thus be taken to be the default piece.

(14) [+ gen] ↔ -*n*

(15) [+ dat] ↔ -*z*

(16) [+ ad] ↔ -*w*

(17) [+ post] ↔ -q^h

(18) [+ sub] ↔ -*k*

(19) [+ super] ↔ -*l*

(20) [ ] ↔ ∅ / Case

In and Super Localizations. The In cases and Super cases show an additional complexity: the exponent for the In localization is not actually the null exponent, but instead In is expressed by lowering of the preceding root vowel. For Super, the suffix *-l-* is appended to the root on which lowering of the last vowel has occurred.

This poses a special problem for a theory of morphology that prefers affixation over stem-changing rules (also called Readjustment rules), such as it is the case in Distributed Morphology. In a framework that makes use of Readjustment rules, the necessary change of the root vowel in the In and Super localizations could be easily expressed.

In DM, however, it has been argued that piece-based affixation should be preferred over stem-changing rules, if possible. Such an account is indeed possible, if a suprasegmental feature like vowel height can be seen as a distinct piece in the morphology. This is a question of the morphology-phonology interface which we think can be answered positively. What we need to assume, is, that if a [+ low] feature is appended to a word in the derivation on the branch to Phonological Form, this feature will (by phonological processes) be realized on the last vowel of the preceding phonological unit. These assumptions seem completely reasonable.

The Vocabulary Items posited above must therefore be revised in the following way:
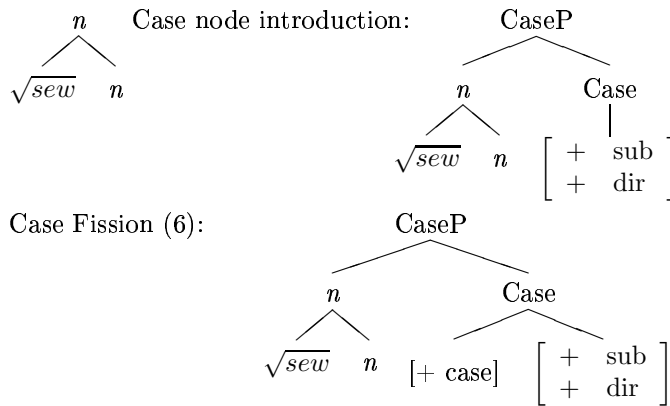
(21) $\sqrt{\text{root}}$ [+ super] $\leftrightarrow$ $\sqrt{\text{root}}$+[+ low]   *-l*

(22) $\sqrt{\text{root}}$ [+ in] $\leftrightarrow$ $\sqrt{\text{root}}$+[+ low] $\emptyset$
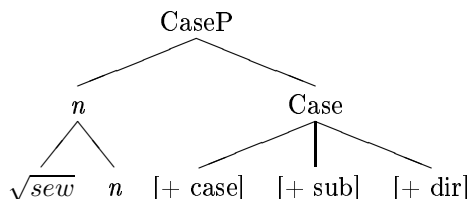
It is apparent that these Vocabulary Items make reference to the linear order of the pieces. They must be inserted late, after the syntactic tree has been flattened into a linear string.
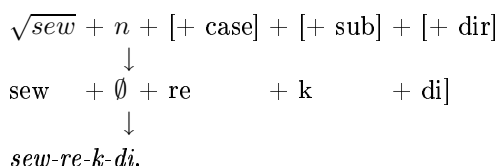
1.3   Sample Derivation

(23)   Subdirective of 'bear': *sew-re-k-di*

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Direction Fission (11):

$$\text{CaseP}$$

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                    CaseP
                   /     \
                  n       Case
                 / \     /  |  \
             √sew   n  [+ case] [+ sub] [+ dir]
```

Flattening and Vocabulary Insertion:

$\sqrt{sew}$ + n + [+ case] + [+ sub] + [+ dir]
$\downarrow$
sew   + ∅ + re   + k   + di]
$\downarrow$
sew-re-k-di.

2 Verb Morphology

Haspelmath (1993) characterizes Lezgian verbal inflection as building on three
"stems", the Masdar stem, the Imperfective stem, and the Aorist stem. For
strong verbs, the so-called stems are mostly formed by affixing a theme vowel
onto the root. Some examples (from Haspelmath, 1993, p. 123) are given in
table 2.

	Masdar	**Infinitive**	**Aorist**	
strong verbs				
U-U-A	ac'-ú-n	ac'-ú-z	ac'-a-na	'be filled'
U-A-A	gat-ú-n	gat-á-z	gat-á-na	'beat'
U-A-U	čug-ú-n	čugw-á-z	čug-ú-na	'pull, draw'
U-U-U	q̃ač-ú-n	q̃ač-ú-z	q̃ač-ú-na	'take'
weak verbs	kís-un	kís-iz	kís-na	'fall silent'

Table 2: Verb stems.

2.1 Theme Vowels

It is quite obvious from the data that the notion of three separate stems is
not necessary for an adequate description of the data. In the light of previous
literature that has shown stems to be unnecessary and often problematic (see
Embick and Halle, 2004a), we will in the following attempt a description that
doesn't use any recourse to the notion of stems.

As Haspelmath (1993) notes, the different verb forms are built by affixing
a theme vowel to strong verbs. For weak verbs, he claims there is no theme
vowel, instead the Tense suffixes are different. We can therefore assume that
weak verbs either do not trigger the insertion of a theme vowel node (note that
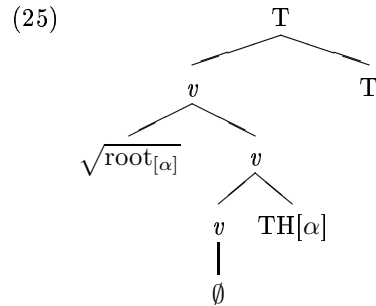
theme vowels are uninterpretable features, and thus inserted at PF), or that $\emptyset$ is inserted for the theme vowel of weak verbs.

Here, we will follow the second line, and assume that the theme vowel for weak verbs is simply zero. We then adopt the Fission Rule for Theme Positions, posited in (Embick and Halle, 2004b):

(24) **Fission Rule for Theme Positions.**

$$\sqrt{\text{root}_{[\alpha]}} \quad \rightarrow \qquad \overbrace{\sqrt{\text{root}} \quad \text{TH}[\alpha]}$$

The structure of verbs at the time of Vocabulary Insertion is then the following:

(25)

$$
\begin{array}{c}
\text{T} \\
\overbrace{\quad v \qquad\qquad \text{T}} \\
\overbrace{\sqrt{\text{root}_{[\alpha]}} \quad v} \\
\overbrace{v \quad \text{TH}[\alpha]} \\
\mid \\
\emptyset
\end{array}
$$

Theme Vowel for Weak Verbs. For weak vowels, feature $[\alpha]$ can be assumed absent. The default Vocabulary Item for insertion into the theme vowel position is zero:

(26)
$$[\ ] \leftrightarrow \emptyset\ /\ \begin{array}{c} \text{TH} \\ \mid \\ \underline{\quad} \end{array}$$

Theme Vowels for Strong Verbs. For strong verbs, the theme vowel depends on the verb class, expressed by the feature $[\alpha]$, and on the Tense features. The theme vowel is always either U or A, as can be observed in table 2 above, but the syncretisms between different verb forms depend on the verb class. We will take $[\alpha]$ to be one of $\{uuu,\ uua,\ uau,\ uaa\}$, characterizing the verb class according to its theme vowels as given in table 2.

All perfective past forms follow the pattern of the Aorist.

(27) $\left\{ \begin{array}{c} [uua] \\ \left[uaa\right] \end{array} \right\} \leftrightarrow \textit{-A-}\ /\ \underline{\quad} \begin{bmatrix} + \text{ perf} \\ + \text{ past} \end{bmatrix}$

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All imperfective forms (i.e., the imperfectives, the future, and the imperfective converbs), as well as the Hortative and the Prohibitive follow the Imperfective pattern:[4]

(28) $\left\{ \begin{array}{c} [uau] \\ [uaa] \end{array} \right\} \leftrightarrow \textit{-A-} / \underline{\quad} \left\{ \begin{array}{c} [- \text{ perf}] \\ [+ \text{ hort}] \\ [+ \text{ prohib}] \end{array} \right\}$

All other forms have the theme vowel U for strong verbs:

(29)
$$[\alpha] \leftrightarrow \textit{-U-} / \quad \overset{\text{TH}}{\underset{\rule{1.5em}{0.4pt}}{|}}$$

2.2   Tense

The Vocabulary Items that insert Tense morphemes now look like the following:

(30) $[+ \text{ masd}] \leftrightarrow \textit{-un}$

(31) $\left[\begin{array}{c} - \text{ perf} \\ - \text{ cont} \end{array} \right]^{5} \leftrightarrow \textit{-z}$
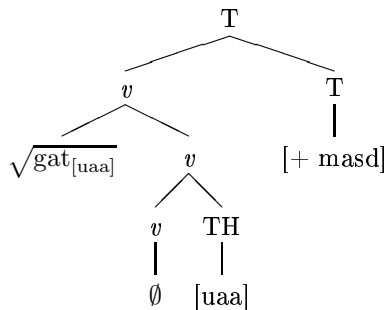
The remaining differences between the endings in strong and weak verbs can be explained phonologically. For example, for the Masdar, one U is elided after another one. In the Imperfective, there is Epenthesis of the i before $\textit{-z}$, etc:

(32) $U \rightarrow \emptyset / U \underline{\quad}$

(33) $\emptyset \rightarrow i / [+ \text{ cons}] \underline{\quad} \text{-z}$

2.3   Sample Derivations

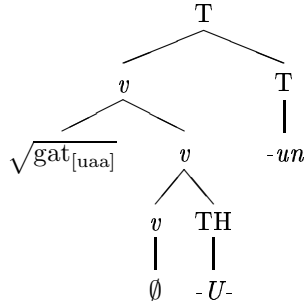(34) Masdar of 'beat': gat-ú-n

Application of (29) and (30):

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[4]We assume here that the Masdar, the Optative, and the Imperative are missing the feature $[\pm \text{ perf}]$.
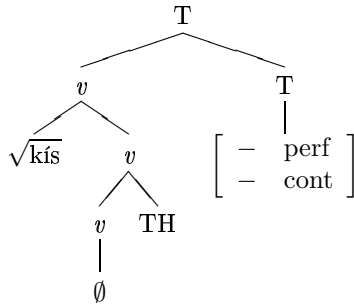
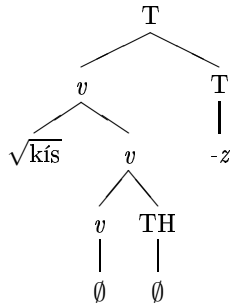[5]the simple, non-continuative, Imperfective

T
├── v
│   ├── √gat$_{[\text{uaa}]}$
│   └── v
│   ├── v — ∅
│   └── TH — *-U-*
└── T — *-un*

Flattening: *gat-u-un* → (phonological rule (32)) *gat-ú-n*.

(35) Imperfective of 'fall silent': kís-iz

T
├── v
│   ├── √kís
│   └── v
│   ├── v — ∅
│   └── TH
└── T —
$\begin{bmatrix} - & \text{perf} \\ - & \text{cont} \end{bmatrix}$

Application of (26) and (31):

T
├── v
│   ├── √kís
│   └── v
│   ├── v — ∅
│   └── TH — ∅
└── T — *-z*

Flattening: *kís-z* → (phonological rule (33)) *kís-i-z*.

3 Conclusion

In this paper we took two instances of Lezgian inflectional morphology, where a comprehensive previous grammar (Haspelmath, 1993) took recourse to the notion of *stems* for their description. We attempted an alternative description and analysis phrased in the framework of Distributed Morphology, that does not rely on stems. Instead, we show, the interaction of syntax and morphology as seen in DM can account for the same data without reifying abstract concepts like stems.

We follow previous reasoning (see Embick and Halle, 2004a) which argues that stems as objects are unnecessary and often misleading.

For the nominal case system, we showed that the oblique "stem" marker in fact does not mark stems (which is quite obvious because it attaches to nouns that are inflected for number). This is a case where recourse to "stems" produces a wrong description of the facts.

In the case of verbal morphology, we hope to have shown that the "stems" as objects are unnecessary, as the behaviour can be explained in more general terms. It is unclear what advantages the positing of abstract "stems" that don't carry any morphological (i.e., featural) meaning would have.

References

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