

The smell of morphemes in the PAF theory: the case of Eastern Mari



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Description

1. Introduction

Topic: The accent system of Eastern Literary Mari (ELM), the standardized dialect based on Eastern Mari (a Finno-Permic Uralic language spoken in the Mari El Republic, by the Volga and Vyatka rivers near the border with Tatarstan).

2. The vowel system

(1)	i	y	u
	e	ø	o
		ə	
		a	

3. The accent rule (preliminary)

Words with full vowels (e.g., *underived nouns*)

- In (2), underived nouns with all full vowels.
- In (3), all vowels are *either full or /ə/*.

(2) a. ol'ma	apple	(3) a. puʃəməʃ	porridge
b. kəgər'tʃen	dove	b. 'kalək	nation

- In (4), all vowels are full while the final vowel is /e/, /o/, or /ø/.
- In (5), nouns end in a final mid vowel and also contain one or more /ə/.

(4) a. kəp'ʃəŋe	beetle	(5) a. 'koləzo	fisherman
b. 'jumo	God	b. 'ikʃəve	child
c. 'ʃyrtə	thread		

- In underived nouns: accent falls on the **last syllable with a full vowel** (Itkonen 1955, Sebeok and Ingemann 1961).
- A **final** open syllable with a **mid** vowel (/e/, /o/, /ø/) is not accented (Riese 2012). Thus, mid vowels behave differently from the other peripheral vowels.

Words with schwa and mid vowels

- In (6), words that contain schwa in all their syllables.
- In (7), /ə/ is in all syllables but the final one, which contains a mid vowel.

(6) a. 'ʃəzə	now	(7) a. 'ərəʃe	stale	c. 'ʃəmle	seventy
b. 'ʃələm	pipe	b. 'ʃəmləʃe	researcher	d. 'ələe	be-3Sg.PAST

- In words with schwa only and those with schwa and a final mid vowel, accent is **initial**. The two kinds of words pattern together *wrt* accent, behaving as “light-only” words.

Summary

- Open final syllables with mid vowels (4), (5), (7) and syllables with /ə/ are **light**.
- The syllables with non-final mid vowels and those with other full vowels are **heavy**.

Weight-by-Position by position (Rosenthal and van der Hulst 1999) is here quality-sensitive: mid vowels count as light only when final.

The accent rule (preliminary)

Thus, I conclude that accent location in ELM is determined by the rule in (9):

(9) *Accent falls on the rightmost heavy syllable of the word; otherwise, accent is initial.*

- That is, ELM is an unbounded Last/First WS accent system.
- The accent rule applies uniformly in underived and complex words (both inflected and derived), and for all lexical categories.
- The rule (9) applies to inflected nouns (10) in the same way as to underived nouns (2-5):

(10) NOM	GEN	INESSIVE	LATIVE	gloss
pa'ʃa	pa'ʃa-n	pa'ʃa-ʃte	pa'ʃa-af	work
u'rem	u'rem-ən	u'rem-əʃto	ure'm-ef	street
'pələʃ	'pələʃ-ən	'pələʃ-əʃto	pələʃ-ef	ear

- The same accent rule applies in derived words, regardless of the category of the stem:
- (11) a. A → N: 'taza healthy ta'za-lək healthiness
- b. V → N: 'vontʃ cross von'tʃ-ək crossing
- c. N → N: məska'ra joke məska'ratʃe joker

(12) a. N → A: 'vem brain 'vem-dəme brainless
b. A → A: ka'ŋa thin kaŋa-'ta meager

- Multiple layers of derivation do not affect accent assignment:
- (13) a. 'vuj head b. 'vuj-dəmo reckless (*literally*, “headless”)
- c. 'vuj-dəmə-lək recklessness

Summary

Accent assignment in ELM is not sensitive to morphological complexity and lexical categories. It does not make reference to morphological structure, nor does it reflect the derivational history of words.

4. Morphologically conditioned exceptions

Certain suffixes (Comitative, Comparative, Imperative) behave exceptionally *wrt* (9). These are morphologically productive and, therefore, lead to systematic exceptionality.

- The Comitative case suffix /-ge/ is always stressed (cf. Riese 2012:97):
- (14) a. jo'tʃa child jotʃa-'ge child-COM
- b. jeʃ family jeʃ-na-'ge family-1Pl.Poss-COM jeʃ-da-'ge family-2Pl.Poss-COM
- The suffix /-de/ “NEG GERUND” is always stressed:
- (15) tunem-af study tunem-'de study-NEG.GERUND

- The Comparative /-la/ is never stressed (Riese 2012: 127):

(16) a. 'kajək	bird	'kajək-la	bird-COMPAR
tul'ʃol	coal	tul'ʃol-la	coal-COMPAR
b. pərt-'em-la	house-1Sg.POSS-COMPAR		
pərt-'et-la	house-2Sg.POSS-COMPAR		
c. pərt-'na-la	house-1Pl.POSS-COMPAR ~ pərt-la-'na	house-COMPAR-1Pl.POSS	

- In Imperatives, the final /-sa/ (2Pl.IMPER) is never stressed:
- (17) ko'daʃ stay-INF 'kodsə stay-2Pl.IMPER

Account

5. The phonetic basis for lightness of final mid vowels

- In ELM, /ə/ is always realized as a centralized mid vowel.
- All mid vowel segments that occur in word-final position are reduced (Riese et al 2012). Indeed, word-finally, the full mid vowels of Eastern Mari (/e/, /o/, /ø/) seems to be centralized.
- For example, Lehiste et al. (2005) found that word-final [e o ø] phrase-finally shift towards the center of the acoustic space, getting closer to the unstressed [ə].

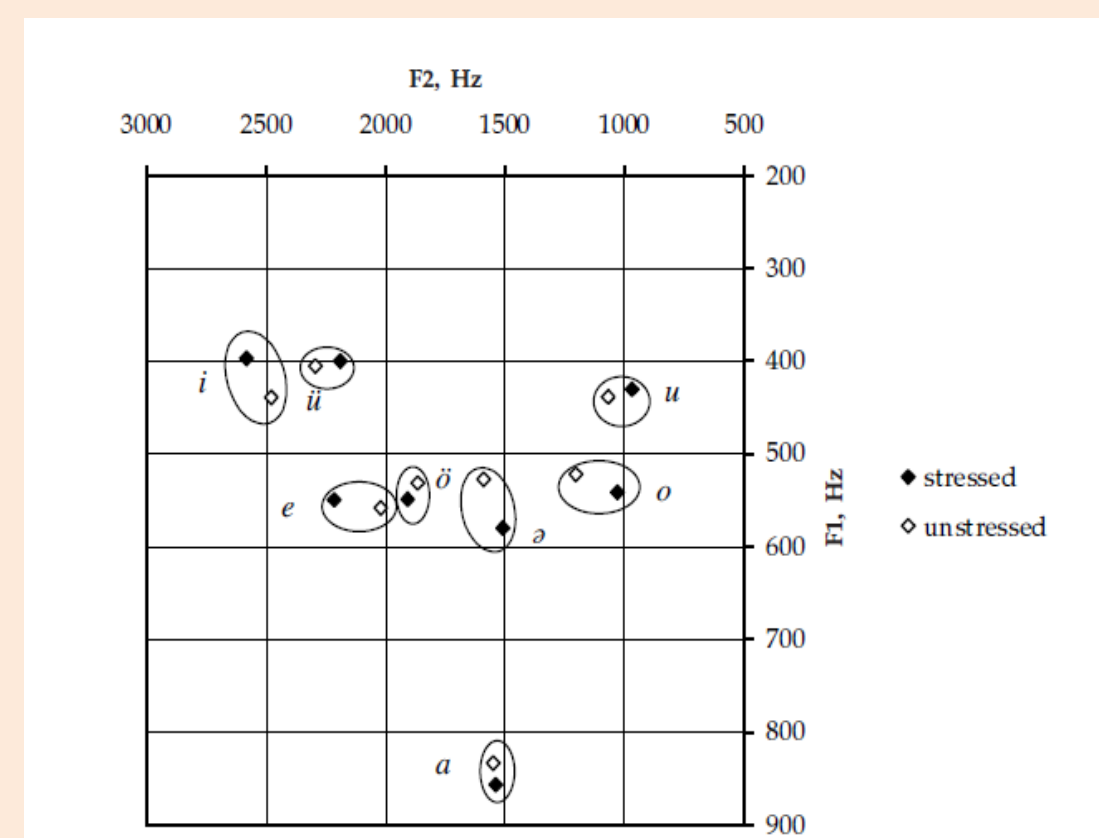


FIGURE 1. *Acoustical vowel diagram of stressed and unstressed vowels in phrase-final words (4 female speakers). Drawn from Lehiste et al. (2005).*

6. The hybrid weight scale

- The diacritic weight:** Like certain syllables can attract stress and thus be phonologically heavy, certain morphemes can attract stress (on one of their syllables) by being lexically specified: this is “diacritic weight” (van der Hulst 1999).
- Phonological weight scales:** In some languages, syllables of different phonological weight are then organized into phonological weight scales.

(18) *Examples of phonological weight scales (from Gordon 2002)*

Klamath (isolate; Oregon, USA)	CVV(C) > CVC > CV
Moro (Niger-Kongo; Sudan)	CVC > full V > reduced V
Kobon (Trans-New Guinea; PNG)	low V > mid V > high V > reduced V
Asheninca (Maipurean; Peru)	CVV > Ca(C),Ce(C),Co(C), CiC > Ci > Ci

The weight systems as in ELM are sensitive both to phonological and diacritic weight. **By extension**, we introduce the “*hybrid weight scale*” that combines both: a language-specific weight hierarchy in which syllables and morphemes are ordered (partially or totally).

- Claim:** The hybrid weight scale (19) is part of the grammar of ELM:

(19) $h_d > h_p \{ l_p, l_d \}$

- Evidence for the scale in (19):**

(20) jeʃ	family	jeʃ-na-'ge	family-1Pl.Poss-COM	*jeʃ-'na-ge
tunem-af	study	tunem-'de	study-NEG.GERUND	*tu'nem-de

$h_p > l_d$
(21) pərt-'na-la house-1Pl.POSS-COMPAR pərt-la-'na house-COMPAR-1Pl.POSS

$h_d > l_d$
(22) a. 'gø somebody-NOM b. ni'gø nobody-NOM *'nigø
'mo something-NOM ni'mo nothing-NOM *'nimo

Hence, the root (/gø-/ /mo-/) is diacritically heavy.

(23) ni'gøla nobody-COMPAR
ni'mola nothing-COMPAR

- From the pairwise comparisons above ($h_d > h_p$, $h_p > l_d$, $h_d > l_d$), we conclude that $h_d > h_p > l_d$. This relation is transitive and, obviously, symmetric. Hence, this is an *ordering*.

$h_d > l_p$
(24) 'pələʃ ear-NOM pələʃ-'ge ear-COMIT

- From the pairwise comparisons ($h_d > l_p$, $h_p > l_p$, $h_d > h_p$), we conclude $h_d > h_p > l_p$. Comparing l_d and l_p , we conclude that $\{l_d, l_p\}$.

(25) a. 'pələʃ ear-NOM 'pələʃ-la ear-COMPAR
b. 'jəŋgərt-əza call-2Pl.IMPER

- Given that /-la/ and /-sa/ are diacritically light and the roots here are phonologically light, we have an explanation for why accent is default initial (according to the accent rule).
Based on the orderings $h_d > h_p > l_d$, $h_d > h_p > l_p$ and $\{l_d, l_p\}$, we thus establish $h_d > h_p > \{l_d, l_p\}$.

7. The grammar

The grammar that I propose consists of the standard parameters of the Primary Accent First (PAF) theory (van der Hulst 1996, 2010, 2012) plus the weight scale established above.

(26) a. The weight scale: $h_d > h_p > \{l_d, l_p\}$
b. The parameter settings: Select (Right), Default (Left), Extrametricality (No)

Sample derivations

The phonologically and diacritically heaviest units in a word are projected. If the word consists of light units only, nothing is projected.

(27) a. /pərt-əm-ən/	house-1Sg.Poss-GEN	b. /pərt-la-na/	house-COMPAR-1Pl.Poss
h_p h_p l_p		h_p l_d h_p	
[(* * *)]		[(* * *)]	Select Project Weight

c. /pərt-əm-ge/ house-1Sg.POSS-COMIT
 h_p h_p h_d

Select (R) *
Project Weight [(*)]

d. /pələʃ-la/ ear-COMPAR
 l_p l_p l_d

Default *
Project Weight [()]

Conclusion

Eastern Literary Mari displays systematic exceptions from the accent rule associated with a small set of individual lexical items which participate in productive morphological processes.

One way to account for this exceptionality would be to use morpheme-specific rules or constraints. However, such constraints are idiosyncratic and extraneous to the general accent-assigning mechanism because they are specific to just those few exceptional morphemes.

Rather than building *ad-hoc* constraints into the mechanism by brute force, I have proposed a well-motivated approach which makes reference to weight rather than to individual morphemes. Quite generally, the approach combines diacritic and phonological weight into a single weight scale which is part of the overall accentual grammar.

In this way, minimally extending the PAF approach, we have provided a comprehensive account of the accent system of ELM capturing the basic insight that accent assignment in ELM makes reference to both phonological and diacritic weight within a single accentual grammar.

